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ENCYCLOPEDIA *of* WORLD HISTORY



**2ND
EDITION**

William H. McNeill, Jerry H. Bentley, David Christian, Ralph C. Croizier, J. R. McNeill, et al., Editors

宝库山 世界历史百科全书



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Editors

宝库山 **BERKSHIRE**
PUBLISHING GROUP
a global point of reference

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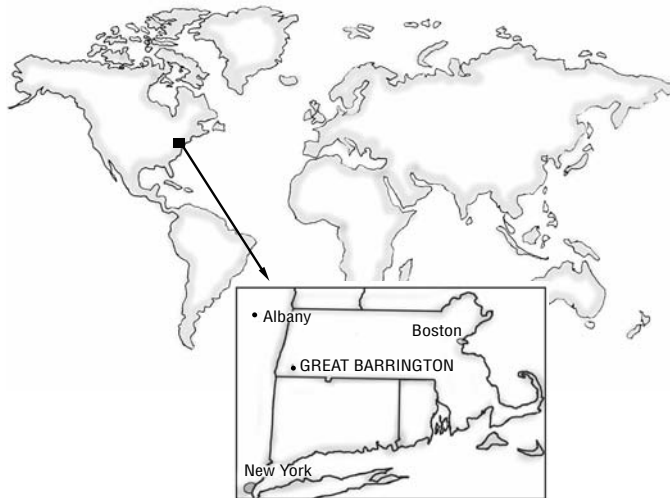
Berkshire Publishing Group LLC

122 Castle Street

Great Barrington, Massachusetts 01230

www.berkshirepublishing.com

Printed in the United States of America



Library of Congress Cataloging-in-Publication Data

Berkshire encyclopedia of world history / William H. McNeill, Jerry H. Bentley, David Christian, editors. — 2nd ed.

p. cm.

Includes bibliographical references and index.

Summary: "An integrated view of the history of our global community from a 21st-century perspective, with a focus on environmental and social issues. The 580 articles, edited and written by scholars around the world, examine connections and interactions made over time (and across cultures and locales) through trade, warfare, migration, religion, and diplomacy"—Provided by publisher.

ISBN 978-1-933782-65-2 (alk. paper)

1. World history—Encyclopedias. I. McNeill, William Hardy, 1917- II. Bentley, Jerry H., 1949- III. Christian, David, 1946- D23.B45 2010

903--dc22

2010021635



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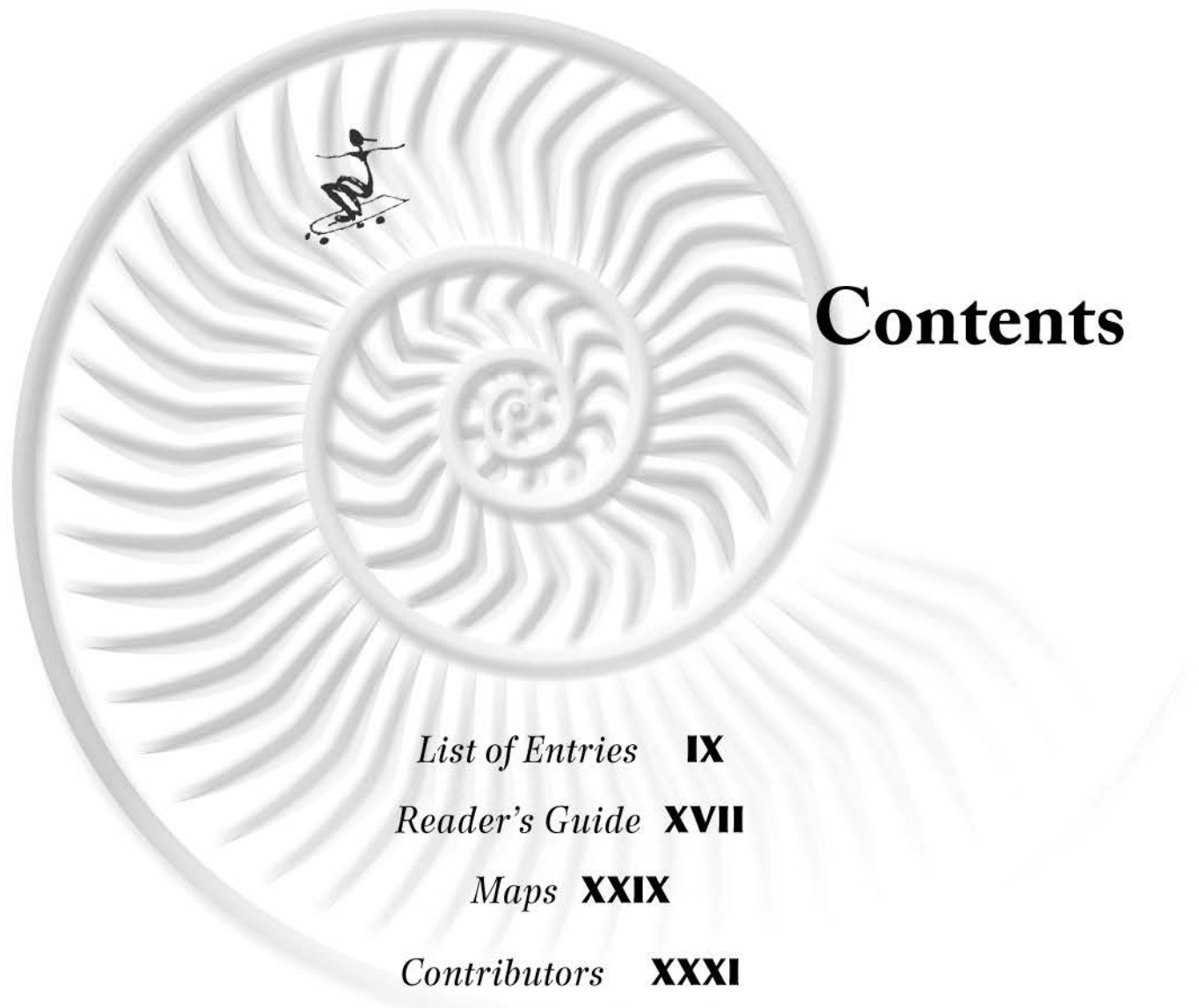
Lisa Clark

Composition and Indexing

Newgen Imaging Systems, Inc.

Printer

Thomson-Shore, Inc.



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From the earliest stages of planning the encyclopedia to its fruition as a second edition, our goal has been to present a body of knowledge whose core is about the movement, interaction, and change that has shaped the world. With that continued focus, on connections and movements over and across time and place, we've designed our Reader's Guide. Its thirty-five topical, alphabetically organized categories—under which we list all the entries relevant to each category—emphasize the ways in which a specific subject can apply to more than one broad field of study. Textiles, for instance, can reveal a people's aesthetic sense and development, as well as provide insight about socioeconomic, political, and cultural aspects of a people. Thus the article "Textiles" appears under the categories Arts and Literature, Commerce—Trade Goods and Products, and Daily Life.

The categories themselves often reflect important themes—lenses through which we view a particular aspect of history—such as Conflict and War or

Diplomacy and Peace. Some categories are based on geographical constructs, others on governments or states. Still others group processes, models, or forces that have driven history over the centuries. We've "dispersed" the names in our Biography category to indicate the places where these figures had their primary or initial influence, and (wherever possible) the field, discipline, or specific topic in which they made an impact. The British political economist Thomas Malthus (1766–1834), for example, one of the first to warn against the dangers of overpopulation, appears under Environment and Ecology; Europe; Philosophy, Ideas, and Thoughts; and Population, while we list Olaudah Equiano (1745–1797), the African writer and abolitionist, under Africa; Americas; and Social and Political Protest Movements.

We include the Reader's Guide here—and of course in its interactive form for online subscriptions—as a valuable resource for students, teachers, course planners, and general readers alike.



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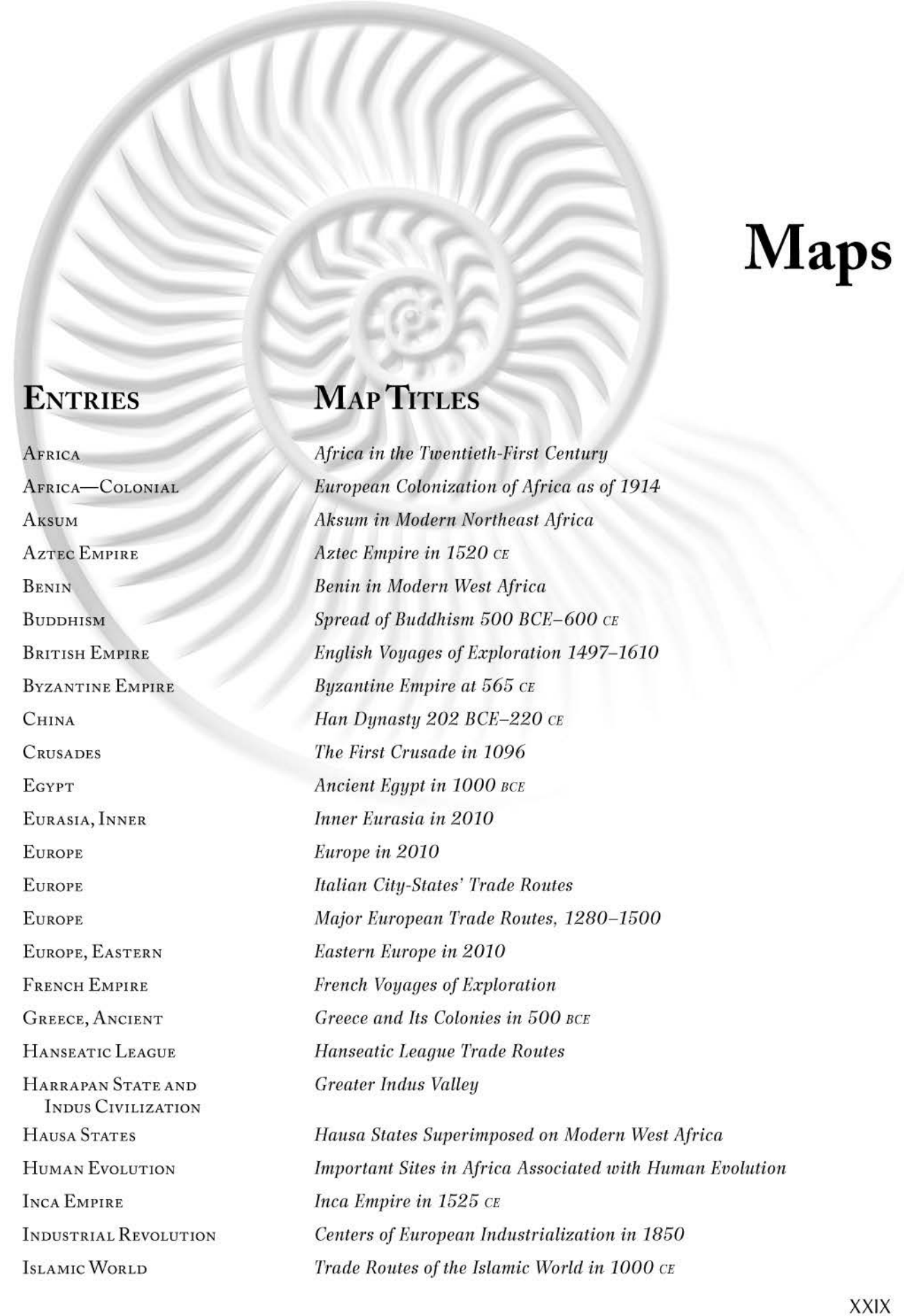
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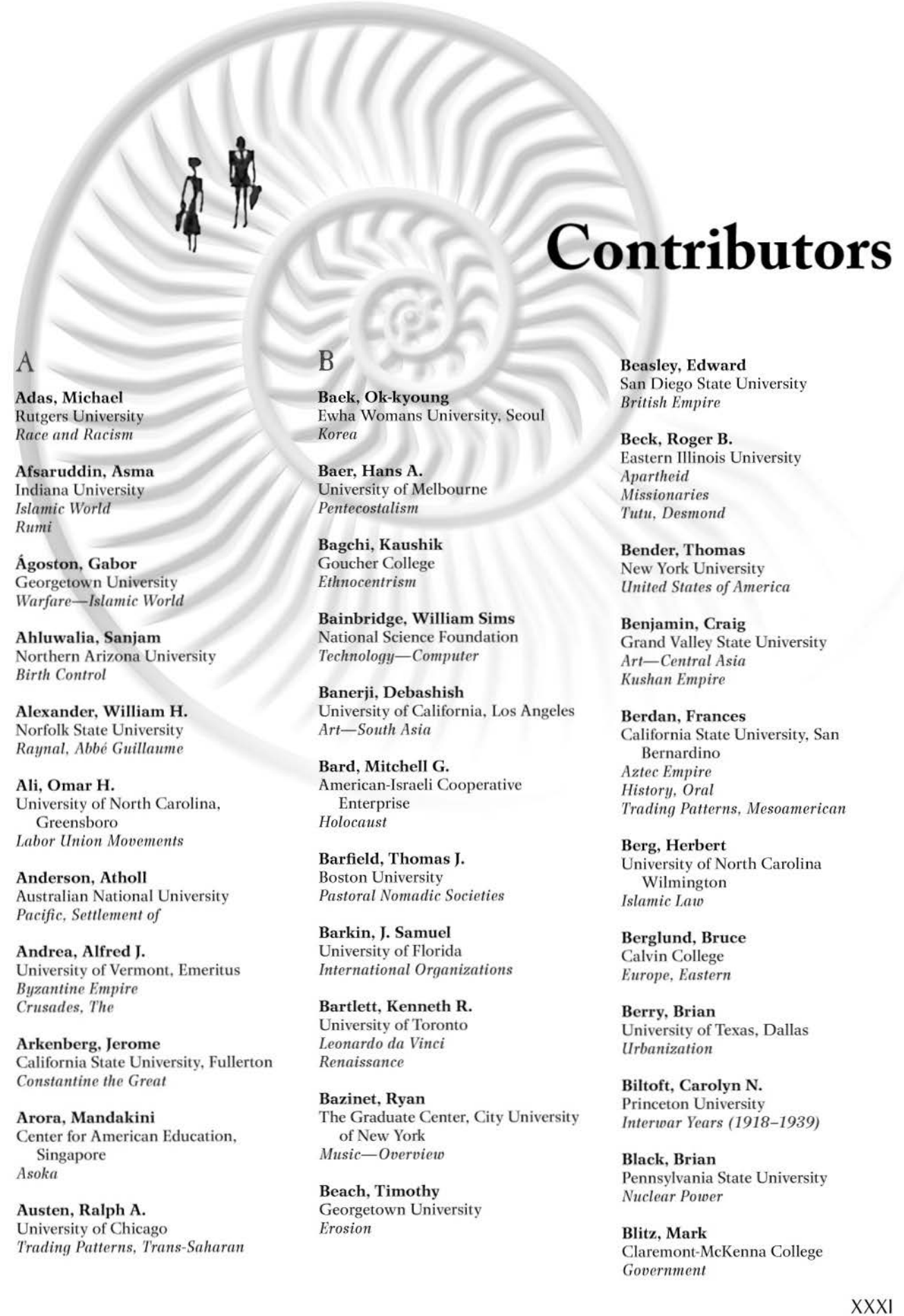
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North Atlantic Treaty Organization (NATO)

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Anthropocene
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Creation Myths
Eurasia, Inner
Periodization
Population Growth
Science—Overview
Steppe Confederations
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Geographic Constructions of the World

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Isabella I
Urban II

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Mao Zedong

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Religious Fundamentalism

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Zionism

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Warfare—Logistics

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Art—Native American

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Migration—Overview

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Population and the Environment

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Child Nurture
China
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Diseases—Overview
Economic Cycles
Engines of History
Globalization—Historical Perspectives
Greece, Ancient
Horses
Iron
Language

Plows

Population

Potatoes

Progress

Roads

Salt

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State, The

Sumerian Civilization

Terrorism

Transportation—Overview

Tropical Gardening

Universities

Villages

Warfare—Europe

Western Civilization

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Human Evolution

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War and Peace—Overview
Warfare—Steppe Nomads

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Nederlands Scheepvaartmuseum
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European Union





World history is both very new and very old: new because it entered high school and college classrooms only in the last fifty-five years, and old because it dates back to the first historians' attempts to answer an age-old question—"How did the world get to be the way it is?"—in a different, more adequate way. The most obvious answer was a creation story, and creation stories were probably universal among our remotest ancestors, since they sufficed to explain everything—as long as people believed that the world continued as it began, with only seasonal and other cyclical repetitions such as birth and death.

But in the second half of the first millennium BCE, in three different parts of the world, social and political changes became so swift and unmistakable that a few individuals in Israel, Greece, and China pioneered what we call historical writing. The historical books of the Jewish scriptures, as edited after the return from exile in Babylonia (subsequent to 539 BCE), recorded in some detail God's universal jurisdiction over history from the time of Abraham—and more generally from the moment of creation in the Garden of Eden. Soon afterward, the Greek historian Herodotus (484–425 BCE) set out to award "a due meed of glory" to the deeds of Greeks and barbarians within a wide circle extending from Egypt in the south to Scythia (modern Ukraine) in the north, touching on India to the east, and extending throughout the Mediterranean coastlands to the west. About three centuries later, the Chinese historian Sima Qian (c. 145–85 BCE) brought Chinese historical records, already voluminous, into comprehensible order by

writing a comparably far-ranging account of China's ruling dynasties from their beginnings, including their relations with a wide circle of adjacent barbarians. Faint traces of contact between the Chinese and Mediterranean worlds have been detected in Herodotus's remarks about mythical peoples living somewhere beyond Scythia, but for all practical purposes the historiographical traditions of China, Greece, and the biblical scriptures remained independent of one another for many centuries.

By the fifth century CE Saint Augustine (354–430) and others had given the Christian version of world history an enduring form, building on Jewish precedent, modified by faith in human redemption through Christ's sacrifice, and anticipating a Day of Judgment when God would bring the world to an end. This remained standard among Christians through succeeding centuries and soon was matched by a Muslim version of the same story, starting with Creation and ending in the Day of Judgment as freshly set forth in Muhammad's revelations.

In China the structuring of world history around the rise and fall of imperial dynasties, pioneered by Sima Qian, remained unchallenged among Confucian scholars until the twentieth century. But in the Western world, as early as the fourteenth century, Jewish, Christian, and Muslim religious narratives began to compete with the revived interest in ancient and pagan Persian, Greek, and Roman historians. Accelerating social change that did not fit easily with religious expectations also disturbed older ideas. This provoked a handful of thinkers to propose

new views of world history. Among Muslims, Ibn Khaldun (1332–1406) stands pre-eminent; he developed a thoroughly secular, cyclical and strikingly original theory of social change. Among Christians, Giambattista Vico (1668–1744), perhaps the most provocative thinker, set out to fuse the Christian and pagan traditions of historiography into what he called a “new science” of social change that also featured cyclic repetition. But such radical new ideas remained exceptional. Nearly everybody remained content with at least lip service to familiar religious accounts of God’s plan from Creation to the Day of Judgment—even when Muslim poets revived the Persian language as a vehicle for celebrating ancient pagan chivalry, and among Christians the study of Greek and Roman classical authors, including historians, began to infiltrate schools and universities.

In the early nineteenth century, however, when medieval and modern history first entered the curriculum of leading German universities, liberal and nationalist ideas dominated the minds of those who set out to discover “what really happened” by investigating state archives and medieval chronicles. These scholars hoped to discard superstitions and other errors by careful source criticism and, intent on detail, assumed that all the true and tested facts of history would speak for themselves. And speak they did, shaped as they were by questions about the national past from eager researchers who wanted to understand why German states had come to lag so far behind the French in modern times.

Simultaneously, source criticism began to challenge the Christian version of history as never before by treating biblical texts as human handiwork, liable to error just like other ancient, often-copied manuscripts. This style of historical research soon spread from Germany to the English-speaking world, even infiltrating France after 1870. Detail and more detail often became an end in itself, and the enormity of

available source materials grew steadily as new sub-themes for investigation proliferated. Nonetheless, by the close of the nineteenth century Lord Acton (1834–1902) and others—drawing largely on classical precedents—created an overarching liberal interpretation of history: it flattered French, British, and U.S. national sensibilities so well that it soon dominated schooling in those countries.

At risk of caricature, this liberal-nationalist version of world history can be summarized as follows. What mattered in the past was the history of liberty, since free men, acting voluntarily, were more efficient both in war and in peace and thus acquired collective power and wealth, as well as all the satisfactions of personal freedom. So Europe, and more specifically western Europe, was where history—significant history, that is—happened, and elsewhere endless repetition of insignificant routines prevailed. Thus Leopold von Ranke (1795–1886), the most revered German historian of his time, could say in his nine-volume *World History* (1882–1888) that history ended for Muslims in 1258 with the Mongol sack of Baghdad, since by then they had fulfilled their world historical role of transmitting important Greek texts to medieval Europeans!

Those texts were important because they helped to show how ancient Greeks and republican Romans pioneered the history of liberty. But ancient liberty did not last and had to be refreshed in western Europe by barbarian invasions in the early Middle Ages, followed by slow and precarious constitutional and legal innovation, punctuated by sporadic revolutionary upheavals, all aimed at restraining tyrannical government and dogmatic religion. By the end of the nineteenth century, the principles of liberty embodied in representative government and religious freedom had become clear, and their fruits were apparent in the superior power and wealth that Great Britain, France, and, *in potentia*, the United States enjoyed.

But Germany and Russia were also eager aspirants to greatness, and clashing national ambitions in due course provoked World War I.

This was the view of history to which I was apprenticed in the 1920s and 1930s, even though my teachers had half forgotten the reason for the distribution of attention that prevailed in their classrooms. Yet World War I had already profoundly challenged the theme of progress toward constitutional perfection upon which this naive and ethnocentric version of human history rested. Freedom to suffer and die in the trenches was a questionable climax to liberal progress; the prolonged depression that set in after 1929, followed by World War II, cast still further doubt on the idea that the recent emergence of constitutional government, as exercised in a few nation-states in a small part of the world, was what gave meaning to the whole human past.

As usual, a few restless thinkers responded. The most notable were Oswald Spengler (1880–1936) in Germany and Arnold J. Toynbee (1889–1975) in Great Britain, both of whom elaborated on classical notions of cyclical rise and fall by treating western Europe as one of several parallel civilizations that followed similar, perhaps even identical, patterns of growth and decay. Spengler and Toynbee both attracted many readers by offering a new explanation for the shifting currents of world affairs, but academic historians paid scant attention, busy as they were pursuing ever more numerous hotly debated questions about specific times and places in the past.

Their investigations expanded literally around the globe after World War II, when Asia, Africa, and every other part of the world started to attract the efforts of professional historians. Simultaneously, archaeologists and anthropologists were exploring the deeper, unrecorded past as well. The resulting very rapid advance in general information about diverse local pasts soon allowed a few ambitious

world historians to develop more inclusive, more nearly adequate versions of the whole human career. In the United States serious efforts to teach world history also began to invade high school classrooms after World War II, as U.S. entanglements abroad became more and more obvious. Colleges and universities lagged behind, but of late many have also begun to teach the subject.

What to emphasize and what to exclude remained a critical question, for, like other scales of history, an intelligible world history requires selective attention to the confusion of knowable facts. Some world historians chose to organize their books around the rise and fall of civilizations, as Spengler and Toynbee had done; others took a continent-by-continent approach. A school of Marxists emphasized a world system in which better-organized core states exploited peripheral peoples for their own enrichment. But the debate about whether such world systems were very ancient, or dated only from the rise of modern capitalism, divided this school into clashing factions. Others argued that cooperation was more significant than exploitation and that communication, allowing the spread of new techniques and ideas within geographical and ecological limits, was the governing pattern of world history.

No single recipe for writing and studying world history has yet emerged and none ever may, since different peoples, with different heritages and different local conditions, are sure to remain at odds with one another, even if globalization persists and intensifies in times to come. But it seems certain that as long as entanglements with the rest of the world remain as inescapable as they are today, national and local history will not suffice to explain how things got to be the way they are. In that case, that age-old question will surely continue to require teachers and scholars to provide some sort of world history for an answer.

This pioneering *Berkshire Encyclopedia of World History*, now in its second edition, is designed to help both beginners and experts sample the best contemporary efforts to make sense of the human past by connecting particular and local histories with larger patterns of world history. Contributors have no single viewpoint, but the editorial process, in choosing what articles to commission and how to distribute attention, aimed at inclusiveness and aspired to insight. How well

we succeeded is for users to discover. The only thing uniting those who cooperated to produce this volume is the belief that human history as a whole is important to study and think about, since genuinely inclusive world history is such a helpful, even necessary, guide for survival in the crowded world in which we live.

William H. McNEILL
Colebrook, Connecticut





Introduction to the 2nd Edition

The *Berkshire Encyclopedia of World History* is, we believe, the first truly *encyclopedic* resource for world history. We've chosen that adjective to reflect the etymology of *encyclopedia* as a "circle of learning." Indeed, from its conception, we intended our encyclopedia to contain a body of knowledge whose core is about the movement, interaction, and change that has shaped the world as we know it today. Beginning with the first edition, published in 2005, the encyclopedia has taken a dynamic world history perspective, showing connections and interactions over time and place through trade, warfare, migration, religion, and diplomacy. In its introductory pages David Christian explained the three periods in human history—the foraging era, the agrarian era, and the modern era. (These essays have now become a popular book called *This Fleeting World: A Short History of Humanity*.) In the articles that followed, a total of 330 historians, archaeologists, anthropologists, sociologists, geographers, and other experts from around the world examined essential themes and patterns, such as government, science, and the arts, then took a closer look at processes, movements, places, events, and people.

Early reviews praised the first edition as "masterful . . . the benchmark against which future history encyclopedias [will be] compared" (*Booklist*) and an "engaging analysis of how history has been shaped" (*Choice*). Students and teachers at the high school and college levels, as well as scholars and professionals, adopted the first edition as a definitive work for a

connected, holistic, view of world history—the story of humans and their place on Earth.

Now, six years later, we are proud to publish a revised six-volume second edition with continued emphasis on the broad themes that help students orient themselves in world history, and an even greater



At a White House ceremony in February 2010, President Obama presented the National Humanities Medal to William H. McNeill for "expanding our understanding of the world," apt words for McNeill's lifelong commitment to scholarship and teaching.



William H. McNeill with Jerry Bentley and a student at the World History Association Conference, 2009.

focus on interdisciplinary approaches to traditional subjects—biological and physical sciences, economics, and the visual arts.

Berkshire has tackled many ambitious projects since publishing the first edition of the *Berkshire Encyclopedia of World History*, including the four-volume *Berkshire Encyclopedia of World Sport* (2005), the five-volume *Berkshire Encyclopedia of China* (2009), and the ten-volume *Berkshire Encyclopedia of Sustainability* (the complete set will be available in 2011). We've also launched "This World of Ours," a series of tiny books on huge topics: David Christian's *This Fleeting World* (in its third printing, this time with an endorsement from Bill Gates), *This Is China* (distilled from the work of our distinguished contributors to the *Encyclopedia of China*), and *This Is Islam* (written by a renowned scholar of Islam) will be followed by *This Good Earth: Sustainability Through the Centuries*. Our forthcoming *Dictionary of Chinese Biography* will tell the "story" of China through the remarkable (and not always famous or "recognized") men and women whose lives helped shape the country over millennia. But publishing a second edition of one of our titles was something we had never done before. Where to begin?

Putting Western Civ Behind

First we renewed our commitment to the teaching of world history, no longer just a study of civilizations, regional histories, chronology, and "great men" but a dynamic field that recognizes over time and place the importance of interactions, connections, and exchanges—of people, other organisms, ideas, and material goods. World historians today, we believe, take an increasingly comparative approach that examines what happened in different places at the same time and thus helps us to understand why life has not always been the same in all places at all times.

Historians themselves have come to the field from many different paths. William H. McNeill once noted in an interview that he was drawn to world history in the 1930s by the work of the anthropologist Clark Wissler, whose studies of social change among Plains Indians provided an intriguing model of culture change. Another of our editors, David Christian, looked toward world history to find the answer to his students' very basic and sensible question, When did history begin? His search led him to archaeology, paleoanthropology, astronomy, and biology, resulting in a synthesis of these seemingly unrelated disciplines within a field he coined as "big history"—a course of study that places the history of humanity and the Earth in the very largest of contexts, that of the universe.

Reassembling Our Editors

Our first-edition editorial team, and the core group that inspired and supported our work on this edition, came together under the direction of William H. McNeill. In the late 1990s, while working on another world history project, the distinguished U.S. presidential historian Robert Ferrell suggested



Planning the *Berkshire Encyclopedia of World History* in October 2002, a group of historians met in Great Barrington. Shown here, after a luncheon at the Egremont Inn, are Judith P. Zinsser, Heidi Roupp, J. R. McNeill, Elizabeth McNeill, William H. McNeill, David Christian, David Levinson, Ralph C. Croizier, and Alfred J. Andrea.

I contact Bill, who had retired to a family home not far from Berkshire Publishing's location in western Massachusetts. From the start Bill blessed us with advice, always generous and sometimes cautionary. Over the years he followed Berkshire's progress with publications we prepared for other publishers. Perhaps our successful creation of the *Encyclopedia of Modern Asia* (Scribner's 2002) convinced him we could produce the goods when we announced our plans to launch our independent publishing imprint with an encyclopedia of world history.

Bill, who understands the web of communication that enables human creativity and invention, initiated the connections that in turn have made this remarkable project possible (in both editions). He introduced us to, among others, Heidi Roupp, founder of the e-journal *World History Connected*, and David Christian, author of *Maps of Time: An Introduction to Big History* (2004). (Christian, along with John McNeill, Bill's son, attended what we fondly think of as the encyclopedia's first official meeting, held on the porch of Bill's Colebrook, Connecticut,

home in August 2002.) John, then the lead editor of our *Encyclopedia of World Environmental History* (Routledge 2004), had already suggested I contact Jerry Bentley, the editor of the *Journal of World History*. And thus we established our connections in the field.

We held a small conference for our editors in October 2002, an ideal time of year to bring people to the Berkshires, a region renowned for its rural beauty and, especially since the early nineteenth century, its cultural bounty. The participants met for two days to frame the encyclopedia, develop a mission statement, and work through several significant areas of debate. Judith Zinsser, whose expertise in women's world history made her a valuable member of our editorial group, joined us, as did Ralph C. Croizier, from the University of Victoria (and the then president of the World History Association), and Alfred J. Andrea, the current WHA president (as of 2010), from the University of Vermont.

Less than seven years later, when we asked our first-edition editors to commit to a second, the

This Fleeting World author David Christian with William H. McNeill, discussing *The Rise of the West* and other publications.



response was overwhelmingly enthusiastic. Ralph, with a special mission to expand and sharpen our art coverage—especially as visual (i.e., non-textual) studies are beginning to play a larger role in how we see world history—officially signed on with Bill, John, David, and Jerry. Not only were they quick to suggest additional topics and recommend leading scholars to write about them—including Jason Thompson (“Egypt”), Elizabeth L. Eisenstein (“Printing”), Oliver Rackham (“Trees”), and Thomas Bender (“United States of America”)—they made new contribution themselves: David with “Anthropocene” and “Big History,” Bill with “Economic Cycles,” “Terrorism,” and numerous others), John with “Population and Environment,” and Ralph with “Art—World History and Art.”

Reorganizing—Or Not

When organizing the first edition we felt a strong need to be faithful to the guiding principles of world history, but we also wanted the content to be easily accessible to readers. When we discussed this problem at our first planning session in 2002, David

Christian had worried that it would be difficult to arrange in book format a body of knowledge that at its core stresses movement, interaction, and change over time.

Thus we rejected the traditional chronological approach that delineates eras in world history and then divides up the articles accordingly. (Using that scheme, where would we have put our article “Extinctions,” which takes readers back some 3.5 billion years to the beginning of life on Earth, and plunges them into the future by contemplating a sixth mass extinction brought on by global warming?) World historians do not generally agree about how to separate the history of the world into eras; they know that eras simply do not begin or end at one point in time, that the start and end date of a particular era can vary widely across regions, and that often the transformations occurring across eras are the crux of the history to be told.

We also rejected the “peoples and cultures” scheme of organizing the content geographically (Africa, Europe, etc.). That approach was neither faithful to world history nor helpful to users, as many of our entries (“Trade Patterns—Indian

Ocean,” for example, or “British Empire”) cross not only regions (and eras) but also topics. The “peoples and cultures” scheme also seemed inappropriate because it encourages what John McNeill calls the “horse race” aspect of history: setting different civilizations in competition.

We finally decided on a combination of the alphabetical approach—the usual and best scheme for an encyclopedia—and a topical approach. By arranging the content alphabetically, we make it easy to find the entries; by including ample cross-references we help create the sense of movement and connection that David Christian identified as vital to our project. Our Reader’s Guide—with thirty-five topical categories, under which we list all the entries relevant to each category—further emphasizes the ways in which a specific subject can apply to more than one broad field of study. Textiles, for instance, can reveal a people’s aesthetic sense and development, as well as provide insight about socioeconomic, political, and cultural aspects of a people. Thus the article “Textiles” appears under the categories Arts and Literature, Commerce—Trade Goods and Products, and Daily Life.

Other wide-ranging topical categories in our Reader’s Guide, such as Health and Disease, Technology and Science, and Religion and Belief Systems, contain within themselves eleven “overview” articles written by renowned scholars—for example, Martin Marty on Religion, David Christian on Science, Daniel R. Headrick on Technology, and William H. McNeill on Disease. This coverage of major themes and patterns in world history has become a distinctive part of our encyclopedia, preparing students and teachers for the “specialist” view in such topics as sacred law or shamanism, alchemy or metallurgy, wind or water energy, and malaria or HIV/AIDS.

With our emphasis on connections and movements over and across time and place, the encyclopedia must also allow users to see connections across articles, to move through the encyclopedia easily, and to find additional resources for advanced or specialized study. Thus the extensive cross-references listed at the end of articles point readers to other related entries, and the index contains both volume and page numbers for easy access. A bibliography (“Further Reading”) section for students and teachers to consult follows each of our 580 articles.

Two changes in our second edition reflect conventions we adopted in 2008, with the *Encyclopedia of China*, for all our encyclopedia publications. First, in the “signatures” of all the scholars and experts who write for us, we now format family names with all-capital letters; this is common practice in international academic circles and especially valuable in a work with numerous Asian and non-Western authors. Second, we now provide an abstract, a 65-word-or-so summary, for each article. (That decision prompted us to rethink our book design and begin each article on a new, wide-margined page—an aesthetic and practical advantage for teachers who want to photocopy articles for classroom and/or homework assignments.) Abstracts, we believe, can provide immediate context of our coverage for a reader familiar with the topic, or they can entice a novice to explore the topic. Abstracts contribute to the reader’s first impression of an article, whether on the printed page in a hard-bound volume or when they appear separately from the article, in an online resource or reader’s guide.

Reassessing Our Approach, Expanding Our Content

The major challenge for authors of our first edition was writing from what we call “a world history

much of this scholarship.) Lauren Arnold describes in detail one particular "Silk Road journey" in her book *Princely Gifts and Papal Treasures: The Franciscan Mission to China 1250-1350 and Its Influence on the Art of the West*. For influence flowing the other way, Arnold has shown how the image of the Virgin Mary with the baby Jesus, brought to China by fourteenth-century Franciscan missionaries, was transferred into Chinese portrayals of the child-giving goddess, Guan Yin.

The question of Chinese contributions to European Renaissance art is still contentious with

most art historians not accepting Arnold's views or those postulating Chinese influence on Giotto published earlier by the Japanese art historian, Hidemichi Tanaka. But mainstream Western art history has recognized that the Renaissance was not entirely a European affair as several well-received books have appeared in the last decade or so showing the connections in art, architecture and culture between Italy, particularly Venice, and its Eastern Mediterranean trading partners in Istanbul, Cairo, and elsewhere. (See Jerry Brotton's *Renaissance Bazaar*, 2002, and his collaboration with Lisa Jardine,



Lauren Arnold, author of *Princely Gifts and Papal Treasures*, noticed a striking similarity between a scroll (left) signed by Tang Yin (1470-1523) and the famous eighth-century painting (right), *Salus Populi Romani*, in Rome's Santa Maria Maggiore. Most likely missionaries had carried a copy of the iconic Roman work to China, where Tang Yin was inspired to adapt the image of the goddess Guan Yin in his portrayal of the Virgin Mary. Nobilio Conservation Studio.

Global Interests: Renaissance Art between East and West, 1996).

In the ensuing age of European maritime expansion these cross-cultural connections expand beyond the Silk Roads and the Mediterranean to become global, especially with the spread of the Jesuit mission. *Art and the Jesuit Missions in Asia and Latin America, 1542-1773*, by Gavin Alexander Bailey (2001), and *The Jesuits and the Arts*, edited by Bailey and John W. O'Malley, deal with the visual arts in this premodern occurrence of globalization. Another art historian, Michael Sullivan (1973), looks beyond the Jesuits and brings the interchange between European and East Asian art (Japan as well as China) up to the twentieth century in his pioneering study *The Meeting of Eastern and Western Art*.

In the four decades since Sullivan's broad-gauged survey, other art historians have conducted more focused research on particular cases of East-West contact and intra-Asian interactions. One example is the work of Aida Wong, now a resident in the United States but significantly from Hong Kong, that meeting place of international and transnational influences. Wong's recent book, *Porting the Mists: Discovering Japan and the Rise of National-Style Painting in China* (2006), internationalizes the art history and cultural history of twentieth-century East Asia. A shorter work of Wong's, "Landscapes of Nandal Bose (1882-1966): Japonism and Populism in Modern India," published in *Shadows of the Past: Okakura Tenshin and Pan-Asianism* and edited by Brij Tankha, is even more clearly world history, or world history through art, with its revelations of how pan-Asian thought arose in reaction to Western colonial dominance.

Later in the globalized twentieth century, these connections are even more obvious. To take just three of many art histories dealing with East-West artistic interchange in the last century, there is Shiji Takashima and Thomas Rimer's *Paris in Japan*, published by the Japan Foundation in 1987; Partha Mitter's *Art and Nationalism in Modern India* (1995), and Liliane Karouk's 2004 study *Modern Egyptian Art, 1910-2003*.



Utagawa Sadahide (1807-1873). This ukiyo-e style Japanese print shows a Dutch family along the shoreline in Yokohama; a Dutch ship is at anchor in the background. As an example of a European subject rendered in traditional Japanese style, the print attests to the East-West cultural exchange. Library of Congress.

Such studies can contribute significantly to world historian's efforts to trace the emergence of global styles, global culture, and the complex questions of cultural identity they produce. This is also the area where visual and cultural studies may be most useful, and world historians should not ignore the work on small societies by cultural anthropologists well represented in the essay collection, *Exploring World Art* (Venrux et al. 2006). Beyond the small societies and tourist art described in those essays, there are other examples of globally circulating pop culture and art, such as the

The illustrations on these pages, from "Art—World History and Art" by Ralph C. Croizier, show cross-cultural influences in painting throughout history, from Rome to China and from the Netherlands to Japan.

perspective." It wasn't always clear to them—or to us—exactly what that entailed. An ideal article, we believed, would show how its subject changed over time; address the subject's connections with other concepts, times, and places; and state the subject's significance for (and influence on) the present. But it took concrete examples, not abstract discussion, to make clear what was truly successful. Consider the story of our article "Glass."

The article as submitted said a great deal about the influence of glass on history—on the scientific revolution, on household hygiene—but relatively little about the history of glass itself. As such, it fit well within our world history approach. But our experienced staff editors expected the article also to include information about how glass is made, or to cover technical improvements in its manufacture. We

realized that while we'd gotten what we wanted—a world history of glass—querying the author for a little additional detail would get us (and our readers) something more. The revised "Glass" became our touchstone when deciding if an article was right for us, or at least if an article had potential. (It's sheer serendipity—or the synchronicity that world historians often talk about—that this clarity came through "Glass.")

Art in World History

When it came to world history and art, we sought the expertise of Ralph Croizier, who encouraged us to balance and interweave our coverage, logistically organized by area, with cross-cultural contact. "Contact and comparison—the warp and the woof of the new world history," Ralph wrote early in the

planning stage, “not just a Cook’s travelogue of what happened where.” Robert Poor’s “Art—East Asian and European Connections,” for instance, begins when trade brought Chinese silk to Roman weavers, circa 100 CE, and continues through the centuries to examine other East–West connections, such as how two celebrated nineteenth-century Japanese printmakers, Hokusai and Hiroshige, used one-point perspective, a Western technique.

Wilfried Van Damme’s “Art—Paleolithic,” another important addition to the second edition, explains how recent archaeological discoveries in Africa have prompted scholars in a growing number of disciplines to revive their interest in Paleolithic-era art—and thus to open up debate on fundamental world history questions that involve the origins of human art making; the physical, mental, social, and cultural conditions that made it possible; and the fact that creating art has endured and become increasingly integral to our existence. Kathleen I. Kimball, in “Art—World Art Studies,” discusses how the study of objects and technologies humans have made from their earliest days to the present—world art—takes a similar interdisciplinary approach, mining such fields as archaeology, anthropology, art history, and, perhaps surprisingly but significantly, neurobiology.

Ralph’s own contribution, “Art—World History and Art,” addresses the gradual disconnection of visual studies from world history that began in the 1960s (with the growing emphasis of historians on trade, the transfer of technologies, and environmental impacts), and then goes on to raise provocative questions: Is art illustration or content? In world history research, where is the art? If world history has always been undisciplined, Ralph asks—that is to say, not confined within the bounds of normal academic history, but drawing data and ideas from cultural anthropology, the natural sciences, and even economics—is there hope that other these academic

disciplines might bring more visibility to world history? Ralph explains how, at least to some extent, this hope is being fulfilled.

The Environment in World History

As well as being Berkshire’s founder and publisher, I am an environmental author, with titles ranging from the 1989 *Home Ecology* to the recent *Armchair Environmentalist*. One of my priorities has been to publish not only ambitious multivolume works devoted wholly to the environment—the *Berkshire Encyclopedia of Environmental World History* and the *Berkshire Encyclopedia of Sustainability*—but to include environmental topics in all our publications. (Readers can find a discussion of e-waste in *Human–Computer Interaction* and a description of a Seattle library, with a “green roof” designed to reduce rainwater runoff, in *Libraries We Love*). No question then, that in the second edition of *World History* we would expand our coverage of topics that impact the environment, such as deforestation, nuclear power, and population growth, but of environments themselves (often fragile ones), such as Amazonia, Antarctica, Aboriginal Australia, and Oceania. James Lovelock contributed an article on Gaia theory, a major force in understanding the Earth as a living organism “with living and nonliving components existing in concert to create an environment that continues to be suitable for life.” We cover crops that sustain us, such as cereal grains, sweet potato, and manioc, and, in addition to “Domestication, Plant and Animal,” articles about camels, sheep, and goats, creatures vital to the development of civilizations and societies.

Another of our goals in the second edition was to update articles like “Earthquakes” and “Oil Spills” to reflect, as best we could in an encyclopedia format, the natural or human-caused disasters that affect the biosphere. On the brink of going to press, nearly ninety days after the *Deepwater Horizon* explosion,



Scientists measure a dead Kemp's ridley sea turtle on the Gulf Coast of Mississippi. This endangered species is especially at risk in an oil spill because it feeds indiscriminately and has no behavioral mechanism for avoiding oiled waters. National Oceanic and Atmospheric Administration.

the largest crude carriers that will "fit" through the Panama and Suez canals, respectively. Recent requirements and conventions, such as the International Maritime Organization's International Convention for the Prevention of Pollution from Ships, dictate that only double-hulled ships can ply international waters; this should decrease the number of tanker spills in the future, although not all regulations and conventions are legally binding. Oil spill-susceptible single-hulled ships are due to be taken out of service worldwide by 2010, although it remains to be seen whether this will happen or not.

Although the large oil spills receive media attention, only about 4 percent of oil entering the oceans comes from tanker accidents. Another 25 percent enters from tanker operations, 14 percent from other transport accidents, and 34 percent from rivers and estuaries. About 11 percent of the oil entering the oceans comes from natural seeps.

Major Spills

Since 1978 there has been a steady increase in the number of small spills, whereas the number of large

spills has remained relatively constant. One to three spills of over 38 million liters happen each year. One or two catastrophic accidents in any given year can substantially increase the amount of oil spilled onto the land and into the oceans. The small spills of less than 378,000 liters apiece add up to about 38 million liters a year worldwide. Even without major disasters, large quantities of oil spill into marine and inland habitats.

The largest spill on record dumped 907 million liters into the Persian Gulf in 1991 as Iraqi forces sabotaged hundreds of wells, oil terminals, and tankers when they withdrew from their position in Kuwait during the Gulf War, but most spills are smaller. The 1970s were the worst decade on record in terms of both numbers of oil spills and quantities of oil spilled, according to the International Tanker Owners Pollution Federation (ITOPF). Other large spills have included the oil well Ixtoc-1 in Mexico (329 million liters, 1979), Norwester Field in Arabia (302 million liters, 1980), Fergana Valley in Uzbekistan (302 million liters, 1992), *Castillo de Belfor* off South Africa (294 million liters, 1983), and the *Amoco Cadiz* off France (257 million liters,



After the Exxon Valdez spill in Prince William Sound, workers attempted to clean the shoreline using high-pressure, hot-water washes in which oil is heated from the beaches, collected within floating boom, and then skimmed from the surface of the water. National Oceanic and Atmospheric Administration.

1978). All other spills were less than 189 million liters each. The *Exxon Valdez* spill of 1989 in Alaska was twenty-eighth on the list, with 41 million liters, although the spill was particularly devastating because of the fragile nature of the affected sub-Arctic ecosystem. Because the 2010 Gulf of Mexico spill is not yet fully contained at this writing, nearly three months after the explosion of the *Deepwater Horizon* platform—and because the estimates of how much oil spilled per day varied so dramatically, depending on the source—determining its place in this world hierarchy is premature. According to Kayvan Farzaneh, writing in the 30 April 2010 issue of *Foreign Policy*, the Gulf spill would clearly dwarf the *Exxon Valdez* disaster, however, based on average estimates of 5,000 barrels spilled a day for 90 days, or about 75 million liters.

Effects of Oil Spills

Animals and plants and the nonliving parts of ecosystems are not equally vulnerable to oil spills. Some plants are fragile and have narrow habitat ranges, and they grow only in isolated sites. Some animals are very specialized, living in only a few places or eating only a few kinds of foods. Such species are

particularly vulnerable to even small oil spills. Plants and animals in Arctic environments are fragile because of the limited growing season, limited diversity, and slow decay of the oil itself.

Other species are generalists, with wide tolerances for different environmental conditions, broad food requirements, and large geographical distributions. Such animals and plants are very adaptable and often can recover quickly from an oil spill, although the initial death toll may be high. Still other animals, such as some birds, fish, and mammals, can move away from a spill if its spread is slow.

Factors that determine whether an oil spill has devastating effects on plants and animals include size of the spill, type of oil, time of the spill (particularly in relation to the lifecycle of the organisms), vulnerability of particular plants and animals, and the vulnerability of particular ecosystems. Location of a spill can determine effects. In spills in intertidal marshes or estuaries where there is little tidal flow, there is a reduced opportunity for the oil to be carried out to sea, where dilution can blunt the effects. Oil often concentrates at the edge of marshes where there is also a high concentration of invertebrates, young fish, and foraging birds. Many invertebrates

As we prepared to go to press we asked Joanna Burger, the author of "Oils Spills," to update her article to reflect the *Deepwater Horizon* disaster in the Gulf of Mexico and a synchronous oil spill on the other side of the planet, at Dalian, an important coastal resort city in China.

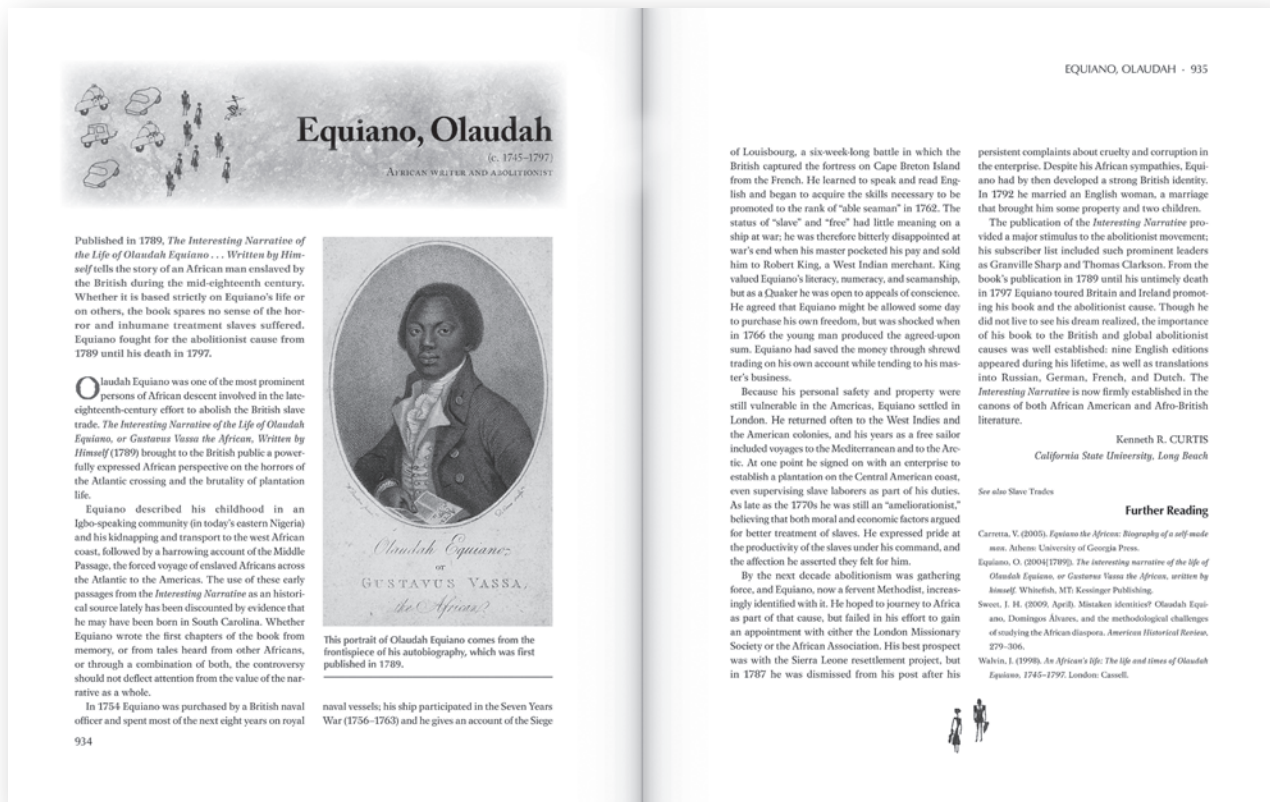
we asked our "Oil Spills" author to add something, quickly, when it was (and is) still uncertain if the leak in the Gulf of Mexico is contained.

Visual Content

The second edition contains more than twelve hundred illustrations, photos, and maps. Of the maps, sixty were drawn specifically for the encyclopedia, and thirty are historical. Each one is significant not just because it reveals an aspect of history, but because it is a part of history itself. Old maps tell us much about how mapmakers and government officials—and the explorers they made the maps for—saw the world and their place in it. For example, the series of maps in the "Africa" article shows how European perceptions of the continent changed over the

years as Europeans experienced more frequent and extensive contact with the land and its people.

Many of the photos in these volumes come from older (eighteenth- and nineteenth-century) sources and, like the old maps, are themselves part of history. As we note in captions to several "period" illustrations, some present highly stylized and romanticized images of other peoples and other places, providing readers with insight, for example, as to how European explorers and colonialists perceived the peoples they encountered in the Americas. We've drawn dozens of new illustrations from sources including the National Archives, the Library of Congress, the New York Public Library, and the World Digital Library. Authors have also provided unique photographs and other illustrative material from their personal collections and from institutional holdings such



An article by Kenneth R. Curtis about Olaudah Equiano, an African writer and abolitionist, includes an historical portrait from the frontispiece of Equiano's autobiography, first published in 1789.

the University of Rhode Island Historic Textile and Costume Collection. The online version and PDFs available for classroom supplementary reading will include the illustrations in full color.

As we nearly doubled our visual content in the second edition, we looked for ways to use images in surprising, illuminating contexts. "Oil Spills," for instance, examines the use of oil throughout history (as well as the natural and human-caused spills resulting from its use). We thought it equally important to select photographs that indicate the damage wreaked by spills in our own time—a picture of an endangered Kemp's ridley sea turtle in the Gulf of Mexico, and another of workers hosing the beach at Prince William Sound (after the *Exxon Valdez* spill) with high-pressure, hot water washes—and images that offer a view of the practical uses of oil

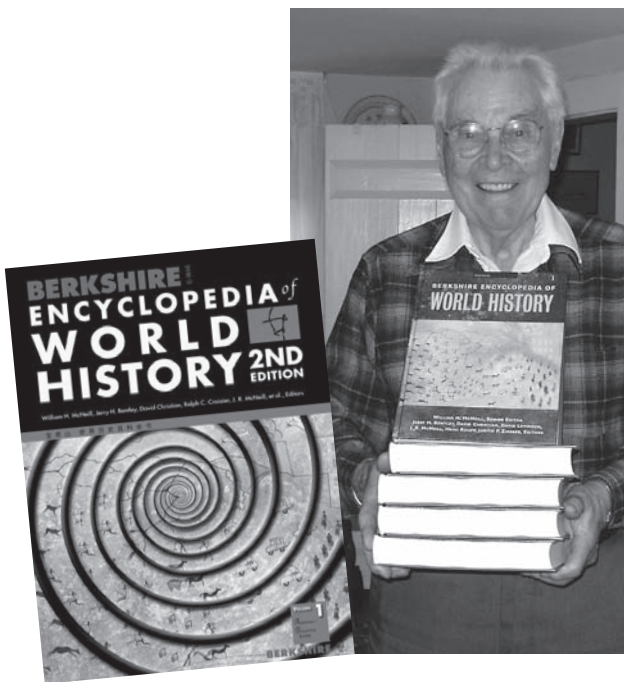
in ancient times. So we chose an image already slotted for another article ("Moses"): Sir Lawrence Alma-Tadema's lavish 1904 biblical depiction, *The Finding of Moses*, in which the pharaoh's daughter and her attendants, traveling in a caravan, carry Moses away from the Nile in his bulrush raft "daubed with pitch." (Pitch, or bitumen, a sticky oil derivative, naturally seeped from mines dug by ancient Mesopotamian peoples, who used it to caulk boats.) Sumerians used pitch as "glue" for jewelry making and mosaics; thus we also included a photo of one of the great treasures excavated from the royal cemetery in the Sumerian city of Ur—a goat "sculpted" from gold, silver, lapis lazuli, copper, and limestone, all held together with bitumen. These examples reveal our abiding interest in providing stimulating visual materials that transport readers across time, space, and cultures.

Judging a Book by Its Cover: The Circle of Learning

We wanted the cover for our encyclopedia of human history to convey the breadth of the human experience over time, not just simply to patch together images from particular times and places. Bill McNeill suggested cave paintings as a possible inspiration. Standing on his porch one day, saying good-bye after a meeting and the lunch he invariably prepares, he said, “Maybe cave art would do it.” He wondered if we could, somehow, use a cave art motif to show the main eras in human history. A tall order indeed, but it inspired the designer, Lisa Clark, to depict a cave wall set against the cosmos—the setting for human history. The images she “painted” on that wall transport us from the foraging era, through agrarianism, and into the modern age.

For the second edition we sought a new look, one that would preserve the original idea of movement, transformation, and connection throughout time, as well as incorporate a circular design element—something we more or less subconsciously adopted in our two latest multivolume publications. For the *Berkshire Encyclopedia of China* we used an open fan; for the *Berkshire Encyclopedia of Sustainability* we chose unfurling fronds of fern. For *World History 2*, Anna Myers superimposed an image of a nautilus shell fossil over Lisa’s first-edition cave art. The result, I believe, reflects Berkshire’s commitment to building circles of learning that are ever-opening but also bound in ways that make them both useful and beautiful.

This commitment does not just apply to Berkshire, of course; it is a shared endeavor, for publishers and librarians, authors and teachers. It is an endeavor



William H. McNeill, holding the first edition of the *Berkshire Encyclopedia of World History*. The new cover for the second edition is in the foreground.

that depends on new forms of networking as well as the best traditions of scholarly information management. It can exist harmoniously with Google and Wikipedia, which are exciting, untamed bazaars full of wonderful things as well as dross. Our job is to create something like the traditional Chinese teahouse of antiquity—a haven of calm within a wild world, a haven where readers and researchers can find sustenance, inspiration, and community.

Karen Christensen

Karen CHRISTENSEN 沈凯伦

Founder and CEO, Berkshire Publishing Group 宝库山.
Great Barrington, Massachusetts

About William H. McNeill

Editor, *Berkshire Encyclopedia of World History*
(1st and 2nd Editions)

William H. McNeill, a renowned world historian and author of more than twenty books, is the Robert A. Millikan Distinguished Service Professor Emeritus of History at the University of Chicago. In 1996 he was awarded the Erasmus Prize for his contributions to European culture. He is pictured here on 25 February 2010, at ninety-two, receiving a National Humanities Award from President Barack Obama. The text engraved on his medal reads, "Expanding our understanding of the world." Those words could not be more appropriate for McNeill, who has made a lifelong commitment to scholarship (he is the recipient of twenty honorary degrees) and teaching.

After serving in World War II, McNeill received his PhD from Cornell University in 1947. His thesis topic—the potato—reveals both his passion for gardening (McNeill always serves his guests something he's grown himself) and his dedication to research that explores global historical patterns. To explain transformations in the world today, McNeill is fond of pointing out that China is now the largest producer and consumer of a vegetable that originated in the Andes of South America, changed the course of European warfare, and became closely associated with Ireland during the famine of the nineteenth century. Readers of the *Berkshire Encyclopedia of World History*'s second edition will have a chance to



William H. McNeill receiving the National Humanities medal from President Obama in 2010.

absorb the fascinating details about how the “tuber from the Andes” made it to Europe and beyond in McNeill’s article, “Potatoes.”

McNeill is a prolific writer whose work spans a wide range of human interests and accomplishments. His many books include: *The Rise of the West: A History of the Human Community* (9th edition, 1991), which received the National Book Award and the Gordon J. Laing prize; *Plagues and Peoples* (revised edition, 1998); *The Pursuit of Power* (1982); *Keeping Together in Time: Dance & Drill in Human History* (1995); and, with his son, the world historian J. R. McNeill, *The Human Web: A Birdseye View of Human History* (2003). His autobiography, *The Pursuit of Truth*, was published in 2005.

Throughout his career McNeill has served on numerous committees and commissions; he was a

member of the editorial board for the *Encyclopedia Britannica* (1981–1998); the vice chairman of the Christopher Columbus Quincentenary Jubilee Commission (1985–1993); co-chair of the curriculum task force for the National Commission on Social Studies (1987–1989); vice chairman for the National Council for History Standards (1992–1994); and president (1985) of the American History Association. He has written extensively for the *New York Review of Books*.

McNeill lives in Colebrook, Connecticut, in a house his late wife Elizabeth inherited from her family; his large extended family joins him there in the summer and at Christmas. His own story of visiting his grandparents on Prince Edward Island was published as *Summers Long Ago: On Grandfather’s Farm and in Grandmother’s Kitchen*.



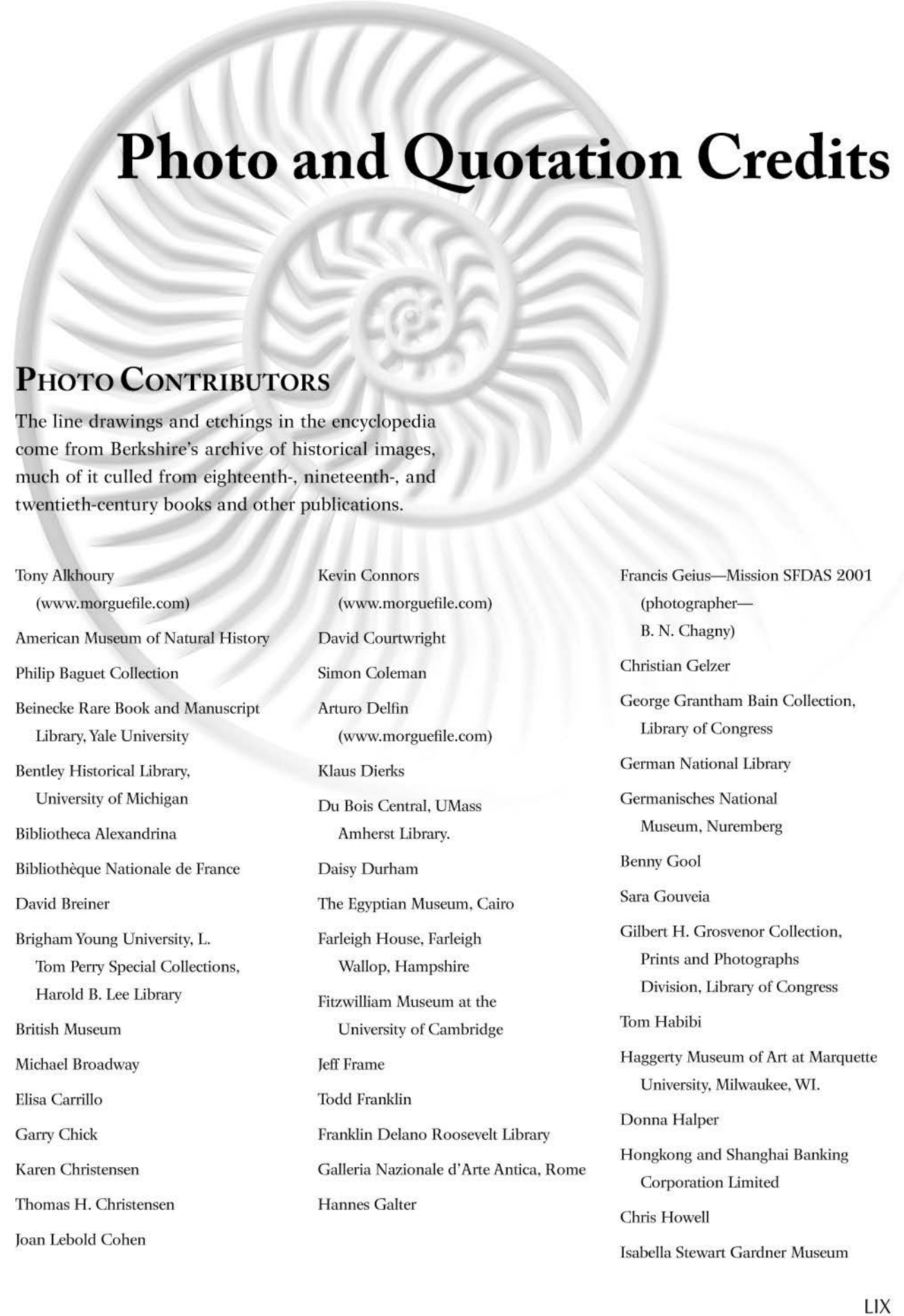


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PHOTO CONTRIBUTORS

The line drawings and etchings in the encyclopedia come from Berkshire's archive of historical images, much of it culled from eighteenth-, nineteenth-, and twentieth-century books and other publications.

Tony Alkhoury
(www.morguefile.com)

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National Archives, Print and Records Administration	Schomburg Center for Research in Black Culture/Manuscripts, Archives, and Rare Books Division	Wallace Collection, London
	Sean M. Scully	John Watson

QUOTATION CONTRIBUTORS

The following individuals graciously supplied us with quotations that we've used throughout the encyclopedia to enrich the text—most of them are attributed to historical figures, with some drawn from insightful anonymous sources. Thanks especially to David Christian, whose “personal collection” of favorite quotes illuminates myriad perspectives on world history.

Brian J. Boeck

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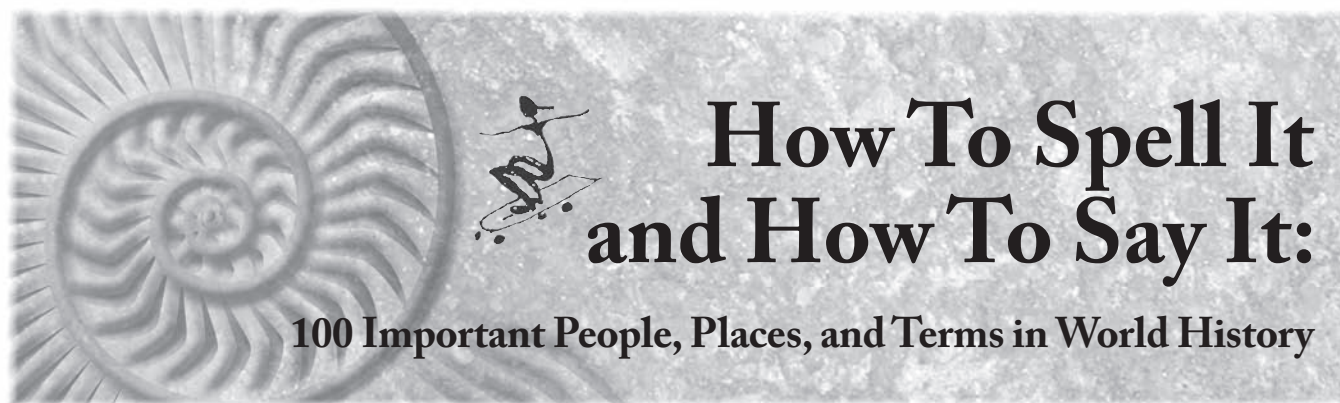
Melvin E. Page

Andrew Sherratt

Peter G. Stillman

Chandar Sundaram





Ralph Waldo Emerson once said, “A foolish consistency is the hobgoblin of little minds.” Each time Berkshire Publishing Group sets to work creating an encyclopedia, we review the guidelines that determine how we will present names and terms that have changed in the course of history or through language alterations. We strive for consistency, though not the foolish kind against which Emerson warned.

Languages and geographic terms evolve regularly, and sometimes staying current means that we can’t be completely consistent. Adding to the challenge is the fact that words in languages not based on the Latin alphabet (e.g., Chinese, Japanese, Arabic, Hebrew) must be transliterated—spelled in the language of another alphabet or “romanized” into English. And even within a language, transliteration systems change. Many people who grew up knowing the Wade-Giles system of Chinese romanization (with such spellings as Peking and Mao Tse-tung) had to become accustomed to seeing words using the pinyin romanization system introduced in the 1950s (with new spellings such as Beijing and Mao Zedong).

By and large, we look to *Merriam-Webster’s Collegiate Dictionary, Eleventh Edition* (known as M-W 11), as our spelling authority, with *Merriam-Webster’s Biographical Dictionary* and *Merriam-Webster’s Geographic Dictionary, Third Edition* for terms not in M-W 11. But sometimes we overrule Merriam-Webster for a compelling reason. For example, the historian Ross E. Dunn—who wrote the *Berkshire Encyclopedia of World History’s* article on Ibn Battuta (and who is a leading expert on the

fourteenth-century Arab scholar)—drops the final “h” of M-W’s preferred form, “Battutah.” In another case, the West African town of Timbuktu is so well known by that spelling that we opted for it over M-W’s preferred “Tomboctou.”

Finally, there is the matter of using diacritical marks that indicate other how other languages differentiate among phonetic sounds or meaning: grave (`) and acute (´) accents in French; the stress marks in Spanish that distinguish certain homonyms; the umlaut (¨) and macron (¯) common to several language families; and the apostrophe and reverse apostrophe that stand in for ayn and hamza (the Arabic consonants that have no equivalent in the Latin alphabet)—and that’s just a small sampling. Although English-language typesetting software is beginning to make it easier to convert these diacritical marks from word-processing programs, we continue to use them sparingly in larger publications that include myriad words from numerous languages—while in our small books, such as *This Is China* and *This Is Islam*, we include diacritics for readers who want to become more familiar with a specific language. Herein you will find diacritics used primarily for proper names and terms in which they are most recognizable to English-language readers.

We thought it would be useful (and fun) to provide a listing of the “Top 100” terms—suggested by our editors—that have alternate spellings and names. We’ve also listed pronunciations for non-English names and terms. (The syllable in capital letters is the one to be accented; note, however, that Chinese and other languages do not stress individual syllables.)

People

<i>Preferred usage</i>	<i>Pronunciation</i>	<i>Alternates</i>
ALEXANDER THE GREAT		Alexander, Alexander of Macedon
ASOKA	a-SHO-ka	Ashoka
AUGUSTINE, SAINT		Augustine of Hippo
AURANGZEB	or-ang-ZEB	'Alamgir
BUDDHA		Siddhartha Gautama
CAESAR, AUGUSTUS		Augustus Caesar, Caesar Augustus
CHIANG KAI-SHEK	chang kye-shek	Jiang Jieshi
CHINGGIS KHAN	CHEN-gis kon	Chinghis, Chinghiz, Chingiz, Genghis
CONFUCIUS	con-FYU-shus	Kong Fuzi, K'ung Fu-tzu
DA GAMA, VASCO		not Gama, Vasco da
GANDHI, MOHANDAS	GHAN-dee, mo-HAN-des	Gandhi, Mahatma
GALILEO GALILEI	ga-li-LAY-o ga-li-LAY	not Galilei, Galileo
HAN WUDI	hon woot-dee	Han Wu Di, Han Wu-ti
IBN BATTUTA	ib-un ba-TOO-ta	Ibn Battutah
JESUS		Jesus Christ, Jesus of Nazareth
KANGXI EMPEROR	kong-hsee	K'ang-his
KHUBILAI KHAN	KOO-blah kon	Kublai, Qubilai
LAOZI	laud-zuh	Lao-tzu, Lao Tzu
LENIN, VLADIMIR ILYICH		Lenin, Vladimir Ilich
LEONARDO DA VINCI	lee-o-NAR-do da-VIN-chee	Leonardo
MAO ZEDONG	mao zeh-DON	Mao Tse-tung
MENCIUS	MEN-chee-us	Mengzi, Meng-tzu, Meng Tzu
MOTECUHZOMA II	mo-tek-w-ZO-ma	Montezuma II; Moctezuma
MUHAMMAD	mo-HA-med	Mohammad, the Prophet Muhammed, Mehemet
NAPOLEON	na-POLE-eon	Napoléon Bonaparte
QIN SHI HUANGDI	chin sher hwang-dee	Ch'in Shih Huang-ti
SALADIN	SAL-a-den	Salah al-Din, Selahedin
SIMA QIAN	suma chee-en	Ssu-ma Ch'ien
SUI YANGDI	sway yahng-dee	Sui Yang-ti
SÜLEYMAN	soo-lay-MON	Süleyman the Magnificent, Süleyman I, Suleiman the Lawgiver
SUN YAT-SEN	soon yat-sen	Sun Yixian
TANG TAIZONG	tahng taizong	T'ang T'ai-tsung
THOMAS AQUINAS, SAINT	a-KWY-nas	not Aquinas, Thomas
TIMUR	TEE-more	Timur Lenk, Tamerlane, Tamburlaine

People (continued)

<i>Preferred usage</i>	<i>Pronunciation</i>	<i>Alternates</i>
URBAN II		Otho, also Otto, Odo, Eudes—of Lagery
YONGLE EMPEROR		Zhu Di
ZHENG HE	jeng huh	Cheng Ho
ZHU YUANZHANG	joo you-ahn-jahng	Chu Yüan-chang

Places

<i>Preferred usage</i>	<i>Pronunciation</i>	<i>Alternates / Historical Variations</i>
AFRO-EURASIA		Afroeurasia; Africa, Europe, and Asia
AKSUM		Axum
BEIJING	bay-jin	Peking
ANATOLIA		Asia Minor
BUKHARA	boo-KAR-a	Bokhara, Boukhara
CAMBODIA		Khmer Republic, Kampuchea
CENTRAL ASIA		Inner Asia
CZECH REPUBLIC AND SLOVAKIA	chek, slow-VA-kee-a	Czechoslovakia
EAST INDIES		Insular Southeast Asia
EGYPT		United Arab Republic
GUANGZHOU	gwang-joe	Canton
HABSBURG		Hapsburg
HUANG RIVER	hwang	Huang He, Yellow River
IRAN		Persia
IRAQ		Mesopotamia
ISTANBUL	iss-tan-BULL	Constantinople, Byzantium
KANDAHAR	KON-da-har	Qandahar
KAZAKHSTAN	kah-zak-stan	Khazakstan
KHWARIZM	KWA-ra-zem	Kwarezm, Khwarazm, Khuwarizm
KONGO		Congo
MESOAMERICA		Middle America, Central America
MUMBAI	MUM-bye	Bombay
MYANMAR	MY-AN-mar	Burma
SAMARQAND	SA-mar-kand	Samarkand
SHILLA KINGDOM	shil-la	Silla Kingdom
SONGHAI	SOHNG-hi	Songhay
SRI LANKA	shree LAN-ka	Ceylon

Places (continued)

<i>Preferred usage</i>	<i>Pronunciation</i>	<i>Alternates / Historical Variations</i>
THAILAND	TIE-land	Siam
TIMBUKTU	tim-BUCK-too	Timbukto, Tombouctou
VIETNAM, LAOS, CAMBODIA		formerly known as Indochina
WEST INDIES		Caribbean
YANGZI RIVER	yang tzee	Yang-tze, Chang

Religious, Political and Cultural Terms

<i>Preferred usage</i>	<i>Pronunciation</i>	<i>Alternates</i>
AL-JAZEERA	al-jah-ZEER-a	Al Jazeera, Al-Jazeera
AL-QAEDA	al-KAY-da	Al Qaeda, al-queda
ANALECTS OF CONFUCIUS		Sayings of Confucius
<i>BHAGAVAD GITA</i>	ba-ga-vad-GEE-ta	Bhagavadgita
BIBLE		The Old and New Testaments
BRAHMA		Brahman, Brahmin
CZAR		tsar
DAOISM	dow-ism	Taoism
<i>I CHING</i>	ye-chang	<i>Yijing</i>
INDIGENOUS PEOPLES		primitive, native, nonindustrial
KUSHAN EMPIRE	koosh-an	Kushana, Kusana
LATTER-DAY SAINTS		Mormons
MUGHAL EMPIRE		Moghol, Mogol
MUSLIM		Moslem
NATIVE AMERICANS		American Indians
PERSIAN EMPIRE		Achaemenian Empire
QING DYNASTY	ching	Ch'ing dynasty
QUR'AN	kor-ahn	Quran, Koran
SASANIAN EMPIRE		Sassanian, Sasanid, Sassanid Empire
SATI		suttee
SHI'A	SHEE-a	Shia
SHARIA	sha-REE-a	shari'a, Islamic law
SIVA	SHEE-va	Shiva
SONG DYNASTY	sueng	Sung dynasty
TANG DYNASTY	tong	T'ang dynasty
TORAH		Five Books of Moses

Religious, Political and Cultural Terms (continued)

<i>Preferred usage</i>	<i>Pronunciation</i>	<i>Alternates</i>
VODUN	voo-DOO	voodoo, vodou
WAGADU EMPIRE		Ghana
WORLD WAR I		First World War, The Great War
WORLD WAR II		Second World War



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Entries



Abraham

(2ND MILLENNIUM BCE)

HEBREW PATRIARCH AND LEADER

Abraham plays a foundational role in the scriptures of the three major monotheistic religions (Judaism, Christianity, and Islam) as the first human to become aware of and act out divine will. Symbolic characteristics specific to each text—obedience in the Hebrew Bible, faithfulness in the New Testament, and submissiveness in the Qur'an—have resulted in conflicting theological positions with the potential to impact secular matters of the world.

According to the Hebrew Bible, New Testament, and Qur'an, as well as their respective interpretive literatures, Abraham is the first person to realize and act out the divine will. Although foundational

figures appear in literatures (such as the Gilgamesh epic) that are more ancient than the Hebrew Bible (Old Testament), these have been forgotten to history and only rediscovered through archaeology and the deciphering of dead languages. Abraham first appears in the book of Genesis and serves as the original human to affirm monotheism and to act on that affirmation. The symbolic meaning and significance of Abraham differs among the three great monotheistic religious systems.

Abraham's symbolic importance is first established in Genesis, where in biblical religion he epitomizes obedience to the divine will. He obeys God's commands to leave his ancestral home for a foreign land (Genesis 12), circumcise himself and his male

Guercino, *Abraham Casting Out Hagar and Ishmael* (1657). Oil on canvas. An illustration of Genesis 21, in which Abraham exiles his eldest son. Pinacoteca di Brera, Milan.



offspring as part of God's covenant (Genesis 17), exile his eldest son Ishmael (Genesis 21), and finally, in his greatest act of obedience, raise up Isaac, his only remaining child, as a burnt offering (Genesis 22). In return for his obedience, God promises through the divine covenant to provide Abraham with a multitude of offspring and a land in which his progeny will live.

In the Christian Bible (New Testament), Abraham's significance lies in his unwavering faith. In Romans 4, Abraham's merit is associated less with obedience to the divine will than with his faith in God's ultimate grace. It is his faith that provides him the merit for God's having chosen him for the covenant in the first place, and the covenant becomes one of faith rather than obedience. Members of the divine covenant are, therefore, only those who demonstrate faith in the saving power of Christ (Galatians 4:21–5:1).

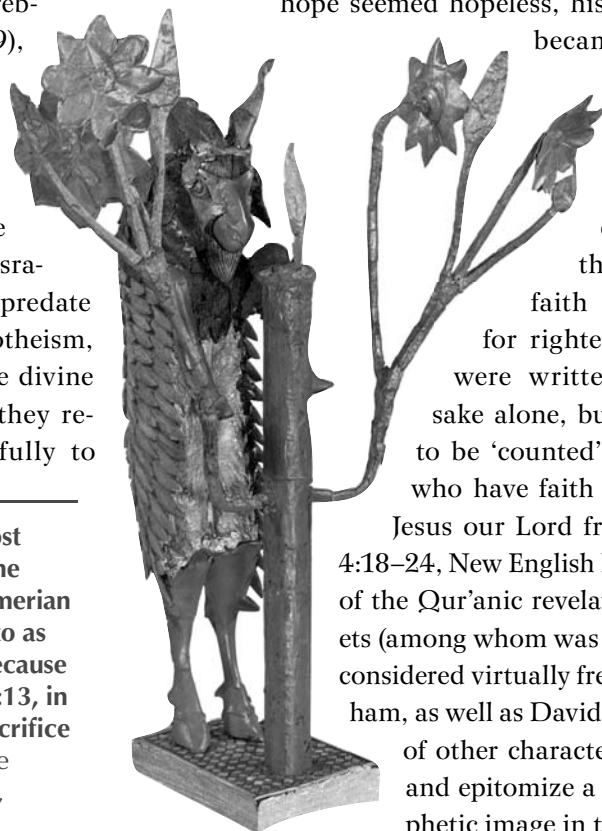
In the Qur'an, Abraham signifies human submission (the meaning of the word Islam) to God (2:127–128; 37:103). Abraham rebels against idolatry (37:83–99), fulfills God's commands (2:124), raises and purifies the foundations of God's "House" in Mecca (2:125–132), and establishes his offspring there (13:37). Although the ancient Israelites and Christians and Jews predate the emergence of Islamic monotheism, they did not remain true to the divine covenants (5:12–14) because they refused to submit themselves fully to

God's absolute unity (9:30). Therefore, "Abraham was not a Jew nor a Christian, but was an early monotheist (hanif), one who submits to God's will (muslim), not an idolater" (3:67). Abraham's importance is so firmly established in the foundation narrative of the Hebrew Bible that he cannot be ignored in subsequent Scriptures. Each Scripture, however, imbues a special quality to the person of Abraham and the meaning of his character.

The nature of Abraham's leadership is also depicted with some variety among the three Scriptures. The Abraham of the Hebrew Bible is a literary character with foibles and weaknesses who struggles to realize his role of lonely monotheist in an uncertain and overwhelmingly idolatrous world. When he fears for his own life, he is willing to risk the well-being of Sarah (Genesis 12:12–13; 20:1–11), and he seems on occasion even to question God's promise (Genesis 17:15–18). By the time of the New Testament, however, religious figures have taken on a more consistently righteous character: "When hope seemed hopeless, his faith was such that he

became 'father of many nations,' in agreement with the words which had been spoken to him: 'Thus shall your descendants be.' . . . And that is why Abraham's faith was 'counted to him for righteousness.' Those words were written, not for Abraham's sake alone, but for our sake too: it is to be 'counted' in the same way to us who have faith in the God who raised Jesus our Lord from the dead" (Romans 4:18–24, New English Bible). And by the period of the Qur'anic revelation, the biblical prophets (among whom was counted Abraham) were considered virtually free from error. Thus Abraham, as well as David and Solomon and a host of other characters, are free of all doubt and epitomize a somewhat different prophetic image in the Qur'an. The strength

This sculpted goat, one of the most famous objects excavated from the royal cemetery in the ancient Sumerian city of Ur, is frequently referred to as the "Ram Caught in a Thicket" because the biblical image (from Gen. 22:13, in which Abraham finds a ram to sacrifice in lieu of his son) so aptly fits. The University Museum, Philadelphia, Pennsylvania.



of Abraham's intellect proves the true unity of God (Qur'an 6:74–79), and Abraham never doubts the divine will or God's goodness (Qur'an 37:83–113).

While Abraham's role in world history is, therefore, as the mythic founder of monotheism, he symbolizes three different and often conflicting narratives. The competing and polemical narratives transcend the person of Abraham and bring in the other members of his family, including Sarah, Hagar, Isaac, and Ishmael as well as other scriptural characters and institutions. Not only does each narrative serve to justify a theological position, it also serves as a polemic to argue against the theological and institutional positions of the others. This, in turn, has served to justify and fuel ongoing intellectual, economic, political, and military competition and conflict among the three monotheistic religions in history.

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See also Judaism; Islam

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Absolutism

Though extremely widespread in seventeenth-century Europe, absolutism existed elsewhere as early as 1500, when monarchs who were uncomfortable with too much political, religious, and social unrest aimed to pacify their subjects by claiming their divine right to the crown. Compared to modern totalitarian dictators, however, who have sophisticated means of surveillance and propaganda, absolute rulers were far less powerful.

European absolutism grew out of a need for order in the face of political and religious polarization. Absolute kings in Europe identified sectarian dissidents and aristocratic landowners as the primary culprits behind civil wars. They moved to confront these alleged villains by claiming to rule by divine right, insisting upon religious uniformity, constructing large civilian and military bureaucracies accountable only to the Crown, turning the nobility into dependent window dressing with much social but far less political power, and by exacting high excise taxes that failed to cover the escalating costs of bureaucratic spending and the social round at court. Absolutism was not unique to seventeenth-century Europe; absolute kings ruled in China, India, western Africa, the Ottoman Empire, Safavid Persia, and Tokugawa Japan between 1500 and 1800. Indeed, in Europe itself, the origins of absolutism appeared when kings in England and France tried to increase their power against feudal lords and the Church between the eleventh and fourteenth centuries. These foundations began to strengthen when the “new monarchs” of Western Europe tried to stabilize and professionalize their governments in the spirit of the

Renaissance. The Protestant Reformation both weakened and strengthened this tendency toward royal centralization. It unleashed popular discontent with traditional authorities (including those kings who did not share the reformers’ zeal), but it also confirmed the Erastian notion of the monarch, not the pope, deciding the spiritual matters of countries, even in those places that remained Catholic. Absolutism in seventeenth-century Europe was just the latest and most self-conscious effort in a long push to make the king supreme in both spiritual and, thus, temporal policy.

Divine Right and Religious Intolerance

By claiming to rule only by the grace of God, rulers gained credibility and confidence. For example, Louis XIV of France (1638–1715) overcame the treacherous Fronde (the civil war lasting from 1648 to 1653) of his childhood by invoking divine justification for leading without either the Estates-General or ecclesiastical surrogates. After his final accession as sole ruler in 1661, he became known as the Sun King, from whom all energy and power came. His rays extended to the provinces, where intendants carried out his wishes without his physical presence. Even after a long reign ending with disastrous wars and famines in the early 1700s, Louis still demanded and largely commanded universal respect because of the conventional belief in God’s will behind his blunders and whims. It would take the corrosive critical thinking of the Enlightenment, beginning with the next generation, to undermine slowly the passive obedience necessary for unenlightened absolutism to work. From a global perspective, however, Louis

was neither original nor excessive in his claims for divine inspiration. A century before, Süleyman the Great of the Ottoman Empire had claimed that his deity Allah anointed him as the direct deputy, or caliph, of Muhammad, the prophet of his faith. A contemporary of Louis XIV, the Emperor Kangxi of China continued the age-old tradition of receiving the “mandate from heaven,” even though he was a Manchu outsider. The emperors of Benin and Dahomey wore shoes that stood very high above the ground so as not to dirty their semidivine feet with common earth. Their god or gods all insisted, according to the monarchs, that their way was the best way for their people to worship.

By insisting upon religious uniformity, rulers hoped to pacify through codified intolerance, a strategy used more often in Europe than elsewhere. In particular, Louis XIV revoked the Edict of Nantes in 1685, exiling his Huguenot, or French Protestant, minority in the process. His grandfather Henry IV had issued the Edict in 1598, hoping to end thirty years of civil war by granting Huguenots limited autonomy in a largely Catholic France. Louis saw the Huguenots, however prosperous and assimilated, as a threat to national security largely because he saw them as a fifth column sharing the same faith as his Dutch and English rivals. To Protestants in England and Holland, Catholicism became intrinsically linked to absolutism. Yet Protestant monarchs claiming to be absolute in the German states and in Sweden could be just as insistent on their religion being the only religion of their people. In contrast, sixteenth-century Muslim rulers had tried religious tolerance as a cornerstone of their leadership. In Ottoman Turkey, Süleyman continued the early Islamic tolerance of monotheistic faiths such as Christianity and Judaism. Akbar the Great of Mughal India, a Muslim, tried to build bridges to his Hindu majority by trying to merge the two religions. This trend did not last, however. By the time Louis XIV came to power in France, later Ottomans were far more suspicious of their Christian subjects. Akbar’s great-grandson Aurangzeb, furthermore, viewed his merger as blasphemy and emphasized Islamic superiority, which

doomed his dynasty before opportunistic British and French adventurers. Of all the absolute monarchs, the most tolerant and most successful outside of Europe was Kangxi of China, but even he drew the line on ethnocentric emissaries from the Pope.

Bureaucratic Rule

To ensure religious uniformity and thus national security, monarchs needed professionals whom they could control and trust. By constructing large civilian and military bureaucracies accountable only to the Crown, rulers relied on loyal experts rather than on fickle vassals. For example, Frederick William of Prussia based his autocracy upon bureaucracy. Prussian armies and officials became synonymous with disciplined and reliable efficiency. Similarly, Peter the Great of Russia defeated Swedish and Ottoman adversaries by using uniformed soldiers paid by him rather than by individual boyars. From Spain through Austria to Sweden, agencies censored, and spies opened letters, in part to stay on the royal payroll. This feature of absolutism again was not unique to Europe. The Qing drew upon entrenched Confucian values of scholar-bureaucrats as heroes to combat the indigenous gentry. The Ottomans continued long-held Byzantine traditions of big government to rule their diverse dominions.

By turning the nobility into decorative dependents with much social but far less political power, monarchs became the major providers of patronage and hospitality at artificially ostentatious capital cities. Bureaucrats who could be fired did most of the work of local and central government by 1700, allowing aristocrats who could not be fired even more leisure time. Louis XIV’s Versailles provided the most notorious backdrops for elite partying, all done at taxpayers’ expense. At Versailles, nobles who had once fought over provinces now fought over who would attend the king’s next soiree. From Madrid to Vienna to Saint Petersburg, baroque and rococo palaces underscored the wealth and majesty of their monarchs. Indeed, Peter the Great created Saint Petersburg in 1703 as his answer to the pomp and theater of Versailles,



announcing to the world that Russia was an absolutist European state with a gilded window to the West. Of course, the burden for funding this largesse fell hardest upon the poor with regressive tariffs and sales taxes. In France especially, nobles and clergy were exempted from most taxes, largely to gain their loyalty and their indifference to royal spendthrifts. From a global perspective, however, the most put-upon taxpayers living in an absolute state lived in Tokugawa Japan, where peasants paid almost one-half their incomes in taxes.

Monarchs limited the wealth of their nations by raising taxes on the poor to pay for the loyalty and comfort of the well connected. This was acutely true of the European variety of absolutism. Louis XIV left France destitute, despite the fact that it was the most populous country in Europe. His legacy of national indebtedness would grow into the nightmare that set the stage for the Revolution. Under the mercantilism of the financier and statesman Jean-Baptiste Colbert, wealth was supposed to trickle down through the Sun King and his favored monopolies, particularly a domestic silk industry, to the common people. Unfortunately for him and his realm, Louis was as bad a businessman as he was a commander in chief. His protected industries were not protected from royal graft and bureaucratic inertia; they were no match globally against more entrepreneurial English and Dutch freelancers. Adam Smith's caricature of mercantilists as craven incompetents was not far from the truth.

Limited Monarchies in the Seventeenth Century

At least three of the major exceptions to absolutist rule in Europe prospered largely because their rulers still had more limited executive power. While Poland did not last long because it lacked a strong central government and was partitioned into extinction by absolute monarchies by 1795, the Dutch Republic, England, and Scotland prided themselves on being both Protestant and relatively

free of absolutism. After winning its long struggle for independence against Habsburg Spain in 1648, the Dutch Republic generated wealth that was put back into business and not back into a voracious, bloated bureaucracy. The kings of England and Scotland tried to become absolute during the seventeenth century, but their attempts failed, with one king beheaded in 1649 and one of his sons essentially fired by Parliament in 1688. England and Scotland then imported a Dutch king, William of Orange, to rule under limits, issuing the Bill of Rights of 1689. When Britain (the union of England and Scotland after 1707) economically eclipsed the Dutch Republic in the eighteenth century, the British used Dutch ideas about banking, insurance, and stock exchanges, all of which were slow to be reproduced in absolute monarchies such as Austria, Prussia, and France.

Absolutism and the Enlightenment

While more stodgy and less dynamic than their Dutch and British counterparts, absolute monarchies in most other parts of Europe did not remain static during the second half of the eighteenth century. This partial makeover was in contrast to Muslim and Chinese contemporaries who clung much more closely to hidebound tradition. Most significantly, enlightened absolutism in Europe recast the kings as devotees of the *philosophes*. Frederick the Great of Prussia, the son of Frederick William, learned from Voltaire to make his bureaucracy even more professional and less arbitrary than his martinet father. His government allowed some expressive freedoms and used fewer tortures, all in the spirit of the Age of Reason. He forced his people to adopt more rational ways of farming, even making them cultivate the American potato over traditional favorites. Nevertheless, Frederick's devotion to reform was selective at best. He kept his own serfs despite rhetorical objections to the idea of serfdom, and he reserved bureaucratic positions and their accompanying privileges for the Junkers, the Prussian aristocratic landowners.

All parties without exception, when they seek for power, are varieties of absolutism. • **Pierre Joseph Proudhon (1809–1865)**

Catherine the Great of Russia was even more timid in her pursuit of change. While she seemed to patronize the activities and agree with the intentions of the Enlightenment, she expanded serfdom into newly acquired territories and dropped all taxes on the nobility entirely in 1785. Other monarchs went much further than Frederick and Catherine in their embrace of directed progress for all of their people. Adhering to the Enlightenment's economic views, Charles III of Spain encouraged free trade within his empire with his famous decrees of 1778 and 1789. He also ended the practice of selling high offices to the highest bidder, making his colonial bureaucracy more accountable and, unfortunately for his successors, more resented. Religious freedom under the Bourbon reforms paradoxically required a degree of religious intolerance: Jesuits were now seen as retrograde obstacles to progress rather than as purveyors of absolutist civilization and were expelled from the Spanish Empire in 1767. While Jesuits were also expelled from the Portuguese Empire in the name of enlightened despotism in 1759, Joseph II of Austria abolished discriminatory measures against Protestants and Jews in the 1780s without expelling the Jesuits. He even abolished serfdom in 1781 by royal edict.

Absolutism and Totalitarianism

Absolutism, however enlightened, should not be confused with modern totalitarianism. Absolute kings were far less powerful than modern dictators. Technologies of surveillance and propaganda used by Adolf Hitler, Joseph Stalin, and Idi Amin were unavailable to Louis XIV, Frederick William, and Kangxi. Absolute monarchs claimed sovereignty from God, while totalitarian dictators claimed sovereignty from a majority of their people. The French Revolution's most radical phase introduced a more efficient form of centralization. The most effective of

the enlightened despots, Napoleon, acted as a transition between the two types, judiciously choosing the people as a more solid and credible foundation for power than God.

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See also Elizabeth I; Napoleon; Parliamentaryism

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Adolescence

The time of life known in Western culture as adolescence, the transitional stage between childhood and adulthood, is associated with the set of physical, emotional, and motivational changes brought on by puberty. While the stage exists in every society, the duration and degree of upheaval it causes for a child of a given culture depend upon the context in which child is raised.

The term *adolescence* refers to both a chronological stage in the human life cycle and a psychological and behavioral profile understood to uniquely describe a specific category of people. Chronologically, adolescence is the transitional stage between childhood and adulthood. Psychologically and behaviorally, adolescence is a time of life characterized by emotional upheaval, risk taking, rule breaking, increased conflict with parents, uncertainty about self-identity, and heightened interest in romantic attachments and sexual activity. Although all known societies, past and present, distinguish among children, adults, and old people, adolescence is not universally acknowledged as a separate stage in the life cycle of a person. The term *adolescence* as used to indicate youthfulness seems to have appeared in the English language only at the end of the nineteenth century, and the idea of adolescence as a special developmental stage did not surface formally in Western culture until the twentieth century.

Adolescence as a distinct stage of development also appears to be absent in certain non-Western societies. Among the Cubeo people of the northwestern Amazon in South America, for example, puberty signals

the arrival of adulthood, and no distinct adolescent stage is recognized. The Cree Native Americans distinguish only between adults and nonadults; a male child is a “small man” and a female child a “small woman.” Even when a society reserves a special status for the pubescent boy or girl, the chronological age span may not overlap the familiar definition of adolescence. Thus, among the North American Chipewewa people, puberty was understood to signal the beginning of a special stage of life, but that stage lasted until a person had grandchildren. Nevertheless, a stage in the life cycle comparable to adolescence is extremely common across time and geography. Virtually all in a sample of 186 cultures around the world recognize some kind of transition period between childhood and adulthood. What most differentiates adolescence across societies is the duration of the adolescent transition and the degree of upheaval experienced by the young person. The almost universal presence of adolescence across time and geography is attributable to certain universal features of human development. Variations that occur in the duration and quality of the adolescent transition are accounted for by differences in the context in which children are raised, which influence how the universal aspects of adolescence are played out in particular cases.

Universal Aspects of Adolescence

As a chronological stage of life, adolescence roughly coincides with puberty. Puberty is a complex set of physiological processes that results in physical, emotional, and motivational changes in a person. These changes include maturation of the reproductive system and associated increased interest in the

opposite sex and parenting, along with maturation of secondary sex characteristics such as body size, body shape, and patterns of hair growth. All of these changes are precipitated by the activity of several hormonal systems. Puberty is also associated with maturation of certain brain functions that then affect the motivational and emotional profile of the young person. Brain changes specifically related to puberty underlie some of the psychological and behavioral traits that we associate with adolescence, including increased emotionality, a thirst for adventure and novelty, antisocial behavior, and increased conflict with parents.

Because puberty is a universal feature of the human condition, all teenagers can be expected to manifest to at least some degree the expected physical, motivational, and behavioral outcomes produced by hormonal and brain changes associated with puberty.

Developmental psychologists have also long noted that pubertal changes are likely to create secondary effects that, because they are the result of the universal process of puberty, can also be expected to be universal. The first of these effects concerns how young people undergoing puberty now view themselves. The assumption is that puberty inevitably requires a new self-definition in light of the dramatic physical and motivational changes that the adolescent is experiencing and that this identity revision must result in some amount of internal emotional upheaval. The equally inevitable fact that adolescents are now in a position to demand more power and more privileges can be predicted to create certain universal tensions between teenagers and their elders. With regard to the society at large, the senior generation is likely to resist surrendering its authority to the younger generation. Regardless of time or place, conflict between parents and adolescents can be expected to escalate as teenagers become less dependent on parents and increasingly capable of challenging parental authority.

Although the universal process of puberty may inevitably produce certain outcomes regardless of historical time or place, variations in the environmental context in which the adolescent lives can affect

how adolescence is played out. Such variations can increase or decrease the degree to which emotional upheaval and interpersonal tensions will characterize the adolescent experience.

Managing the Adolescent Identity Redefinition

Many societies historically have responded to the inevitable fact of puberty by instituting initiation ceremonies of some sort that publicly recognize the changing status of maturing youth. For boys such ceremonies may include public circumcision as well as hazing and other psychological and physical challenges. For girls such ceremonies are often associated with menarche, the onset of menstruation. Often a ceremonial rite culminates in an explicit ceremony conferring adult status on the initiate. Initiation ceremonies, then, represent a public recognition that the young person is maturing physically and can be expected to begin to engage in adult behaviors. As such, initiation ceremonies provide community support for the adolescent's attempts at redefinition of self and publicly confirm that the adolescent is becoming an adult. The upheaval associated with image redefinition in such societies is likely to be relatively mild.

Initiation ceremonies have become less common or have been stripped of much of their original meaning in contemporary cultures, especially in complex heterogeneous societies. When no public recognition of the fact and implications of puberty is given, adolescents are left to struggle through the adolescent identity shift on their own, with the result that the shift may be prolonged and difficult. It is probably not a coincidence that the view of adolescence as a period of storm and stress, as well as the concept of the identity crisis, originated in Western culture, which lacks meaningful initiation ceremonies. In Western culture ceremonies such as the bar mitzvah (the initiatory ceremony recognizing a boy as having reached the age of Jewish religious duty and responsibility) may still be practiced, but these ceremonies no longer guarantee that the young person will now be recognized as a man, the original culmination of the ceremony.

Range of Life Choices

The adolescent experience is also affected by the range of choices open to people who are facing adulthood and need to make decisions about the course that their lives will take. The wider the range of choices, the more difficult it can be to negotiate the task of taking on new roles, and the more the need to choose will be associated with upheaval. Theoretically, important choices that a young person might need to make upon reaching adulthood include whether or not to marry, whom to marry, whether to have children, what career path to follow, what political and religious beliefs to adopt, and where to live. In practice, any or all of these choices may be foreclosed to the person, either by circumstance or by cultural convention. Historically, because of limitations on the availability of potential spouses, absence of effective birth control technology, hardships associated with making a living, and cultural barriers foreclosing free choice of spouse, job, and the like, a young person typically had fewer choices to make regarding how his or her life would look. In contemporary heterogeneous, democratic, affluent societies, the choices that a young person can and indeed *must* make are numerous, the consequences of making such choices are momentous, and pressure to make a number of decisions about the future simultaneously is often present. Hence, the level of stress experienced during adolescence, and beyond, is expected to be higher in such societies. This difference in the constraints placed by custom and circumstance on individual life choices may explain why, until the close of the Middle Ages, the distinction between child and adult was minimized, not to mention the recognition of adolescence as a separate stage of life.

Continuities between Childhood and Adulthood

A society can either emphasize or de-emphasize the differences between childhood and adulthood in such areas as taking responsibility, participating in sexual activity, being exposed to death, and so



The thirst for adventure and novelty is one trait associated with adolescence. Young people at a fair in India enjoy riding and powering a Ferris wheel.
Photo by Klaus Klostermaier.

on. When a society emphasizes continuities, or in other words de-emphasizes differences, the transition from childhood to adulthood is more likely to be short and smooth. To the extent that expectations for and the practical experience of the adolescent are dramatically different from childhood to adulthood, the transition from the one stage to the other has the potential to be long and difficult. Historically, children were incorporated into adult life at an early age, and the same often holds true in contemporary traditional societies with a subsistence economy. Children in societies of this sort take on responsibility when they are quite young, in degrees consistent with their age and capabilities, and may be making concrete and important contributions to the welfare of their



families at a quite early age. Historically, children were exposed regularly to the facts of life, including sex and death, and this exposure is also the case in many traditional cultures around the world. In many cultures teenagers are already living a fully adult life. In 52 percent of a worldwide sample of fifty-eight cultures, boys are already married by nineteen years of age, and in 96 percent of sixty-nine cultures around the world, girls are married before they are twenty. With marriage come all of the responsibilities as well as the privileges of adulthood, and whatever adolescent transition that these young people have experienced is over.

Clarity of Expectations

Related to the range of choices open to the adolescent is the clarity with which expectations regarding the behavior of the adolescent are laid out by the older generation. In many societies stages in the life cycle are associated with age grades. Each age grade is composed of people of a specified age range. A given age grade is associated with a detailed set of responsibilities and prerogatives. Explicit procedures guarantee graduation from one age grade to the next. When age grades are present in a society, adolescents usually belong to their own age grade. This fact means that adolescents know what is expected of them. It also means that adolescents understand how and when the transition out of adolescence and into adulthood will happen.

Clarity of expectations, with regard to what the adolescent must and must not do and with regard to how and when adult status will be granted, makes for a smoother and less tumultuous adolescent experience. In societies with no such clarity of expectations, adolescents, left on their own to construct their own adolescence and make their own entry into adulthood, tend to have a more unsettled adolescent experience. Societies that leave adolescents to fend for themselves may have no choice, at least as regards some features of adolescents' life. For instance, where the range of choices open to adolescents is wide, and where a society is constantly changing over time, the older

generation cannot predict what adolescents need to know or do to prepare for adulthood. The trade-off for adolescent stress is opportunity in adulthood.

Historical Variations in the Timing of Puberty

The major physical and psychological changes associated with puberty occur during the second decade of human life regardless of historical time or place. But within these temporal boundaries, the environment in which a child is raised can affect the details of the onset and timing of puberty. Thus, since about the 1870s, the age of onset of puberty has been decreasing by approximately four months each decade in some western European nations. This trend also began to appear in other countries across the world in the mid-twentieth century. The decline in the age of onset of puberty through recent historical time, known as the "secular trend," has been accompanied by a more rapid pace of pubertal change. Age of menarche and attainment of adult status reflect this pattern. Thus, in urban populations, where the secular trend is most evident, menarche occurs on average at the age of twelve, whereas in Papua New Guinea, where the secular trend is not in evidence, menarche does not occur until a girl is eighteen years old. The secular trend affects growth patterns in a similar way. In the United States, where the age of onset of puberty has been decreasing steadily for decades, girls reach their adult height at an average of thirteen, whereas U.S. boys reach their adult height at an average of fifteen and a half. By contrast, among the Kikuyu people of eastern Africa, where puberty begins later, girls attain their adult height during their late teens on average and boys during their early twenties. Differences in the age of onset and duration of puberty coincide with differences in the standard of living of a population. In particular, decreases in a child's level of exposure to disease, increased quality of nutrition, and improved health of the mother during pregnancy seem to be causes of the secular trend.

The secular trend has important implications for the adolescent experience for a number of reasons.

At sixteen I was stupid, confused and indecisive. At twenty-five I was wise, self-confident, prepossessing and assertive. At forty-five, I am stupid, confused, insecure and indecisive. Who would have supposed that maturity is only a short break in adolescence? • **Jules Feiffer (b. 1929)**

Obviously earlier onset of puberty will mean earlier expression of the psychological and behavioral traits associated with adolescence. Less obviously, when onset of puberty is accelerated as rapidly as it is by the secular trend, a society's expectations about its young people may not be keeping up with biological reality. If young people who are physically, sexually, and psychologically precocious in comparison with the same age cohort of just a generation ago are treated as if they were children, both the young people and the society will experience disruptions.

The secular trend has another far-reaching effect on the adolescent and the community. Hormonal and brain changes associated with puberty account for some, but not all, of the maturation of a person during and after the teen years. Cognitive skills such as the ability to plan, to control impulses, and to appreciate the long-term consequences of one's actions also become more sophisticated with age but develop independently of the hormonal and brain changes associated with puberty per se. Thus, there is dissociation between the maturation of physiological and motivational changes common to puberty and the development of cognitive skills that allows for thoughtful, disciplined, forward-looking planning. Acceleration of puberty does not lead to earlier maturation of cognitive skills, which, therefore, lag further and further behind with the earlier and earlier onset and faster and faster rate of puberty. Before the secular trend, the tendency of sexually mature adolescents

to act on impulse, take risks, break rules, and seek novelty was more likely to be offset by an increasing capacity to think clearly about the meaning and consequences of their actions. With the appearance of the secular trend, adolescents are able and willing to behave in ways that can have harmful, even tragic, consequences but do not always have the cognitive resources to inhibit such behavior. Historically, we seem to be witnessing a growing disconnect between what actions adolescents want to take and can take and how adolescents reason about those actions.

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See also Childhood; Initiation and Rites of Passage

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Africa

Africa's contentious role in world history has varied with the perspectives of those writing it; the Eurocentric views place Africa in a minor, isolated role, while the Afrocentric view credits black civilization in Egypt with many cultural advances. African studies since the 1950s have provided new insight to the history of the continent, often stressing its interrelatedness to other continents and regions.

Africa has played a number of often contradictory roles in the writing of world history. Indeed, perhaps no single world region has played so contentious a role in the field. Africa has been derided by some scholars as irrelevant to world history. Conversely, others have argued that Africa lies at the very center of human history. The latter perspective is largely attributable to the widespread recognition in paleoanthropology that, based on archeological and anthropological evidence, such as fossil finds in the Awash Valley in Ethiopia, the human species originated in Africa and migrated from there to the rest of world. What could possibly account for such utterly incompatible perspectives? The answer to the question is itself historical. Over the past several hundred years, the history of Africa has been viewed through a variety of lenses, and these lenses have greatly influenced the way the history of Africa has been understood. Similarly, as the range of academic thinking has expanded and diversified in recent years, so have the number of lenses for understanding Africa. Rather than seeing the various contradictory notions of Africa as a failing of history, however, it might be more useful to look at the situation as instructive. By examining the great variety of ways in which Africa has been

understood in the past few hundred years, we gain a remarkable insight into not only the complex part of the world known as Africa, but also into the growth and development of the field of world history itself.

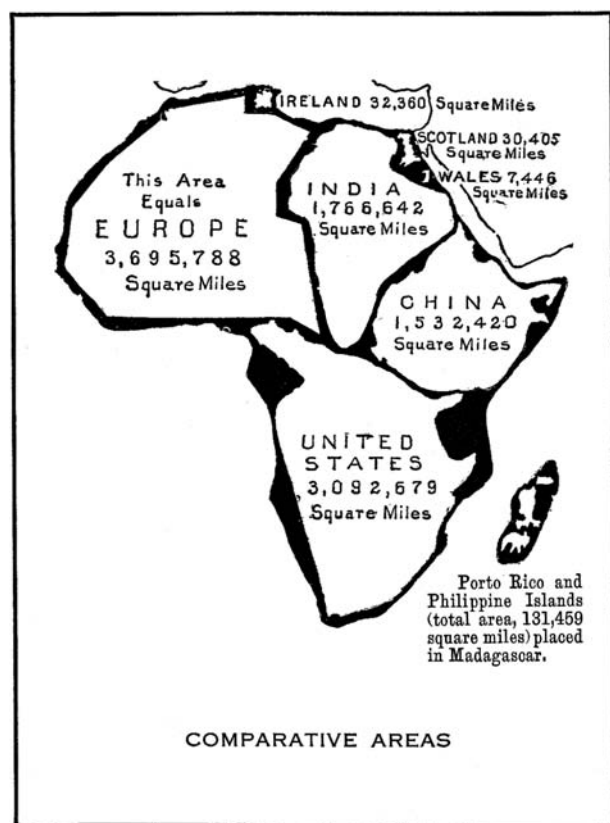
Origins of the Name Africa

The very origin of the name *Africa* is contentious. The most common scholarly explanation is that it comes from the Roman *Africa terra*, or “land of the *Afri*” in reference to a Berber-speaking society that once lived in what is now Tunisia. One alternative explanation is that it comes from the Latin *aprica* (sunny) or the Phoenician term *afar* (dust). An Arabic term, *Ifriqiya*, is often assumed to come from the Roman, though some argue that the Latin term came from the Arabic. There is also an Afrocentric argument that the term is actually ancient Egyptian in origin, from *Af-Rui-Ka*, meaning “place of beginnings.” Whatever the origins of the term, by the fifteenth century *Africa* was winning out against competing terms such as *Ethiopia* and *Libya* to become the common identifier for the continent. Looking at maps of Africa produced during the fifteenth through seventeenth centuries, *Africa* increasingly comes to dominate as the name of the continent. The controversy over the landmass's name foreshadows the deeper conflicts over its meaning and relevance in world history.

Early Conceptions of Africa

The field of history as we know it today is largely a Western creation. It should be no surprise, then, that the earliest attempts at writing histories of the world are themselves European. Particularly during

African nationalism is meaningless, dangerous, anachronistic, if it is not, at the same time, pan-Africanism. • **Julius K. Nyerere (1922–1999)**



This early-twentieth-century book illustration superimposes the “shapes” of four other regions on a map of Africa to demonstrate the continent’s vast area.

the Enlightenment, European philosopher-scholars were trying to make sense of a world that was to them very new. European voyages of exploration and colonial expansion had resulted in a great deluge of information about the wider world, and these early scholars struggled to pull the information together into a whole that explained the world as they were experiencing it. Thus, just as new cartographic skills were creating an increasingly detailed picture of physical Africa, these scholars sought to create an explanation of Africa’s place in world history.

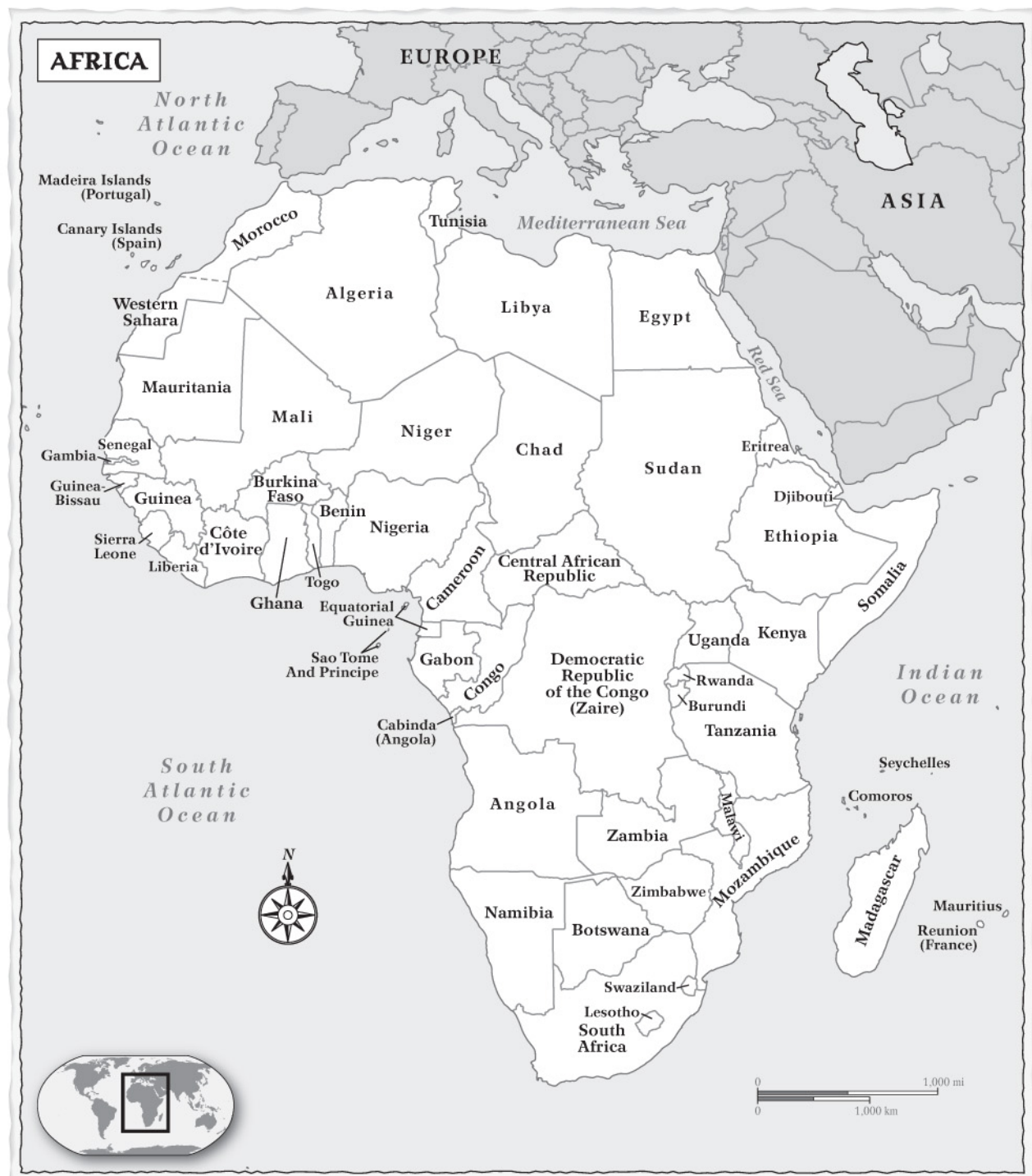
Notably, prior to the modern era, Africa was not seen as a terribly different part of the world. Given the long interaction among Europe, Africa, and the Middle East, all had previously been seen as part of a single world, as is evident from premodern maps. Indeed, trade, the Roman Empire, and then Christianity

had helped create a high degree of shared culture and identity in the circum-Mediterranean region, such that Africa was probably seen as more a part of the Roman Christian world than were many parts of northern and eastern Europe. This legacy survived even the collapse of Rome and the rise of Islam, for example in the myth of Prester John, a supposed Christian king sometimes placed in distant parts of Asia and sometimes in Africa. For a very long time, then, Europeans often saw Africans in terms of similarity and affinity, not difference. Early Islamic travelers and scholars, too, while initially seeing the Dar al-Sudan (land of the blacks) as a very different place, increasingly came to accept regions of it as part of the Dar al-Islam (land of peace).

Racial and Civilizational Views of Africa

In their efforts to place Africa in world history, most Enlightenment historians were deeply influenced by two issues. First, they tended to think of historical evidence only in terms of written documents. Thus, because they were either unable to translate (as in the case of ancient Egyptian, until the deciphering of the Rosetta Stone in the early nineteenth century) or unaware of written documents of African origin, these scholars decided that Africans were without history. Second, and perhaps more importantly, they were deeply influenced by growing notions of European racial superiority. Born of the achievements of the scientific revolution and the creation of a new plantation economy that demanded a brutal system of slave labor, most European scholars of the time embraced the notion that nonwhite peoples were intrinsically inferior. Witness the following excerpt from David Hume’s essay “Of National Characters” (1748):

I am apt to suspect the negroes and in general all other species of men to be naturally inferior to the whites. There never was a civilized nation of any other complexion than white, nor even any individual eminent either in action or speculation. No ingenious manufactures amongst them, no arts, no sciences.



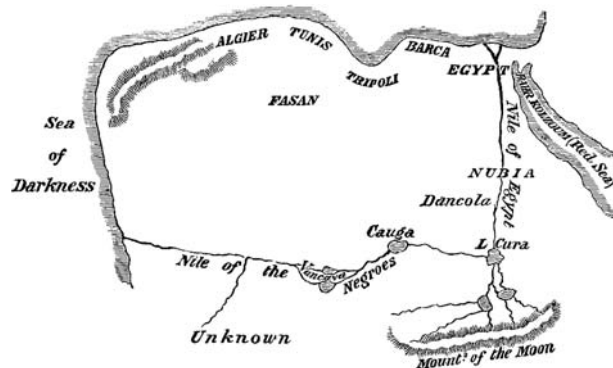
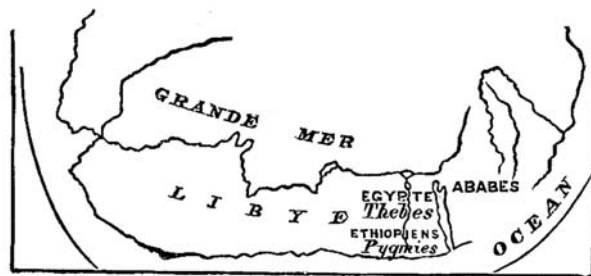


AFRICA IN HOMER'S WORLD.

This map and the ones to follow illustrate how European knowledge of Africa evolved from Homer's day to the sixteenth century.

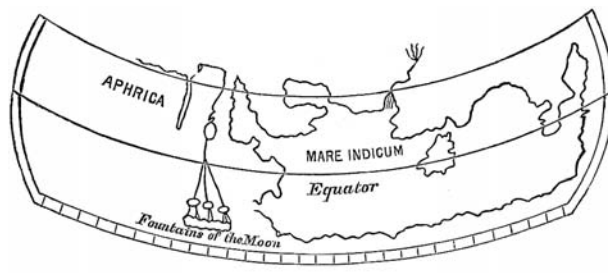
G. W. F. Hegel's "Geographical Basis of World History" (1820s) reflected similar themes. Hegel divided Africa up into three regions: North Africa, Egypt, and "Africa proper." Hegel describes the region thus:

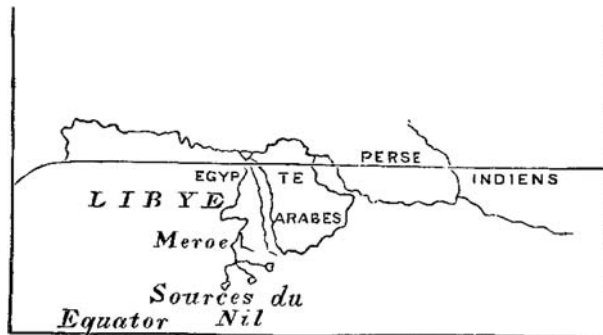
Africa proper is the characteristic part of the whole continent as such . . . It has no historical interest of its own, for we find its inhabitants living in barbarism and savagery in a land which has not furnished them with any integral ingredient of culture. From the earliest historical times, Africa has remained cut off from all contacts with the rest of the world; it is the land of gold, forever pressing in upon itself, and the land of childhood, removed from the light of self-conscious history and wrapped in the dark mantle of night.

CENTRAL AFRICA
according to
EDRISI. 1154 A.D.AFRICA IN MAP OF HEKATÆUS.
500 B.C.

Hegel's characterization of Africa in world history includes several key elements that continued to be used to define Africa (and Africans) in world history for more than a hundred years. First is the racial division of Africa. North Africa and Egypt, where people were "less black," were judged to possess history, while black Africans were devalued as uncivilized, living in barbarism, and devoid of culture. Second, "Africa proper" was described as being isolated from other parts of the world and thus peripheral to world history. Third, Africans were defined as childlike—not fully mature (as opposed to Europeans). Such a characterization was a critical element in the paternalistic justification of European authority, first in the context of slavery and later in the imposition of colonial rule.

During the course of the early twentieth century, a somewhat different twist on the racial model of world history became prominent, and this was the notion of civilizations. Historians of this era, such as H. G. Wells, Arnold Toynbee, and James Breasted, built their

MAP OF THE MARGARITA PHILOSOPHICA
A.D. 1503

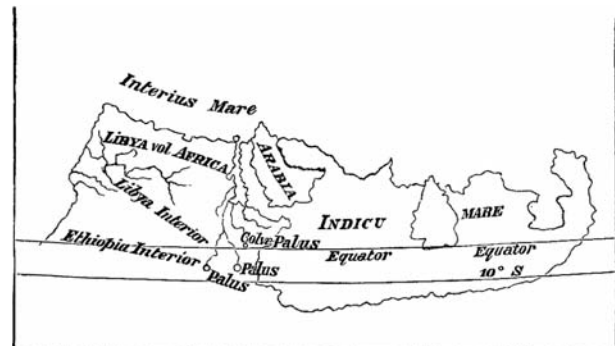


HIPPARCHUS.
100 B.C.

analysis and presentation of world history around the presumed racial and cultural continuity of certain civilizations. Not surprisingly, these scholars placed European civilization at the pinnacle of a human hierarchy, with other civilizations, such as Chinese or Persian, playing at best supporting roles. Like the Enlightenment historians before them, these scholars left Africa out of the picture, owing both to African's presumed uncivilized nature and the absence of historical documentation. In the 1937 edition of his *The Conquest of Civilization* Breasted (1937, 44–45) dismissed Africa as separated from the “Great White Race” by the Sahara and therefore uninfluenced by civilization:

On the south of the Northwest Quadrant lay the teeming black world of Africa, as it does today. It was separated from the white race by the broad stretch of the Sahara Desert. Sometimes the blacks of inner Africa did wander along [the Nile] into Egypt, but they only came in small groups. Thus cut off by the desert barrier and living by themselves, they remained uninfluenced by civilization by the north, nor did they contribute appreciably to this civilization.

Thus the civilizational model did not so much displace race as a means of defining world history as incorporate it into a larger framework. Race and civilization came to mean much the same thing, and, as before, Africa and Africans played a role in world history only as the uncivilized foil to Europe's achievement and sophistication.



PTOLEMY'S MAP. A.D. 150.

Early Twentieth-Century Black Scholarship

The twentieth century, however, witnessed a number of challenges to the concepts of whiteness and civilization that had been constructed by earlier world historians. The first of these challenges came from a group of African-American scholars that included such pioneers as Carter G. Woodson and W. E. B. Du Bois. Both held PhDs from Harvard University and published extensively on black history. Woodson, for example, helped found the *Journal of Negro History*. Du Bois, one of the most prolific writers of the age, directly challenged the notion of Western cultural primacy with such essays as “What is Civilization” (1926). Both scholars did much to undermine the notion that Africans were without history.

Also of early significance was the Senegalese scientist and historian Cheikh Anta Diop, whose doctoral dissertation at the Sorbonne created a sensation in the 1950s by arguing that the ancient Egyptians had been black, rather than white. Diop's work became a foundational element of the Afrocentric perspective on Africa, which argues that there was a coherent black civilization that had its roots in ancient Egypt. Afrocentrism has increasingly come to represent a counterpoint to Eurocentrism. Indeed, other Afrocentric scholars, such as George James, have even carried the argument further, making the case in *Stolen Legacy* (1954) that ancient Greek culture, rather than being a local innovation, was stolen from Egyptian culture. The argument over the relationship (or lack



JOHN RUYSCH
AD. 1508.

thereof) between Greece and Egypt continues to be a contentious one to this day. Witness, for example, the extensive debate between Martin Bernal (author of *Black Athena*) and Mary Lefkowitz (author of *Not Out of Africa: How Afrocentrism Became an Excuse to Teach Myth as History*). Notably, while the Afrocentric perspective has helped to undermine notions of white superiority, it has not made a break with, but rather has embraced, an overtly racial notion of historical analysis. Indeed, more extreme exponents of Afrocentrism have argued that only those of African descent can truly understand, and hence study, African history. In the world of scholars who increasingly sees race as a social construct, such essentialist frameworks have become less and less popular.

The Rise of Area Studies

In the 1950s, the rise of area studies programs helped to further undermine the old Eurocentric models of world history. In the United States, the creation of a number of government-subsidized African studies programs provided an institutional foundation for a systematic study of African history. During the 1950s and 1960s a new generation of Africanists in Africa, the United States, and Europe helped develop an interdisciplinary historical



SYLVANNUS' MAP
A.D. 1511

methodology that embraced not only written documents, but also oral histories, linguistics, and archaeology as a means of reconstructing the African past. Over the decades since, the results of this research have established a rich and varied historiography. Such a body of historical knowledge could not be ignored by world historians, and as a result world history texts could no longer discount Africa as being without history.

But the area studies model was not without its drawbacks. In particular, the organization of different parts of the world into apparently coherent areas (largely based upon continental divisions) ascribed a meaning to units no more precise than the older concepts of race or civilization. Notably, world history textbooks followed the new structure of the field by basing their chapter organization on area studies frameworks, leading to a “meanwhile, in Africa” approach to the continent. Such a framework did little to undermine the old notion of an isolated Africa or of the idea of culturally coherent civilizations that had previously been advocated by



**HIERONIMUS DE VERRAZANO
1529**



**SEBASTIAN CABOT'S MAP OF THE WORLD
16th Century**

the likes of Hegel and Breasted, or even Diop. The 1980s and 1990s saw a challenge to these notions via the rise of concepts such as zones of interaction, which stressed the connections between regions rather than the difference between them. Regions such as “the Atlantic world” or “the Indian Ocean world” replaced continents as units of analysis. As Patrick Manning, one of a growing group of Africanists who have greatly influenced world history in recent years, argued in his 2003 work *Navigating World History*, it is the connections that make world history, not the separations.

Because these new regional units of analysis build on zones of interaction rather than on continents or civilizations, they threaten to deconstruct the very area studies frameworks that have done so much to further the history of Africa and other previously neglected regions of the world. The point here is that the changing “concepts” of Africa highlight that the concept of Africa itself is a construction, no less than that of race or civilization. The meaning of Africa, thus, has held different things for different audiences over time. Some based more in historical fact, and others based more in cultural and political agendas, perhaps, but all very real in terms of the impact on their audience’s conceptions of world history. The changing notions of

Africa highlight the fact that our understanding of both Africa and the world has been both interrelated and constantly changing for the past several hundred years. Indeed, it is rather difficult to understand the one without the other.

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See also Africa—Colonial; Africa—Equatorial and Southern (4000 BCE–100 CE); Africa—Postcolonial; African Religions; African American and Caribbean Religions; African Union; Afro-Eurasia; Aksum; Apartheid; Art—Africa; Benin; Egypt; Hausa States; Kanem-Bornu; Kenyatta, Jomo; Kongo; Mali; Mansa Musa; Mehmed II; Meroë; Nkrumah, Kwame; Nubians; Pan-Africanism; Pastoral Nomadic Societies; Senghor, Léopold; Shaka Zulu; Slave Trades; Sokoto Caliphate; Songhai; Trading Patterns, Trans-Saharan; Tutu, Desmond; Wagadu Empire; Warfare—Africa; Zimbabwe, Great

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Africa—Colonial

When technological advances made Africa's interior readily accessible in the late nineteenth century, the nations of Europe raced to colonize the continent. Colonial administrations enticed or coerced Africans into producing goods for export, until native conscripts brought home the concept of "freedom" from World War II. The late twentieth century saw the end of colonial rule in Africa, yet its effects remain.

The colonial era in African history was relatively brief, but it was decisive in shaping Africa's relationship with the twentieth-century world. The legacies of colonialism are still felt broadly and deeply across the continent.

Creating a Colonial Order, 1880 to 1914

Until late in the nineteenth century, almost all European interaction with Africa took place along the coasts. An exception to this was the area around the Dutch settlement of Cape Town, where a frontier of European settlements developed in the late seventeenth century. By the late nineteenth century it was an array of technologies that made European conquest possible: medical technologies (such as the discovery of quinine as a prophylactic against malaria), transportation technologies (such as steamships and railroads to penetrate the interior), and military technologies (such as the rapid-repeating Maxim gun).

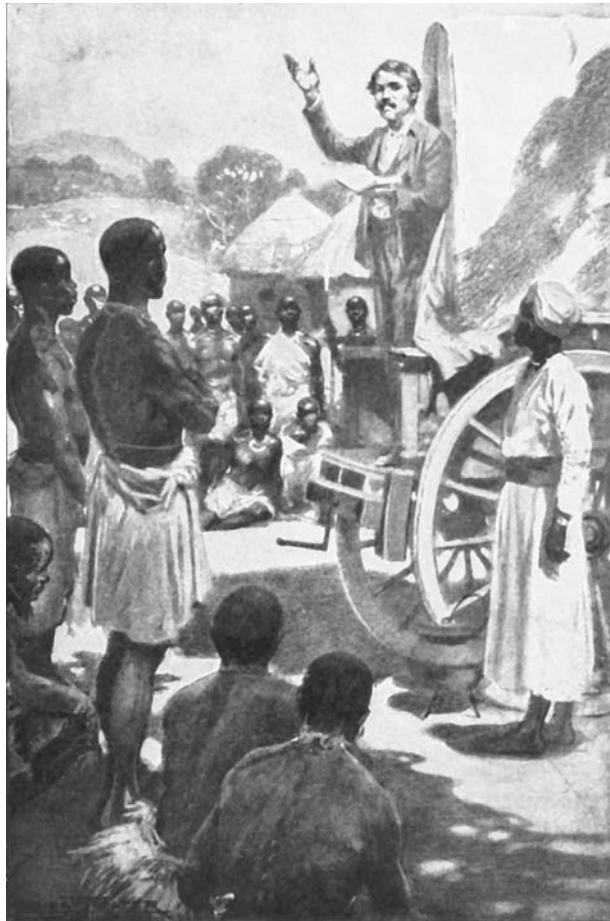
Several factors drove the European scramble for Africa. In the industrial era, competition for the resources of the tropical world, such as rubber and cotton, intensified. The rise of the powerful new German

state added a political and strategic dimension: the British now had to work to defend the global trade dominance they had earlier taken for granted, and the French sought new territories in Africa partially as compensation for their losses in European wars. New nations like Italy and Germany pursued empire as a form of national self-assertion. Christian missionaries were another constituency promoting empire, explaining it as a means of bringing "civilization" to what Europeans came to regard as a "dark continent." Similar factors were at play in other world regions that had heretofore escaped European colonization, such as Southeast Asia and the Pacific Islands.

Alarmed by the aggressive imperialism of King Leopold II of Belgium, other European nations sent delegates to the Berlin Conference in 1884 to create ground rules for their "effective occupation" of African lands. Leopold's huge fiefdom in Central Africa, the "Kongo Free State," was a brutal military-economic empire. As many as 10 million Africans died as the region's rubber was plundered to feed industrial and consumer markets in the West.

African responses to the challenge of European imperialism were complex, conditioned by the rapidity with which the colonialist enterprise unfolded. Diplomacy was a common approach. Particular rulers and societies might benefit from allying themselves with the Europeans, as did the kings of Buganda, north of Lake Victoria, who expanded their territory at the expense of traditional rivals by allying themselves with the British. But the Europeans were organized on a scale that African states could not match, and one by one African societies lost their sovereignty.

African wars of resistance to colonial occupation were common in the period from 1890 to 1910, but



In this drawing the Scottish explorer and Protestant missionary David Livingstone preaches to potential African converts. Livingstone's mid-nineteenth-century expeditions filled huge gaps in Western knowledge of central and southern Africa.

successful only in Ethiopia. King Menelik II (1844–1913) built a professional standing army, equipped it with the latest rifles, and played European powers off one another. Victory over the Italians in 1896 allowed Ethiopia to retain its status as an indigenous kingdom. But like independent Siam (Thailand) in Southeast Asia, it was but a modest exception to the rule of direct imperial control being imposed by Europe. For Africa as a whole, the period from the Berlin Conference (1894) through World War I (1914–1918) was a period of instability, violence, and population loss.

Colonial Political Economy, 1914 to 1940

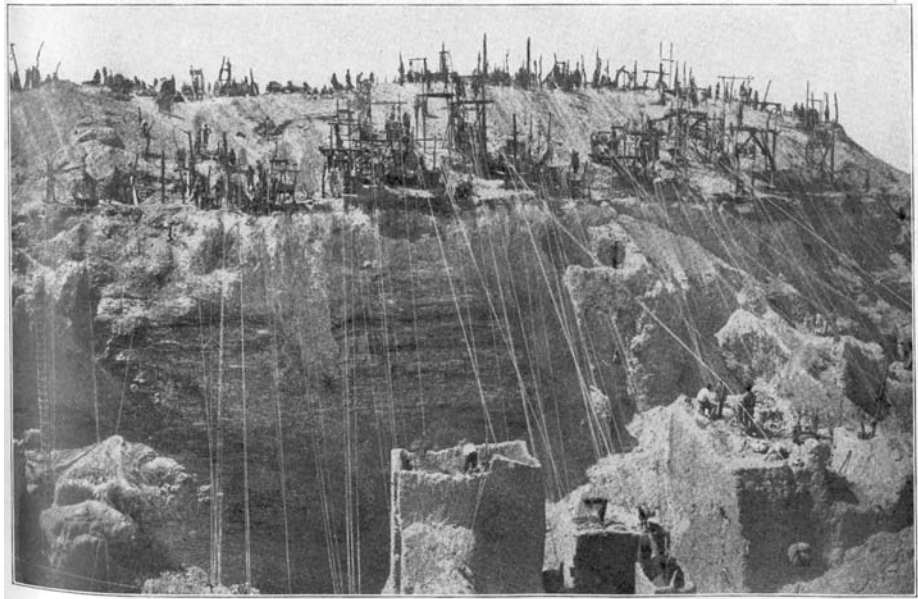
During the period from 1914 to 1940, the European powers devised a number of strategies to allow them to govern colonies and benefit from them economically. The British grafted the colonial state onto existing African institutions through a system known as “indirect rule.” Traditional “chiefs” of African “tribes” administered “customary law” under the guidance of British officials. Meanwhile the French cultivated an elite of Africans who associated themselves with French values. As in Vietnam, these *indigènes évolués* (evolved natives) could even aspire to French citizenship. However, for most Africans such opportunities meant nothing, and forced labor and authoritarian colonial directives were the norm.

Belgian administration was even more paternalistic than the others, with the Catholic Church and mining companies leaving little room for African participation in state institutions. Portugal, a poor country with few resources to invest, did even less to prepare Africans for participation in a modern state. A crucial distinction was whether the Europeans came to settle. In French Algeria, Portuguese Angola, British Kenya and Rhodesia, and in South Africa, it was the settler factor that dominated all other aspects of political and economic life. Here Africans were dominated by aggressive European immigrants who came not just to govern them, but to take their land.

Settler-dominated farming in these regions was one form of what the economic historian Ralph Austen has called “regimes of competitive exploitation.” To provide labor for settler farms, mining enterprises, and commercial plantations, Africans were often restricted to crowded “native reserves” (to use the South African term) where, unable to meet demands for tax payments to the state, they were forced into a cycle of migrant labor. With the loss of labor and the overuse of inadequate land in the reserves, African agricultural productivity declined. Women were usually left to shoulder the burdens of rural poverty.

The second economic pattern identified by Austen is the *peasant-étatiste* regime. Here basic factors of

Colonial rulers of Africa sought to gain wealth from mining minerals. This photo shows a De Beers diamond mine in South Africa in the late nineteenth century.



production—land, labor, and cattle—remained in African hands. But peasant life was greatly altered by the mandate to produce goods for the global economy: colonial taxes had to be paid in cash, and that meant growing commercial crops. In some cases African initiative was evident, as in the Gold Coast (today's Ghana), where African farmers responded to market incentives by making the colony the world's largest producer of cocoa. In many cases, however, market incentives were so weak that colonial officials used coercion to force African production. Such was the case with cotton, which apart from bringing little revenue to African farmers required significant labor and exhausted the soil. Forced cotton growing was the cause of several revolts against European authority.

Colonial economics led to regional differentiation. The transportation infrastructure, geared toward the export of raw materials and the importation of manufactured goods, concentrated investment and development in certain areas while draining labor from others. In West Africa, the coastal regions were developed at the expense of the more arid savannas of the interior. In South Africa, the “white” areas of the country—the settler farming regions and the increasingly industrial

cities and mine compounds—were developed at the expense of “native reserves.”

Africa and the Twentieth Century, 1914 to 1994

While colonial Africa had distinctive traits, it is best understood in the context of twentieth-century world history. During World War I (1914–1918) the Europeans mobilized the human and natural resources of their empires. While Indian soldiers fought for Britain in its fight with Germany's Ottoman allies, the famous Senegalese Sharpshooters, young men from West African villages, served in the trenches of Europe. East and Southwest Africa were theaters of war as the Germans defended their colonies from British and South African attack. Most of the soldiers were African, with European officers in command. Great civilian suffering resulted from forced conscription and the spread of disease and hunger that accompanied the fighting.

Representatives of Africa's fledgling nationalist movements went to Paris in 1919, but like their Asian colleagues their voices were ignored by the great powers. The war had set in motion a process that



would undercut the viability of European colonial empires—for example, by forcing the British to cash in many of their global financial assets to finance their struggle with Germany. Rather than recognizing and acting on that historical shift, however, the British and French augmented their existing empires through the “mandate system,” which reallocated former German colonies (and Ottoman provinces) to the victorious allies.

In the 1920s, colonial administrative and economic systems developed in a context of rising prices on world commodity markets. Soaring African production of coffee and cocoa led to increased tax revenues. But the Great Depression brought an end to that period of relative prosperity. Commodity prices plunged, with no significant recovery until the 1950s. A logical peasant response was to return to subsistence production, but that was not be allowed by colonial states dependent on cash crop production for their revenues, and state coercion in African agriculture increased. Colonial taxation had enmeshed African producers in the cash nexus of the global market.

World War II (1939–1945) also had profound implications for Africa. The British mobilized large numbers of African conscripts; many Kenyan and Nigerian soldiers saw action in Burma (defending British India from Japanese assault) while white South African soldiers fought to liberate Ethiopia from the Italians who had occupied the African kingdom in 1935. North Africa was a major theater of war. Most French colonial governors, in Africa as in Southeast Asia, allied themselves with the collaborationist Vichy regime. But the governor of French Equatorial Africa, Félix Éboué (1884–1944), a descendent of slaves from French Guiana, declared his support for the Free French forces, making the city of Brazzaville an important center of French resistance to fascism.

The war was a watershed in African history. Returning soldiers brought greater knowledge of the world back to Africa’s towns and villages. Allied wartime propaganda had asked Africans to sacrifice in the interests of “freedom,” a term that now fully entered the vocabulary of African politics. Before the war only a tiny elite of Western-educated Africans

had imagined the possibility of self-governing or independent African states. Now there was a much wider social constituency for that idea, especially among young Africans who were anxious to escape the confines of colonialism and play a larger role in the world.

Leaders such as Kwame Nkrumah of Ghana, Léopold Senghor of Senegal, and Jomo Kenyatta of Kenya returned to Africa from sojourns to Europe and the United States to lead new movements of mass nationalism. In doing so, they were following the example of nationalists in India, which had gained full independence from Britain in 1947. Conflict and occasional violence marked the independence struggle in most colonies, but independence was frequently achieved through peaceful negotiation. Such was the case in the Gold Coast. In 1957 Kwame Nkrumah became its prime minister, changed the name of the country to Ghana, and set a precedent for the continent as a whole.

In settler colonies, however, colonialism could not be overthrown without significant violence. In Kenya the settlers refused to compromise with Jomo Kenyatta’s Kenya African National Union. The ensuing Mau Mau Revolt (1954–1960) led to thousands of deaths, mostly African, before independence was achieved in 1964. The violence was even greater in Algeria, where independence from France followed a bitter eight-year war (1954–1962) and cost a million lives.

The Cold War (1945–1991) often played a major role in regions where violence accompanied decolonization. The Kongo became a Cold War battlefield as independence led to civil war, with the United States successfully backing an authoritarian, anticommunist dictator named Mobutu Sese Seko. Portugal refused to give up its colonies without a fight, and its NATO-backed government fought a long war with Soviet-supported insurgents before the independence of Angola and Mozambique in 1974. Similarly, Marxist guerrillas fought the white settler regime in Rhodesia, finally securing majority rule in 1980 and renaming their country Zimbabwe.

In South Africa, the struggle was even more prolonged. Even after the fight against German fascism

had discredited racism as a political ideology, white South African voters supported the creation of an apartheid state after 1948. Under the leadership of Nelson Mandela, the African National Congress used nonviolent civil disobedience to oppose apartheid, but the response was increased repression. In 1964, Mandela and his colleagues were sentenced to life in prison after they turned to sabotage as a means of resistance. In a Cold War context, the United States and Great Britain were reluctant to put too much pressure on the apartheid regime, given the significant Western investment in South Africa's profitable mining and industrial sectors and the strongly anti-communist stance of its leaders. But major uprisings throughout the late 1970s and 1980s, in which African students played a major role, kept pressure on the regime. In 1994 Nelson Mandela became the first president of a democratic South Africa. The colonial era in African history was finally at an end.

The Legacies of Colonialism

Political geography is perhaps the most obvious legacy of colonialism. With a map created by Europeans for their own purposes, Africans have struggled to create viable nations within the borders bequeathed to them. The problem of creating strong nation-states has been compounded by other political legacies of colonialism. Ethnic politics is one example. As elsewhere in the world, when mass politics developed in Africa there was a tendency for ethnic and/or religious identifications to be heightened. The development of such ethnic identities was often encouraged by colonial powers as part of a divide-and-rule strategy. Since such identities rarely corresponded with national boundaries, ethnic subnationalism became a major challenge to national cohesion in new African states. The legacy of authoritarian rule inherited from colonialism, with weak structures of civil society to counterbalance state power, has also had unfortunate effects across the continent.

The economic legacies of colonialism have been equally problematic. The inherited transportation infrastructure, geared toward the export of agricultural

goods and raw materials, has made it difficult to integrate African economies within and between nations. Even while Africa's manufacturing sector has grown, problems of economic underdevelopment remain. Africans still often produce what they do not consume, and consume what they do not produce, remaining dependent on the vagaries of international commodity prices.

Africans have had difficulty making positive use of the political and economic legacies of colonialism. But the same is not true in cultural and intellectual life, where African encounters with global cultural influences over the past century have been remarkably fruitful. In music and in the visual arts, for example, Africans have absorbed European and other cultural influences without sacrificing a distinctly African aesthetic. Similarly, as Africans have accepted new religions, most notably Christianity and Islam, they have infused them with beliefs and practices rooted in their own cultural traditions. It is in these cultural, intellectual, and spiritual domains that hope resides for the African continent to surmount the challenges remaining from the colonial period.

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See also Africa—Postcolonial; Apartheid; Nkrumah, Kwame; Pan-Africanism; Senghor, Léopold

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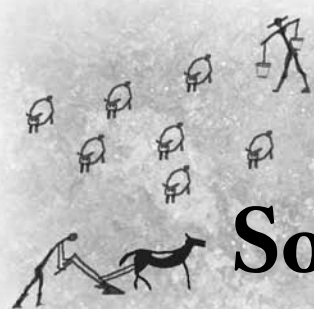
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Africa—Equatorial and Southern (4000 BCE–1100 CE)

The growth of the equatorial and southern portion of Africa, once referred to as the Bantu expansion, began about 4000 BCE with the adoption of an agricultural way of life in West Africa. The eventual development of states and towns, as well as cultural, technological, and economic changes, progressed for thousands of years and still continues today.

During the more than five thousand years from 4000 BCE to the beginning of the second century in the second millennium CE, sweeping transformations of economy, technology, culture, and society took shape stage by stage across the equatorial and southern regions of Africa. Historians of Africa used to treat this immensely complex history as if it were a single development, which they called the Bantu expansion, and that expression lingers on in some books. There is an element of truth in this designation: a major accompanying feature of this long history was the widening establishment of Bantu languages across the greater part of nearly half of Africa.

But the driving forces of change in that long sweep of time were a succession of transformations in lifeways—the shift from hunting and gathering pursuits to agriculture, the adoption of new technologies, the rise of specialized production for the market, and the eventual emergence, although not everywhere, of states and towns. The initial impetus for these transformations came from West Africa. Between 8000 and 5000 BCE, peoples speaking languages of the Niger-Kongo family, had independently developed a savanna-based agriculture, originally raising grain crops, black-eyed peas, African groundnuts (*Vignasubterranea*), and bottle

gourds. Even earlier, in the tenth millennium, their ancestors had invented the first ceramics in world history. By the fifth millennium BCE, they supplemented cultivation with the tending of guinea fowl and goats. The addition of yams and oil palms to this system during the same era allowed Niger-Kongo peoples for the first time to spread from the savannas into the West African rainforests of the coastal hinterland.

Early Agricultural Spread—Equatorial Rain Forests

The first spread of West African planting agriculture into equatorial Africa came about in the fourth millennium BCE. Two Niger-Kongo communities from west central Cameroon initiated this era of change. Coastal Bantu people settled along the Atlantic littoral near the mouth of the Ogowe River, where their descendants still live today. The second group, the ancestral Nyong-Lomami Bantu, filtered at first into the areas around the Nyong and lower Sanaga rivers in modern-day Cameroon. With the one exception of the Coastal Bantu of the lower Ogowe River areas, all the far-flung Bantu languages of later times descend from the ancestral Nyong-Lomami tongue. Both groups brought with them an economy that combined fishing and hunting with the cultivation of yams, oil palms, black-eyed peas, African groundnuts, and gourds and the raising of goats and guinea fowl. They introduced the first pottery to the region, along with the technologies of boat building and polished-stone tool making.

Their settlements brought them into contact with the diverse Batwa hunter-gatherer societies, whose

ancestors had inhabited the rain forest zones for thousands of years. (The Batwa are often called by the pejorative term *Pygmies*). The Batwa entered into trade relations with the newcomers, bartering surplus products from their forest hunting and gathering, such as honey and ivory, for the pottery and polished stone axes of the Bantu-speaking communities.

The Bantu-speaking farmers and fishers introduced a new kind of settlement and a new type of social structure to the rain forest regions. In contrast to the mobile bands of the Batwa, the Bantu communities resided in sedentary villages. Each village was the establishment of a particular clan or a particular lineage within a clan, although people of other lineages or clans might also reside in the village. Throughout the period down to early first millennium CE, hereditary lineage chiefs acted as the ritual leaders of these small independent communities. The Batwa, in contradistinction, recognized neither chiefs nor clans and lineages.

The Spread Follows Rivers

A second stage of agricultural expansion in the equatorial rain forest began in the early and middle centuries of the third millennium. Between 2800 and 2400 BCE, the Nyong-Lomami communities spread southeastward, following the major rivers deep into the rain forest zone. By the twenty-fifth century BCE their descendants had formed a long string of communities extending for hundreds of kilometers along the Sangha and Middle Kongo Rivers. Around 2500 BCE, even before this second period ended, a new direction of agricultural spread commenced among Nyong-Lomami people living around the confluence of the Sangha and Kongo Rivers. From these areas Nyong-Lomami communities spread south down the Lower Kongo River as far as the southern edges of the rain forest zone.

Finally, between 2100 and 1200 BCE, there ensued a fourth period of new settlements in the forest. The historian Kairn Klieman has described it as an era of filling in, because in this period Nyong-Lomami



Although the Map of Beatus (776 CE) shows the world south of North Africa as uninhabitable, the region had been home to humans for some 200,000 years.

peoples moved with their economy and technology into many of the areas that lay between the major rivers. One offshoot of the Nyong-Lomami, the Savanna Bantu, spread out along the southern fringes of the rain forest. Other communities settled in the far western equatorial region between the Kongo River and the Atlantic coast, and still others spread into the farther northern and eastern parts of the equatorial rain forest.

Batwa Relations with Their Bantu Neighbors

The third and fourth periods of settlement brought more and more of the Batwa into direct contact with the Bantu farming-fishing communities. Nevertheless, major areas of rain forest remained occupied solely by Batwa, and most if not all Batwa still pursued a fully hunting and gathering way of life. Their material relations with Bantu communities continued to revolve around the trading of the occasional surplus products of their subsistence pursuits.

Most interestingly of all, this coexistence of two differing life ways had a potent religious dimension. The Niger-Kongo religion of early Bantu-speaking

communities recognized three levels of spiritual power: a single Creator God of all things; territorial spirits, with powers limited to particular locales; and on the communal level, the ancestor spirits of each particular community. Most important to the Bantu were the ancestor spirits. The burial of the ancestors on one's land and the veneration and giving of offerings to them secured one's right to that land. As the farmers and fishers spread into new areas, where their ancestors had not lived, their own beliefs required them to seek accommodation with the Batwa. The Batwa, according to the Bantu view of things, were the first owners of the land. It was the Batwa whose ancestors had lived there, and it was they who knew how to deal with the spirits of the land. As a result the Batwa often came to play key roles in the rituals of the Bantu-speaking villagers. The villagers reinterpreted the Batwa spirits of the forest as territorial spirits, and in their origin myths they credited the Batwa with being the bringers of crucial environmental and technological knowledge.

Changes in the Equatorial Rain Forests

Late in the second millennium BCE a new kind of development, large villages, began to appear in several areas of the equatorial rain forest. Apparently, as Bantu farming populations grew, they began to rely to a growing extent on agriculture and less on hunting and fishing to feed themselves. As that happened, the small villages and hamlets of the first four periods of Bantu settlement in the rain forest grew, here and there, into villages with hundreds of people, often divided up into several different lineages and wards.

Between 1000 and 500 BCE even more fundamental changes in economy began to take shape across equatorial Africa. A central element in these changes appears to have been the spread of ironworking technology. Because iron ore deposits were unevenly spread, the adoption of ironworking led directly to a new kind of trade over long distances in the rain forest regions. Communities without iron resources turned to the specialized production of other kinds

of goods in order to join in the new commercial relations. Many communities located right along the great rivers became fishing specialists, catching and drying fish for the market. In areas where the raffia palm grew well, local inhabitants began to weave raffia cloth not just for their own needs but to supply a growing market for fine cloth. The increased quantity and variety of goods, moving over long distances along the rivers, in turn created a demand for much larger boats. During the past thousand years communities in the hinterland of the rivers supplied this demand by becoming specialists in building long canoes from the great forest trees and selling these boats to the traders along the rivers, and this pattern is likely to have held true in the first millennium BCE as well.

Not least, the Batwa in many areas transformed their relationships with Bantu-speaking communities by themselves becoming specialist producers of forest products, including, among other goods, ivory, monkey and leopard skins, and honey and beeswax. Often, as a result, Batwa communities no longer fully supplied their own food needs, but instead supplemented their diet by trading for foods grown by the farmers. This kind of economic relationship enhanced the Batwa ability to participate in the new economy. At the same time, it also caused their fortunes to become much more closely intertwined with those of their farming and fishing neighbors.

Woodland Savannas and the Western Rift

Along the east and south of the equatorial rain forest, rather different trends of historical change predominated among Bantu peoples between 1200 BCE and 500 CE. Over the first eight centuries of this era two new fronts of population expansion and agricultural transformation opened up. All along the southern margins of the rain forest, a variety of peoples speaking Western Savanna and Central Savanna Bantu languages established themselves in the characteristic woodland savanna environments found there. These regions had somewhat lower yearly rainfall than the

rain forest, but still enough rain to support extensive tree cover. The environment suited the raising of yams, the old staple of the early Bantu farmers, and the many perennial streams and rivers allowed for extensive fishing.

The second front of advance lay at the eastern edge of the Kongo Basin, along Africa's great Western Rift. The Western Rift is a 1500-kilometer-long string of deep valleys, large lakes, and old volcanic mountain ranges separating the vast Kongo Basin from the savannahs of eastern Africa. The great variations of terrain and altitude create a mosaic of diverse environments in the Western Rift: grasslands in the bottomlands of the valleys, high-rainfall forests on the lower and middle mountain slopes, and savanna and dry woodlands, especially extending eastward from the rift. The Mashariki Bantu, the easternmost of the Savanna Bantu groups, arrived in this region around the end of the second millennium BCE. They spread at first into the highland forests, where high rainfall supported their accustomed ways of farming and fishing. Over the centuries from around 1000 to 400 BCE the Mashariki expanded north and south along the Western Rift, diverging into two large clusters of communities—the Kaskazi in and around modern Rwanda, and the Kusi farther south in areas not yet satisfactorily identified, but probably centered along the western side of Lake Tanganyika.

The Western and Central Savanna Bantu of these centuries continued the older pattern of their Nyong-Lomami ancestors—they spread the agricultural frontier into regions previous entirely inhabited by hunter-gatherers. The Kusi and the Kaskazi, in contrast, faced a very different challenge between 1000 and 400 BCE. In the mountain forests where they first settled, the previous inhabitants were Batwa food collectors similar in culture and economy to the Batwa of the Kongo Basin. But in the grasslands and savannas of the northern parts of the Western Rift, other, very different agricultural societies, whose crops and animals prospered in drier environments, preceded the Bantu. These peoples were heirs of the Sudanic agricultural tradition, the historical roots of which extend back to the southern and eastern Sahara of

the ninth millennium BCE. Speaking languages of the Nilo-Saharan and Afrasian language families, they raised the African grains sorghum, pearl millet, and finger millet as their staples, and they herded goats and sheep and, in favorable areas, cattle.

In this encounter of diverse cultural and economic worlds, the Kaskazi and the Kusi were the ones who made the crucial adaptations. As they gradually cleared more forest for their fields, they created more areas in which grain crops could be grown. The benefits of this opening for new agricultural practices tended to flow in one direction: finger millet and sorghum could be readapted to wetter conditions, once forest land was cleared. But yams, the crucial crops of the early Kaskazi and Kusi, required more rainfall than the drier savannas provided. So while the Kaskazi and Kusi were able over time to fit sorghum, finger millet, and other Sudanic crops into their agriculture, most of their Nilo-Saharan and Afrasian neighbors maintained their earlier practices with little change.

By the second half of the first millennium BCE, the Kaskazi and Kusi had evolved a new agricultural synthesis. It is clear that they still favored yams as their staple food, but their overall repertory encompassed a wide range of crops, some suited to wet environments and others to relatively dry climates; a varied kit of cultivating tools; and new techniques of field management. They had adopted the fire-hardened digging stick used by the Nilo-Saharan farmers in grain cultivation. The middle of the first millennium BCE was also the period of the invention of iron hoes, which made tilling the fields before planting much more efficient and made it much easier to harvest root crops such as the yam. Some of the Nilo-Saharans also became hoe cultivators, but not to the same extent as the Bantu communities.

Ironworking technology in the Western Rift dates as early as 1000 BCE, and it was from there that this new technology diffused westward to many Bantu of the equatorial rain forest. Nilo-Saharan peoples living along the Nile-Kongo watershed were the earliest iron users in this part of Africa. Kaskazi people learned ironworking from them by around the ninth

and eighth centuries BCE, and the Kusi peoples farther south began to take up the technology after 500 BCE. The earliest iron items were most likely ornaments and small points and blades. Smiths began to forge larger blades for hoes, axes, adzes, and spears probably only from around 500 BCE onward.

Agricultural and Technological Change

The new developments in agricultural technology and production set off a new era of the expansion of Kaskazi and Kusi communities into an entirely new range of environments. From the fourth to the first century BCE, one group of Kaskazi peoples, whom historians call the Great Lakes Bantu, scattered out eastward from the Western Rift into several areas around Lake Victoria. Several different Kaskazi communities relocated to the well-watered woodland savannas and tablelands of far southern Tanzania. Other Kaskazi groups, who switched over entirely to cattle raising and grain cultivation, moved even farther south, to the dry open savannas of east central Zambia. Late in the period still other Kaskazi communities leapfrogged the dry central regions of East Africa and took up lands far to the east, in the better watered areas along the East African coast and around the mountains of northeastern Tanzania. During the same era the Kusi peoples moved into the areas surrounding Lake Malawi. In northern Tanzania and in the Great Lakes region, the incoming Bantu initially settled in environmental islands of wetter climate, with Nilo-Saharan and Afrasan neighbors in the nearby grasslands and drier savannas. In southern Tanzania, Malawi, and Zambia, however, both Kaskazi and Kusi peoples expanded the agricultural frontier into areas previously occupied only by hunter-gatherers.

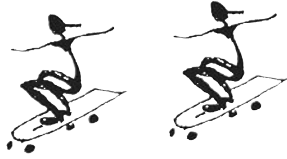
Between 100 BCE and 300 CE the second stage of this expansion took place. Kusi peoples scattered out southward from Malawi to Zimbabwe, Mozambique, and the eastern side of South Africa. The Kaskazi at the same period grew in numbers, founding new settlements in the highlands of Kenya and in the coastal hinterlands and spreading more and more widely in western and southern Tanzania.

The effects of these developments were not restricted to Bantu-speaking communities. The keeping of sheep and cattle, in particular, appears to have spread southward ahead of the advance of the Kaskazi and Kusi. Sometime between 400 and 100 BCE several groups of Khoisan hunter-gatherers living in what is today northeastern Botswana took up the raising first of sheep and then of cattle. Combining their older hunting and gathering practices with a highly productive herding economy, one such people, the Khoikhoi, rapidly spread south after 100 BCE to the South African coast and then eastward to the Cape of Good Hope. In the same centuries, a related pastoral society, the Kwadi, spread livestock raising eastward to northern Namibia.

Equally significant, as the Kaskazi and Kusi peoples moved into new areas, knowledge of the African grain crops diffused westward from them to the Bantu communities of the woodland savannas. Adopting these crops, along with ironworking, between approximately 400 and 100 BCE, the Central and Western Savanna Bantu lessened their dependence on high-rainfall environments and entered into a new era of population growth and expansion. Between 100 BCE and 300 CE, several different Western Savanna peoples followed river routes southward into the dry savannas of present-day western Zambia and interior Angola. The ancestral Southwest Bantu moved farthest south, settling along the Kunene and Okavango Rivers in the dry steppes of the far northern Kalahari region. There they took up cattle raising under the influence of their Kwadi neighbors. In the early centuries of the first millennium CE, several Central Savanna peoples also spread out with their now more varied crop repertoire, establishing themselves as far south as central and southern Zambia.

Chiefdoms and States, 300–1100 CE

As far as scholars can presently tell, nearly all Bantu-speaking societies retained the old Bantu pattern of belonging to localized clan and lineage polities down to the end of the first millennium BCE, with one probable exception. Among certain Great Lakes Bantu



along the southeast side of Lake Victoria, there is indirect evidence that local intensive iron production may have enabled small wealthy kingdoms to develop for a time during the last couple of centuries BCE and first three centuries CE. Environmental collapse caused by the overcutting of forests to supply the smelting furnaces brought this period of political growth to an end by the fifth century CE. Wider-reaching political authority conceivably may also have accompanied the rise of large villages and long-distance trade in the first millennium BCE in the equatorial rain forest, but so far no evidence of such political structures has yet been found.

Between 400 and 1100, however, there is clear evidence in three different regions of the emergence of territorial chiefdoms or very small kingdoms. Among the Great Lakes Bantu, chiefdoms and tiny kingdoms emerged anew in several areas, both in the Western Rift and along the western shores of Lake Victoria. The first notable states took shape thereafter, in about 1000.

In the Kongo Basin chiefdoms became prominent along the major river arteries of commerce several centuries before 1100. The most striking material testimony of this development was the spread of a particular kind of chiefly or royal regalia, the flange-welded double bell, all around the Kongo Basin before 1000 and as far south as Zambia and Zimbabwe by 1100. The new political economy of this age surely rested on new elaborations of commercial relations, although the specific features of these relations remain unclear.

A third region of emerging chiefdoms and petty kingdoms, dating between 400 and 900, lay just south of the Limpopo River in northern South Africa. In the tenth century several royal families migrated northward with their followers across the Limpopo. Bringing with them the new concept of rule by kings and chiefs, they founded the first significant kingdoms at Shroda just north of the river and subsequently, in the eleventh century, at Mapungubwe just south

of the Limpopo. In the first period, up to the ninth century, royal wealth in cattle was the material basis of the chiefdoms. From the tenth century onward, international demand (arriving via the Indian Ocean) for African gold and ivory ratcheted upward the scale and complexity of the political order and stimulated the emergence of urban centers, of which Shroda and Mapungubwe were the earliest. The Zimbabwe empire of the thirteenth to fifteenth centuries arose on these foundations.

Away from the core regions of political and commercial growth, however, many older patterns of life persisted. In the equatorial rain forest, the last great spread of the agricultural frontier was that of the Bantu-speaking Mongo, who displaced the Batwa across the central Kongo Basin only between 400 and 1100 CE. In eastern and southern Africa, Bantu speakers have continued to expand into new niches down to the present century.

What scholars used to call the Bantu expansion was in fact a complex of varied and distinctive histories extending over five thousand years and across many different lands. That story is told here in barest outline, covering only the main linking themes of those multifaceted pasts.

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Africa—Postcolonial

In 1945 the Fifth Pan-African Congress convened with the goal of ending colonialism in Africa. By 1960 Africa had experienced successful independence movements in several countries, and many military overthrows of government ensued. A general unity has not yet settled on the continent, however. Efforts to build a “United States of Africa” after colonialism have been hindered by the HIV/AIDS epidemic and religious disputes.

After World War II, Africans and those of African descent met at the Fifth Pan-African Congress in Manchester in the United Kingdom in 1945, where one of their primary aims was to formulate strategies for ending colonialism on the continent. Several independence movements around the continent were sparked or gained a new momentum as a result of the congress’s activities. By 1960 several African countries had freed themselves of their colonial masters or were actively engaged in struggles to achieve that goal. In the following decades the African continent experienced many political, economic, and social challenges as well as moments of glory that have helped determine its current position in world history.

Impact of Colonialism

Colonialism’s impact on the African continent was dramatic: colonialism was autocratic, and it set up artificial boundaries that privileged certain regions (or ethnic groups within those regions). Colonial authorities exploited the territories they controlled for their mineral wealth, and agricultural potential was poorly developed. This colonial legacy was a huge

challenge for the new governments in the early post-colonial period.

The fact that colonial powers had not established democratic governments in the lands they controlled predisposed the newly established independent governments to continue noninclusive traditions of governing. During the colonial era police forces had been used to quell disturbances, put down protests, and arrest political agitators; many of these practices continued after independence. The fledgling independent states did not have the means to address major concerns such as better employment opportunities, housing, and developing adequate health care and educational systems. Often, out of political expediency, the new governments catered to privileged classes or ethnic groups that were the equivalent of mini nations within larger states.

The Organization of African Unity (OAU)

At the core of the idea of a united African continent was the Pan-Africanist Kwame Nkrumah (1909–1972), the first leader of an independent Ghana. His vision of a United States of Africa took a step forward with the formation of the Organization of African Unity, whose charter was signed on 25 May 1963 in Addis Ababa, Ethiopia. Among the conditions for membership were political independence and government by majority rule. There were thirty charter members, among them Ghana, Morocco, Algeria, Libya, Nigeria, Liberia, Sierra Leone, Ethiopia, Senegal, and Chad.

The general aims of the OAU were to promote unity and solidarity among African states, to respect

and defend member nations' sovereignty and the integrity of their borders, and to promote intercontinental trade. However, the OAU had no real authority over its member states, and the reality was that external forces (notably the United States and the Soviet Union) had significant influence over the various political and economic positions taken by many of the OAU's member states. While the OAU did use its influence to mediate or attempt to resolve various conflicts on the continent (for example, conflict in Mozambique in the mid-1970s, the Somalia-Ethiopian war of 1977, and civil conflicts in Chad in 1980–1981), it was less successful as the unifying force that Nkrumah had envisioned.

Military Governments

Military takeovers of governments have been a consistent feature of postcolonial African life. Between 1960 and 1990 there were more than 130 coup attempts, close to half of which were successful. By the late 1990s African countries collectively were spending more of their national budgets on military expenditures than on education and health systems combined.

Kwame Nkrumah was ousted from power by the military in 1966; the military retained control on again and off again until 1992. Nigeria, Africa's most populous country, was the setting of a violent military overthrow in January 1967 in which the president and several other prominent politicians were assassinated. Subsequent events in that country led to the outbreak of a devastating civil war (1967–1970, also known as the Biafra War). In some cases military leaders assumed power to prevent the total breakdown of the government, and in some cases the political infighting, governmental corruption, and civil unrest the country endured before the takeover were so severe that the population actually welcomed military intervention. This was the case with Nigeria in 1967 when its first coup took place. But although military governments were able to enforce the rule of law, they were no better at addressing issues of poverty, health care, land reform, and employment than the civilian governments they had toppled.

Forging National Unity

Nation building has been a major challenge for modern African nations. Colonial "divide and rule" policies had often privileged one group over another in terms of political power or access to commercial advantages. The period before and after World War II (when nationalist sentiments began to surge) saw the emergence of ethnic (sometimes referred to as "tribal") associations and unions. In several cases these became the basis of more formal political parties. While the various disparate factions shared the single goal of independence, once that was achieved ethnic partisanship frequently became a stumbling block to national unity. There are close to a thousand different ethnic groups represented on the African continent, and from childhood a people are made aware of their ethnic identity as keenly (if not more) as they are made aware of their national identity.

Ethnic conflicts in the postcolonial era have been routine. Whether it is Yoruba versus Hausa versus Igbo in Nigeria, Kikuyu versus Luo in Kenya, Shona versus Ndebele in Zimbabwe, Zulu versus Xhosa in South Africa, or Hutu versus Tutsi in Rwanda, these conflicts have continued to haunt many modern states. The 1994 Hutu-Tutsi conflict in Rwanda led to a genocidal massacre in that country. Political leaders have often actively or subtly exploited ethnic rivalries for political gain. Such is typically the case when resources are limited: political leaders favor one group as a means of maintaining that group's loyalty and support.

Some countries have used creative strategies to combat ethnic polarization. After Nigeria's devastating civil war, it began a policy of mandatory national service for its youth. After completing secondary school in their home territory, the participants were required to spend a year performing some service-related activity (such as tutoring younger students) in another part of the country, ideally where they would be exposed to a different language and cultural tradition.

Zimbabwe adopted an innovative strategy in the early 1980s in its creation of Heroes Acres. These stylized cemeteries were created throughout the country



This contemporary wall painting, *Mastering Colonial History the Namibian Way*, “deconstructs” the Reiterdenkmal (equestrian statue), a monument built to symbolize German victory over indigenous peoples in 1910.

to honor those who had died during the struggle for independence. In thus honoring a deceased combatant or hero, the state sought to minimize the polarization that could be caused by different ethnic funerary practices.

One-Party States

One way in which a number of modern African leaders and countries have attempted to combat the persistent problem of ethnic polarization has been through the establishment of so-called single- or one-party state. The theory is that if there is only one political party, there will be less of a tendency for people to

divide along ethnic lines, and more emphasis could be placed on nation building and tackling other social concerns, such as economic development. Proponents of a one-party state suggest that when there is just one party, individual talent has the opportunity to rise through the ranks of the party to achieve leadership position and recognition, regardless of ethnicity. Another argument put forward in support of a one-party state is that democracy as it has been described in the West is foreign to the African continent, which traditionally had chiefs, kingdoms, and top-down rule. Prominent postindependence leaders who have spoken persuasively in favor of this “traditional” form of government include Julius Nyerere (1922–1999) of



Tanzania and Kenneth Kaunda (b. 1924) of Zambia. Many African countries that began as multiparty states have become, either de jure or de facto, single-party states: today the majority of African states are one-party states.

The advantages that proponents of a one-party state have touted have not materialized, however. Economically, Tanzania under Julius Nyerere performed very poorly because of his adherence to strict socialist ideology. The one-party systems in Malawi, Zaire, and Uganda were very repressive, restrictive, and even brutal at times. In some cases ethnic loyalties continued to be exploited. Furthermore, because one-party states have a tradition of controlling the media, it is difficult for dissenting views to be heard.

After years of political infighting and dramatic instances of violence in Zimbabwe, the two major political parties—the Zimbabwe African People's Union (ZAPU) and the Zimbabwe African National Union (ZANU)—emerged as a united single party ZANU (PF) in 1987, thus making Zimbabwe a de facto single-party state. Others political parties were not outlawed, but the power apparatus clearly fell into the ZANU (PF) sphere of control. It was not until the early twenty-first century that a viable opposition party emerged. The Movement for Democratic Change (MDC) seriously challenged ZANU, which quickly passed laws, instituted restrictive practices, and, according to members of the opposition, engaged in political intimidation to limit its rival's access to the public and chances for success.

One development took place in Kenya at the end of 2002. After years of de facto single-party rule, the Kenya Africa National Union was defeated in free and fair national elections by the newly formed National Rainbow Coalition (NARC) with a minimum of disturbances. This signified a new direction for Kenya and possibly for other African countries. However NARC rule in Kenya was short-lived, ending in 2005.

Economic Strategies

Throughout the postcolonial period there have been multiple efforts to expand economic cooperation

among African countries as a means of countering outside unfair trade practices. In 1967 the East Africa Community (EAC), which fostered cooperation among Kenya, Tanzania (by 1967 Tanganyika had become Tanzania, which also included Zanzibar), and Uganda, was established, but it fell apart a decade later, when disputes between Kenya and Tanzania broke out and Tanzania invaded Uganda to oust Idi Amin (1924/1925–2003). The Economic Community of West African States (ECOWAS) was established in 1975 to ease trade among its sixteen member states. Similarly, the Southern African Development Coordinating Conference (SADCC) formed to combat South Africa's economic dominance of that region. These agreements have not been without problems, however. In the case of ECOWAS, for example, Nigeria has been able to use its power as the country with the largest economy and population in the region to force its will on the smaller states.

Directions and Challenges for a New Century

In 2004, South Africa celebrated its tenth anniversary as an independent African state. Ten years earlier, after years of political and often violent resistance, the African National Congress (ANC) under the leadership of Nelson Mandela (b. 1918) took control of the government. Although Mandela served only one term in office as South Africa's first president elected by the entire population, he occupied a larger-than-life position throughout the African world.

As Africa's largest and most prosperous economy, South Africa is poised to lead the rest of the continent. Nelson Mandela's successor, Thabo Mbeki (b. 1942), called for an African renaissance, which he envisioned as a regeneration of African pride, technology, innovativeness, and accomplishment.

The promise of this African renaissance, however, is in danger of being sidetracked by the HIV/AIDS pandemic, which has the potential to ravage the African continent in the same way the bubonic plague devastated fourteenth-century Europe. How

My humanity is bound up in yours, for we can only be human together. • Desmond Tutu (b. 1931)

the African continent deals with the pandemic will determine what sort of future awaits the next generation.

The other threat facing the continent is the outbreak of religious violence in various countries. While outbreaks of violence between Christians and Muslims have occurred in Nigeria since the mid-1980s, they have intensified more recently (within the last five years). Efforts to handle these conflicts have been minimum, and the root causes of the disputes have not really been dealt with. In other parts of West Africa there continue to be religious tensions, but they are not nearly so severe as in Nigeria. The World Conference on Religion and Peace (WCRP; founded 1970), a coalition of representatives of the world's great religions, has encouraged Christian and Muslim leaders in the region to work together through the formation of organizations such as the Inter-Religious Council of Sierra Leone (IRCSL; 1997), which in 1999 helped bring about the signing of the Lomé Peace Accord in that nation. There are many African organizations that seek to address the delicate issue of religious intolerance on the continent. One of the primary aims of the Project for Christian-Muslim Relations in Africa (PROCMURA) is the facilitation of constructive engagement between Christians and Muslims. As part of the effort to improve relations, participants have shared gifts and sent greetings and goodwill messages on the occasion of major religious festivals. They have also formed joint committees of Christians and Muslims to address such issues as the implementation of Islamic law in northern Nigeria and

to encourage governments to stop making aid and political appointments dependent on one's religious affiliation. Such efforts represent an African solution to an ongoing challenge in the region.

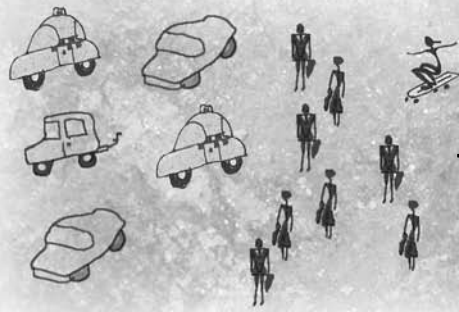
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See also African Union

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African American and Caribbean Religions

The African slave trade had a huge impact on the transformation and spread of African religions worldwide. Numerous ethnic groups taken from Africa shared similar belief systems, which carried over to the New World. Though beliefs and practices often persevered within groups, forced migration and interaction with Europeans helped develop and change African American and Caribbean religions into what they are today.

African American and Caribbean religions are the products of one of the greatest forced migrations in human history. Historians estimate that between 1650 and 1900 more than 28 million Africans were taken from Central and West Africa as slaves. At least 12 million of these Africans crossed the Atlantic Ocean to be sold in the Caribbean, South America, and North America. While Africans from many parts of Africa were taken into slavery, West African groups were disproportionately represented. Beginning in the early sixteenth century and continuing, officially, until 1845 in Brazil, 1862 in the United States, and 1865 in Cuba, more than 11 million black Africans—Yoruba, Kongo, and other West Africans—were brought to the Americas to work sugar, tobacco, coffee, rice, and cotton plantations.

The African slave trade transformed economies around the world. In Africa, it stimulated the growth of powerful African kingdoms, while in the Islamic world, the African slave trade expanded commerce in the Indian Ocean and the Persian Gulf. In the Americas, it was a key component in the success of plantations established by Europeans. In addition, wealth generated by slavery transformed European

economies dramatically, and the African slave trade also transformed African religions and fostered the spread of these religions around the world.

African Religions in the New World

In the Americas, the institution of slavery persisted much longer in some places than others. With the exception of African slaves in Haiti—who initiated a revolution in 1791 and in 1804 established the first black republic in the Americas—Africans became emancipated in the Americas in the following order: Jamaica and Trinidad in 1838; the United States in 1863; Puerto Rico in 1873; Cuba in 1886; and Brazil in 1888. These dates are highly significant. For example, the ethnologist Pierre Verger (1968) contends that the “purest” forms of African religion are to be found in northeastern Brazil primarily because the slave trade to Brazil continued illegally into the twentieth century.

Of the Africans taken to the Americas as slaves, 99 percent came from an area stretching from modern-day Senegal and Mali in the north to Zaire and Angola in the south. This corridor encompasses a number of ethnic groups belonging to the Niger-Kongo language family. A common language base and common cultural traditions facilitated the movement and exchange of people, goods, and ideas along this corridor.

These ethnic groups also shared similar concepts concerning deities, the universe, the social order, and the place of humans within that order. Unifying themes of African systems of belief and worship include the following: the idea that there is one god who created and controls the universe; a focus on blood

Religious and other culturally significant articles are on display at an Afro-Caribbean celebration.



sacrifices; and belief in the forces of nature, ancestral spirits, divination, the magical and medicinal powers of herbs, the existence of an afterlife, and the ability of humans to communicate with deities through trance-possession states.

Descendents of Kongo and Yoruba peoples account for about 17 percent of the African population in Jamaica, while the Akan and Kalabari account for, respectively, 25 percent and 30 percent of the Jamaican population. It is estimated that on Cuba and Hispaniola (the island that is home to Haiti and the Dominican Republic) Kongo ethnic groups constitute 40 percent of the African population, while the Yoruba and other related groups shipped from the Bight of Benin make up, respectively, 15 percent and 40 percent of the African populations of Haiti and Cuba. Among the descendants of slaves in the United States, it is estimated that one in four African Americans is of Kongo descent and that one in seven African Americans is of Yoruba descent. It should be noted that few slaves came to the United States directly from Africa. Most had worked plantations elsewhere before being sold in the United States.

These percentages are important for understanding African religions in the New World. Whenever a large

number of slaves from a particular place in Africa were sold to a single New World location, they were better able to preserve selected aspects of their religions. Such religious retentions were never exact replicas of African religious practices. They represented a syncretism or blending. One reason for this is that African tribal religions were revealed over time. Only elders possessed extensive religious knowledge. During the early years of slavery, elders were seldom enslaved because older captives rarely survived the rigorous passage to the New World. Most first-generation slaves were under twenty years of age, and few were over thirty. Their knowledge of religious ritual was limited to what they had personally seen and/or experienced. On the other hand, later in the slave trade there were African religious specialists (like Robert Antoine, the nineteenth-century founder of the first Rada compound in Trinidad) who voluntarily migrated to the Caribbean specifically to establish African religious centers in the New World.

The relationship between African religions as practiced in Africa and these same religions in the New World is replete with examples of what Pierre Verger (1968, 31) has termed “flux and reflux.” Building on a lifetime of fieldwork and archival research,

Verger documented extensive and continuous contact between religious specialists in Africa and religious organizations in the New World. He painstakingly demonstrated that the slave trade was not only “of” Africans (i.e., as objects of the trade itself), but “by” Africans as well, in the sense that Africans and African Americans were not only laborers but also producers and traders in the plantation system, and thus played an active role—not just a passive one—in the ongoing drama of slavery. But Verger also notes that such “flux and reflux” was rare during the early days of slavery, and most sixteenth- and seventeenth-century slaves were forced to improvise from a limited knowledge of African religious traditions.

On both sides of the Atlantic the meeting of religions among Africans and people of African descent involved more than Christianity and the traditional religions of Africa. It also involved Islam. Working its way from the Sahara long before Christianity began to touch the coast of West Africa, Islam—like Christianity—interacted in complex ways with the traditional religions of Africa. Brought to the Americas by enslaved African Muslims, Islam struggled to survive in an inhospitable, Christian-dominated environment.

African and African American religions have always been at the center of debates concerning the retention of African cultural traits in the New World. Some prominent scholars, most notably the sociologist E. Franklin Frazier (1964), have suggested that New World slavery was so disruptive that few African traits were able to survive. Other scholars, most notably the anthropologist Melville J. Herskovits (1941), have argued effectively for the survival of African traits in New World societies. Herskovits’s view has predominated, but the issue remains complex (see Mintz and Price 1992).

The quest for African cultural traits in the New World continues, but with new and refined sensibilities. The question is no longer whether, but how much? As Stuart Hall (1990, 228)—commenting on the *presence africaine* in his native Jamaica—noted,

Africa was, in fact, present everywhere, in the everyday life and customs of the slave quarters, in

the language and patois of the plantations, in names and words; often disconnected from their taxonomies, in the secret syntactical structure through which other languages were spoken, in the stories and tales told to children, in religious practices and belief in the spiritual life, the arts, crafts, music and rhythms of slave and post-emancipation society....Africa remained and remains the unspoken, unspeakable “presence” in Caribbean culture. It is “hiding” behind every verbal inflection, every narrative twist of Caribbean cultural life.

African American religious institutions in the United States and the Caribbean provide valuable insight into the inner workings of African American and Caribbean societies and cultures. Moreover, it is appropriate for social scientists to devote their attention to religion because—as C. Eric Lincoln and Lawrence Mamiya so effectively argued (1990, xi)—“religion, seriously considered, is perhaps the best prism to cultural understanding, not as a comparative index, but as a refractive element through which one social cosmos may look meaningfully at another and adjust its presuppositions accordingly.”

Two erroneous assumptions have informed past studies of African and African American religions. The first is that the black experience of religion simply replicates white religious experience; the second is that it is totally dissimilar to it. Neither assumption is true because neither takes into account the complex interactions between African-based religions and other world religions. Correctly viewed, African American religious experience cannot be separated from North American religion. It is of one fabric. African religious experience is part and parcel of North American religious experience just as Christianity and Islam are now part and parcel of religious experience on the continent of Africa. Nevertheless, exact genealogies of African and African American religions are difficult to discern.

African Religions in the Caribbean

The best-documented religions—such as Haitian Vodun, Rastafarianism, Cuban Santería, and the

Spiritual Baptists in Trinidad—serve as prime examples of creativity and change in this dynamic region, which has become a fertile ground for the development of new religious admixtures and syncretism. Almost everyone in the Caribbean is from someplace else, and Caribbean religions have been greatly affected by the presence of Europeans, Africans, and—to a lesser extent—by Asian people as well. A majority of these religions have either an African or Christian base, but Caribbean peoples have modified selected aspects of these traditions, added to them, and made them their own. While much attention has been given to African influences, one cannot completely understand religious developments in the region solely in terms of an African past. The African past is a piece—albeit a large piece—of a more complex whole. Syncretism of Hinduism and Christianity abounds, and one can never underestimate the potential impact of Islam.

Rastafarianism is perhaps the most widely known of Caribbean religions. It is difficult to estimate the exact number of Rastafarians, but the religion's influence vastly exceeds its numbers in Jamaica, elsewhere in the Caribbean, in Europe, Latin America, and the United States. The movement traces its history to a number of indigenous preacher-leaders in the 1930s, most notably Leonard Howell, Joseph Hibbert, Archibald Dunkley, Paul Earlington, Vernal Davis, Ferdinand Ricketts, and Robert Hinds. The influence of Marcus Garvey is also apparent. Each of these leaders—working in isolation from the others—came to the conclusion that Haile Selassie (1892–1975), then enthroned as Ethiopian emperor, was the “Lion of Judah” who would lead all peoples of African heritage back to the promised land of Africa. In the Amharic (Ethiopian language), Ras Tafari means “head ruler” or “emperor.” It is one of the many formal titles belonging to Haile Selassie.

While Rastafarianism is by no means a homogeneous movement, Rastafarians share seven basic tenets: (1) black people were exiled to the West Indies because of their moral transgressions; (2) the wicked white man is inferior to black people; (3) the Caribbean situation is hopeless; (4) Ethiopia is heaven; (5) Haile Selassie is the living God; (6) the emperor of Ethiopia will arrange for all expatriated persons

of African descent to return to their true homeland; and (7) black people will get revenge by compelling white people to serve them. Among contemporary Rastafarians different subgroups stress different elements of the original creed; for example, the alleged death of Haile Selassie (a large number of Rastafarians believe that Haile Selassie is still alive) has raised significant questions regarding Selassie's place in the movement.

Cuban Santeria combines European and African beliefs and practices. But unlike Vodun, the religion is inspired mainly by one African tradition—that of the Yoruba. In Santeria, the Yoruba influence is marked in music, chants, and foodstuffs, and by sacrifice. During major ceremonies, blood—the food of the deities—flows onto sacred stones belonging to the cult leader. These stones are believed to be the objects through which the gods are fed and in which their power resides. A significant religious development in North America has been the large-scale transfer of Cuban Santeria to urban centers, notably New York, Miami, Los Angeles, and Toronto. It is estimated that there are currently more than 100,000 Santeria devotees in New York City alone.

The Spiritual Baptists are an international religious movement with congregations in Saint Vincent (where some Baptists claim the faith originated), Trinidad and Tobago, Grenada, Guyana, Venezuela, Toronto, Los Angeles, and New York City. Membership is predominantly black, but in recent years congregations in Trinidad have attracted membership among wealthy East Indians and Chinese. A central ritual in the Spiritual Baptist faith is known as the mourning rite. This is an elaborate ceremony involving fasting, lying on a dirt floor, and other deprivations. A major component of the mourning rite is discovering one's true rank within the church hierarchy.

A critical issue in the study of Caribbean religions is the selection of a unit of analysis. Because syncretism plays such a prominent role in the development of religions in the region, it is often difficult to separate indigenous and foreign elements. Since there has been so much outreach, it is often difficult to discover the “true” origin of any single religious group.



Because most of the religions considered here lack a denominational chain of command, one cannot make statements about them as one might about the Roman Catholic Church or Presbyterianism. The most accurate assessments refer to individual congregations and their leaders. To examine movements such as Rastafarianism, Santeria, Vodun, and the Spiritual Baptists as if they were unified denominations on the European and North American model is to present an overly coherent picture of an incredibly fragmented and volatile religious situation.

African Religions in the United States

Scholarly studies on African American religion in the United States are often traced to W. E. B. Du Bois's classic *The Negro Church* (1903), "which constituted the first major book-length study of African American religion in the United States. Employing a wide range of research strategies (historical, survey, interview, and participant-observation) Du Bois explored multiple aspects of African American religious life including church finance, denominational structures, and beliefs. Du Bois characterized the Black Church as the first distinctly African American social institution" (Zuckermann 2000, 109). Subsequent studies of the Black Church were much more limited in scope. As noted, later scholars confined their attentions to the retention of African cultural traits in the New World, and scholars debated the extent to which African American religion draws from African religion in its diverse forms. Few slaves came directly to the United States from Africa, and the presence or absence of so-called Africanisms is more difficult to discern in American religions than in those of the Caribbean. Nevertheless, bits and pieces of African religious concepts and rituals are present in North America—but in greatly modified forms. These concepts and rituals include the call-and-response pattern in preaching, ancestor worship, initiation rites, spirit possession, healing and funeral rituals, magical rituals for obtaining spiritual power, and ecstatic spirit possession accompanied by rhythmic dancing, drumming, and singing.

Prior to the American Revolution, few American slaves were exposed to Christianity. Initially, planters did not promote the conversion of their slaves to Christianity because they feared that it might give slaves ideas about equality and freedom that were incompatible with slavery. Over time, however, slave owners became convinced that a highly selective interpretation of the Gospel message could be used to foster docility in their slaves. During the First Great Awakening (1720–1740), some free blacks and slaves joined Methodist, Baptist, and Presbyterian congregations. The Second Great Awakening (1790–1815), with its numerous camp meetings, attracted more slaves and free blacks to evangelical forms of Protestantism. In the eighteenth century, Methodists emerged as leaders in developing effective religious instruction among the slaves. Following its creation in 1845, the Southern Baptist Convention also undertook aggressive missionary work among slaves. Religion scholar Albert Raboteau (1978) has suggested that the Baptists were especially successful because baptism by immersion resembled West African initiation rites.

Throughout the United States, slaves worshiped in both mixed and segregated congregations. Masters often took house slaves with them to religious services at their own (predominantly white) churches, where blacks were required to sit in separate galleries. In addition to attending church services with their masters, slaves held secret religious meetings in their own quarters, in "praise houses," or away from the plantation in so-called hush arbors.

During the time of slavery, African Americans in the United States never experienced complete religious freedom, but a number of independent African American congregations and religious associations arose. Two early Baptist churches, the Joy Street Baptist Church in Boston (which was established in 1805) and the Abyssinian Baptist Church in New York City (which was established in 1808), were founded in response to discrimination in racially mixed congregations. Black Baptist congregations in the Midwest formed separate regional associations in the 1850s, and the first Baptist association, the National Baptist Convention, U.S.A.,

was formed in 1895. Black Methodists also established independent congregations and associations during the antebellum period. A group of blacks belonging to the Free African Society, a mutual aid society within St. George's Methodist Episcopal Church in Philadelphia, severed ties with its parent body in 1787 in response to what some black members saw as discriminatory practices. A majority of the dissidents united to form St. Thomas's African Episcopal Church in 1794, under the leadership of Absalom Jones. Richard Allen led a minority contingent to establish the Bethel African Methodist Episcopal Church. The Bethel Church became the founding congregation of the African Methodist Episcopal (AME) Church—the single largest black Methodist denomination. St. John's Street Church in New York City, with its racially mixed congregation, served as an organizational nexus for what became the second major black Methodist denomination, the African Methodist Episcopal Zion (AMEZ) Church.

African American religions became more diverse in the early twentieth century as blacks migrated from the rural South to northern cities. By this time, two National Baptist associations and three black Methodist denominations were already well established as the mainstream churches in black urban communities. Often these denominations cut across class lines. Conversely, black congregations affiliated with white-controlled Episcopalian, Presbyterian, and Congregational churches catered primarily to African American elites. Although mainstream churches attempted to address the social needs of recent migrants, their middle-class orientations often made migrants feel ill at ease. As a consequence, many migrants established and joined storefront churches. In addition, recent migrants became attracted to a wide array of Holiness-Pentecostal Churches, Sanctified Churches, and Spiritual Churches, as well as various Islamic and Jewish sects. Other independent groups, with such names as "Father Divine's Peace Mission" and "Daddy Grace's United House of Prayer for All People" also gained prominence. Today, approximately

90 percent of churchgoing African Americans belong to black-controlled religious bodies. The remaining 10 percent belong to white-controlled religious bodies. African Americans are also to be found within the memberships of liberal Protestant denominations, the Mormon church, the Southern Baptist Convention, and various groups such as the Jehovah's Witnesses, Unity, and the Seventh-day Adventists. There are more than 2 million black Roman Catholics in the United States, many of them recent migrants from the Caribbean.

A number of prominent African American religions in the United States are based on the teachings of Islam. Noble Drew Ali established the first of these, the Moorish Science Temple, in Newark, New Jersey, in the early twentieth century. The main teachings of the Moorish Science Temple were incorporated into the Nation of Islam, founded by Wallace D. Fard during the early 1930s in Detroit. Later, the Nation of Islam came under the leadership of the Honorable Elijah Muhammad. The Nation of Islam grew rapidly, in part due to the militant preaching of Malcolm X during the early 1960s. Rapid growth did not check schismatic tendencies that led to the appearance of numerous splinter groups, including the Ahmadiyya Muslim movement of Chicago, the Hanafis of Washington, D.C., and the Ansaru Allah community of Brooklyn. Following the assassination of Malcolm X and the death of Elijah Muhammad, Elijah's son, Wallace D. Muhammad, transformed the Nation of Islam into the more orthodox group known as the American Muslim Mission. To counter the Mission's shift to orthodox Islam, Louis Farrakhan established a reconstituted Nation of Islam.

Caribbean-based religions are among the fastest-growing religions in the United States. As noted above, Vodun, Rastafarianism, and the Spiritual Baptists have established large congregations in New York, Los Angeles, Miami, and other urban centers, attracting Caribbean migrants and American blacks, as well as a small number of white converts. Cuban Santeria is perhaps the most racially mixed and widespread of these religions.

I shall allow no man to belittle my soul by making me hate him • **Booker T. Washington (1856–1915)**

An African American Aesthetic

African and African American peoples do not conceptualize religion as something separate from the rest of their culture. Art, dance, and literature are understood as integral to the religious experience. This is aptly illustrated by the musician B. B. King's comment that he feels closest to God when he is singing the blues. Spirituals, the blues, gospel, rhythm and blues, bebop, Afro-Latin, and hip-hop are all rooted in West African sacred and secular music traditions. West Africans understand music as a means of propagating wisdom. In the Yoruba tradition, music stirs things up, it incites. West African music and art begin with God, the ideal. For example, Afro-Cuban music continues the African tradition of dispersing and expounding upon fixed and recurring God-generated themes that embody cultural ideals and values.

While African American music is derived from a variety of sources, religion has historically served as one of its major inspirations. As C. Eric Lincoln and Lawrence Mamiya (1990, 347) observe, "In the Black Church singing together is not so much an effort to find, or to establish, a transitory community as it is the affirmation of a common bond that, while inviolate, has suffered the pain of separation since the last occasion of physical togetherness."

Eileen Southern (1983) traced African American spirituals to the camp meetings of the Second Awakening, where blacks continued singing in their segregated quarters after the whites had retired for the night. According to Lincoln and Mamiya (1990, 348), black spirituals also appear to have had their roots in the preacher's chanted declamation and the intervening congregational responses.

The "ring shout," in which "shouters" danced in a circle to the accompaniment of a favorite spiritual sung by spectators standing on the sidelines, was a common practice in many nineteenth-century black churches. By 1830, many black urban congregations had introduced choral singing into their services. "Praying and singing bands" became a regular feature of religious life in many black urban churches.

Despite the opposition of African Methodists and other religious leaders to the intrusion of "cornfield ditties" into formal worship services, folk music became an integral part of African American sacred music.

According to Southern, black gospel music emerged as an urban phenomenon in revivals conducted in tents, football stadiums, and huge tabernacles. In 1927, Thomas A. Dorsey promoted what he called "gospel songs" in churches in Chicago, the Midwest, and the rural South. At a time when many Baptist and Methodist churches rejected gospel music, Sanctified churches (an aggregate of independent congregations stressing experience of the Holy Spirit and personal piety as keys to salvation) in both urban and rural areas embraced it wholeheartedly. The Church of God in Christ has been a strong supporter of contemporary gospel music. Spiritual churches (like the Israel Universal Divine Spiritual Churches of Christ, the Metropolitan Spiritual Churches of Christ, and the Universal Hagar's Spiritual Church) also accepted gospel music, and in New Orleans jazz is an integral feature of their worship services. In time, many mainstream congregations have incorporated gospel music into their musical repertoires.

African American religions in the Caribbean and the United States represent a coming together of African and European cultures in yet a third setting—that of the Americas. They are products of both voluntary and forced migrations, and represent a dynamic blending of Old World and New World faiths. E. Franklin Frazier (1964, 50–51) correctly argued that African American religion historically has functioned as a "refuge in a hostile white world." At another level, it has served as a form of cultural identity and resistance to a white-dominated society. In addition to serving as houses of worship, black churches were and are centers of social life, ethnic identity, and cultural expression in the African American and Caribbean communities.

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African Religions

Various traditional religions found in Africa are based on belief in one Supreme Being, while others embrace Earth deities, secret societies, and possession cults. Christianity and Islam, commonly practiced, came to Africa in the first centuries CE and the eighth century, respectively. Modern religion in Africa is a distinct blend and balance of traditional beliefs and new religious systems.

Africa is home to numerous “traditional” religions as well as various forms of Islam and Christianity and various more recent religious developments. There are certain religious characteristics that can be found in African spirituality that transcend any particular religion. Examining a sampling of traditional religions and Islamic and Christian denominations provides an insight into those overarching African spiritual characteristics.

Secret Societies

Secret societies, common among certain African peoples found mainly in West Africa, especially those among whom age-determined groups are not common, often have religious functions. They also unite people in different residence areas without kinship ties.

The religious or ritual knowledge of the secret society is not revealed to nonmembers. Allowing only members to know the secret—and, perhaps, only those members of a certain rank—adds to a secret society’s mystery. Moreover, membership is limited to people of a given category. Categories can be as broad as all married women or all initiated men. There are

categories for fishermen, hunters, craftsmen of all types, and market women, among others.

The Poro and Sande societies (for men and women, respectively) in Liberia have long interested anthropologists because these societies are major forces aiding government and facilitating social change. The Kpelle tribe opens a Sande bush school (which performs an initiation ceremony) every three or four years. Women of the Sande society are in complete control of the ceremony and school. Members of the initiation class are all girls between nine and fifteen years of age. They learn all they need to know to be Kpelle women from Sande members during the school session, which lasts from six weeks to three months.

During this period, Sande members perform cliterodectomy operations (cliterodectomies and circumcisions are common rites of passage in Africa), which are part of the transition from girlhood to womanhood. Sande members then perform rituals for those who have completed the bush school, marking their entrance into Kpelle society as women. Men of the Poro society dress in ritual regalia to welcome the women back into society.

A Supreme Deity

Most traditional African religions acknowledge one Supreme Being, though that creator god is often thought to have removed himself from the human sphere after creation, so that more focus is placed on lesser deities. In Sudan, for example, shrines exist in great numbers to lesser spirits but not to the creator god. The Yoruba of Nigeria acknowledge a Supreme Being, Olorun, but



A mosque in Capetown, South Africa. Mosques are focal points of communal worship for Muslims around the world. Photo by Frank Salamone.

it is the host of secondary deities, or *orisha*, that is the focus of Yoruba attention. Mulungu, the Supreme Being of the peoples of the great lakes region of East Africa, is only turned to in prayer after all other prayers have failed. But numerous African scholars and scholars of Africa dispute the interpretation that the creator god is viewed as remote. These scholars argue that the creator god is not remote, and rather that people can and do approach this god quite frequently. They indicate that there is a parallel with Christianity and its hierarchy of angels and saints.

In Sudanic religions, people are said to consult with the Creator before their birth, telling him what they want to do in life. The Creator gives each person what is needed to accomplish his or her fate. If

a person fails, then he or she is said to be struggling against his or her chosen fate. Luck is focused in the head, so a person who has been lucky in life is said to have a good head.

In general, Africans deem that powers come from the Supreme Being. The Dogon of Mali, for instance, believe that the vital force of their Supreme Being, Amma, circulates throughout the universe. They name that vital force *nyama*. Other groups have similar beliefs. These forces control the weather and are associated with the forces of nature, directly or through the high god's servants.

Other Deities

There are Earth goddess cults in a number of societies. The Ibo of the lower Niger River area have the goddess Ala, and the goddess Asase Ya has devotees among the Ashante peoples of Ghana. The presence of a deity linked to a certain phenomenon or natural feature reflects the importance of that phenomenon or natural feature in daily life; hence the fact that the Yoruba worship Ogun, the god of iron, reflects the people's sense, from the days when iron first began to be used, of its importance.

Storm gods are in some way related to the Supreme Being. Storm gods generally command their own priests, temples, and ritual ceremonies. The Yoruba and Ibo have a full storm pantheon of gods of storm, lightning, and thunderbolt. Shango is the Yoruba lightning and thunder god; he is worshipped along with his wives, who are river gods, and the rainbow and thunderclap, which are his servants.

Islam and Christianity

Islam first came to the savanna areas of Africa through trade and peaceful teachings in the eighth through tenth centuries. The benefits of centralized government under Islamic law were obvious to various chiefs. Under Islamic law rulers were able to unite tribal elements into a coherent whole. The kingdoms of Wagadu (Ghana), Mali, Songhai, Kanem, and Bornu and the Hausa emirates were



A Shi'a Shrine in Capetown. South Africa's multicultural society embraces diverse religious expression and beliefs. Photo by Frank Salamone.

all centralized states that adopted Islam to their advantage.

The introduction of Islamic government and law also provided an excuse for religiously sanctioned rebellion against rulers who were not living up to the strict tenets of Islam, according to various religious military rulers. In the 1800s, militant Muslims objected to the halfhearted Islamic faith of their rulers and led holy wars against those whom they considered lax in the faith.

These nineteenth-century jihads were common among the Fulani peoples. They upset the balance that had prevailed since around the thirteenth century between local rulers, who adhered to Islam, and their subjects, who continued to practice traditional religions. Although the Fulani tend to be pastoralists, there were a number of settled Fulani who had intermarried with Hausa or other settled peoples. One

result of these religious wars was that Fulani rulers replaced local rulers in the areas where the rebellions took place.

Christianity reached Africa in the first centuries CE, before it entered Europe. The Coptic Church (in Egypt), for example, go back to the first century of Christianity and still exists today. It, like the Ethiopian Orthodox Church, is a Monophysite church; that is, it teaches that Christ had a single nature rather than two distinct (human and divine) natures. The Ethiopian Orthodox Church has a large hierarchy of saints and angels, many monasteries and convents, and a strong worship of Mary, Gabriel, Michael, and Ethiopia's patron, St. George. There are many African saints, including Tekle Haimanot and Gabra Manfas Keddus. There is also belief in demons and other evil spirits, as well as in witchcraft and possession.



Possession Cults

Possession cults are one feature of traditional African religions that both African Christians and Muslims participate in, although often undercover. Although possession cults can be found in many regions, we will focus on the situation among the Hausa. In a 1975 study, the anthropologist Ralph Faulkingham notes that the Muslim and “pagan” Hausa in the southern Niger village he studied believed in the same spirits. Both believed in the same origin myth for these spirits as well. According to the myth, Allah called Adama (“the woman”) and Adamu (“the man”) to him and bade them to bring all their children. They hid some of their children. When Allah asked them where those children were, they denied that any were missing, whereupon Allah told them that the hidden children would belong to the spirit world. These spirits may, on occasion, take possession of those living in the everyday world.

Indigenous theology linked dead ancestors to the spirits of place in a union that protected claims and relationships to the land. Spirits of place included trees, rock outcroppings, a river, snakes, and other animals and objects. Rituals and prayers directed toward the spirits of family and place reinforced communal norms and the authority of the elders in defending ancient beliefs and practices. In return for these prayers and rituals, the spirits offered protection from misfortune, adjudication, and divination through seers or shamans, who worked with the spirits to ensure good and counteract evil. The Hausa incorporate those beliefs into their Islamic beliefs.

The majority of Muslim Hausa who participate in the spirit possession cult, called the Bori cult, are women and members of the lower classes; as one rises in social standing, one’s practice of Islam tends to become stricter and more orthodox. The Bori rituals among the Hausa appear to be rituals of inversion; that is, traditional societal rules are turned on their heads. People who are possessed may behave in ways that would not be accepted in

other circumstances. The Bori cult is widely understood as being a refuge from the strongly patriarchal ideal of Hausa Islam. Thus both women and effeminate males find some respite there. Indeed, the Bori cult provides a niche open to marginal people of all kinds, not simply women or homosexuals. Butchers, night soil workers, musicians, and poor farmers are welcome there. Mentally disturbed people of all classes similarly seek refuge among the Bori devotees.

African Religions Today

The peoples of Africa have been adept at accepting new religious systems while preserving essential features of traditional beliefs, and that approach to religion continues today, when New Age and Evangelical Christian denominations have become popular. An African base adapts new ideas and fits them to a basic pattern of kinship, personal spirits, ancestors, and age grades, seeking to fit all of these into personal networks of relationships.

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See also African American and Caribbean Religions

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African Union

The African Union is an international organization of African states. Formally established in 2002, it succeeded the Organization of African Unity, which was founded in 1963. Originally designed to advance the pan-African cause, the African Union still seeks to promote socioeconomic integration across the African continent, with the aim of achieving greater unity and solidarity between African countries and their peoples.

The African Union is in part the result of the end of colonialism in Africa and a burgeoning desire for a united African identity, called the pan-African movement. This movement gained real impetus following the Bandung Conference of 18–24 April 1955 in Indonesia where Asia and Africa came together to oppose colonialism and promote greater economic and social cooperation. Originally founded in 1963 as the Organization of African Unity (OAU), it was reconstituted as the African Union after member states ratified the Constitutive Act adopted in July 2000. In line with its origins, the OAU was largely concerned with economic and cultural issues, and while the member states professed pleasure with the performance of the OAU, they also said they wished to reform the relationship of the member states in an effort to better realize the goals of African unity on which the OAU was originally premised. As such, the AU has evolved more along the lines of the European Union, with organs such as an Assembly, Executive Council, Commission, Peace and Security Council, Pan-African Parliament, Economic, Social and Cultural Council, and Court of Justice. The evolving nature of the union has also seen it expand its

objectives to include the promotion of democracy, human rights and good governance. This expanded agenda potentially conflicts with the organization's traditional principles of observing state sovereignty and non-interference in the internal affairs of member states.

The Pan-African Dream

By the early nineteenth century, many Africans who had been educated in Europe began to speak and write of an African identity that transcended linguistic and ethnic groupings as well as colonial identifications. It is not clear when the term *pan-Africanism* was first applied in this context, and most people who used the word appeared to recognize it as little more than a dream. The idea of continental unity was certainly on the minds of delegates from the Caribbean, North America, Europe, and Africa who met in London for the First Pan-African Congress in 1900. The congress called for an end to colonial rule in Africa, citing its negative effects on Africans and proclaiming the need for all Africans—including those of African descent outside the continent—to come together in support of a greater African social and political entity.

This congress was followed by numerous expressions of similar ideas, including important statements by the Gold Coast political activist Charles Casley-Hayford, as well as various organizational expressions, perhaps most notably the Universal Negro Improvement Association founded by the Jamaican activist Marcus Garvey in 1914. Several international conferences promoting African solidarity followed, the first in 1919, coinciding with the Versailles Peace Conference at the end of World War I, followed by a

series of others throughout the 1920s. By the 1930s, colonial governments in Africa grew deeply suspicious of activities claiming pan-African connections, but the dynamics stimulating ideas of African unity grew more forceful with the onset of World War II.

African Independence and Continental Unity

Following World War II, many politically aware Africans believed independence from colonial rule was certain, if not imminent. Confirmation of this idea came first in northern Africa, with Libya's release from Italian control in 1951; but perhaps the most significant development was the creation of the new nation of Ghana, from the former British West African colony of Gold Coast, in 1957. Some African leaders, especially Ghana's first president, Kwame Nkrumah, saw this as a signal portending the creation of a unified, independent continent:

A union of African states will project more effectively the African personality. It will command respect from a world that has regard only for size and influence. . . . It will emerge not just as another world bloc to flaunt its wealth and strength, but as a Great Power whose greatness is indestructible because it is built not on fear, envy, and suspicion, nor won at the expense of others, but founded on hope, trust, friendship and directed to the good of all mankind. (Nkrumah 1961, xii)

Nkrumah actively campaigned for this principle of African unity, believing it would be the best way to encourage an end to all vestiges of colonialism on the continent. At a May 1963 meeting of African heads of state in Addis Ababa, Ethiopia, Nkrumah presented a formal plan to have all African nations join in the creation of such a union. By the end of the meeting, the more than thirty nations represented agreed to the creation of the Organization of African Unity.

Organization of African Unity

The OAU was in one measure a victory for the pan-African movement that had preceded it, especially in the arena of international efforts to remove all traces

of colonialism in Africa. A nine-nation Liberation Committee worked to promote independence for Africans continuing to live under colonialism and also to bring about majority rule for Africans living in South Africa. These efforts were a substantial part of the successful international efforts that eventually led to the end of apartheid and to a new South African government in the 1990s.

But the price of this pan-African victory was a significant limitation of the scope and power of the OAU as an effective international organization. The core of this dilemma was in the first principle enunciated in its charter—"the sovereign equality of all member states"—which included a commitment to "non-interference in the internal affairs" of any member state (African Union n.d.a). In practice, this limited what the OAU might achieve in promoting many of its other goals, including the protection of the rights of Africans and the resolution of a number of destructive civil wars on the continent.

One expression of the frustration concerning these limitations was the complaint often voiced by Julius Nyerere, president of Tanzania, that the OAU was merely a sort of trade union for African heads of state that allowed each of them a forum of international expression without any questions about their own sometimes destructive policies. Thus, rather than promoting any real unity, the OAU was seen at times to reinforce the unnatural divisions of the continent that had in fact been the legacy of colonial conquest and administration. Only terribly destructive conflicts in the 1990s in the Kongo, Ethiopia, Somalia, and still later in Sierra Leone and Liberia—the last two of which precipitated intervention by a group of West African states—brought the OAU policies of noninterference seriously into question.

A New Organization

African heads of state meeting in 1999 issued a declaration calling for a reconstituted continental organization modeled loosely on the European Union. One of the keys to the new African Union was a new principle written into its Constitutive Act, adopted in July 2000, which asserted "the right of the Union to

We are not guardians of the earth for our children. It is our children's land which they are lending to us. • **Kenyan Proverb**

intervene in a Member State pursuant to a decision of the Assembly in respect of grave circumstances, namely: war crimes, genocide and crimes against humanity” while also reaffirming the “sovereign equality and interdependence” of all the member states (African Union n.d.b). The AU actually came into existence the following year and was ceremonially launched at a summit in Durban, South Africa, in July 2002.

While the new organization has promised to focus more on economic matters, even moving toward an eventual common currency, given the instability in parts of Africa, the AU cannot help but be forced to confront contentious matters of politics. These efforts have been widely applauded internationally, with significant commitments from the United States and the European Union for a New Partnership for African Development created by the AU member states. But they have also proven to be divisive within the AU. For instance, in respect to the crisis in Zimbabwe—including widespread government violence and interference in elections—some members sought to suspend Zimbabwe and impose sanctions while others refused to interfere. The compromise was to meekly urge a negotiated solution between the ZANU-PF government of Robert Mugabe and the opposition Movement for Democratic Change led by Morgan Tsvangirai.

Nevertheless, on occasion the AU has taken action to intervene in the affairs of member states in the name of peace and security. In 2004 the AU deployed a peacekeeping mission to the Darfur region of western Sudan to prevent inter-ethnic conflict and genocide. Peaking at around 7,000 troops, the AU mission eventually gave way to a United Nations Mission on 31 December 2007. In the absence of a functioning government, the AU has similarly operated a Peace Support Operation in Somalia since March 2007. In a similar interventionist fashion, the AU has suspended Mauritania and imposed sanctions and intervened in Anjouan, Comoros following coups and political turmoil in 2005 and 2007 respectively.

The African Union has a long way to go before it achieves the level of integration seen within the European Union. Nevertheless, the transition from the

OAU to the AU has brought with it broader objectives and a restatement of its quest for unity. While the pan-African vision of its founders remains some way off, and while issues such as the state of affairs in Darfur and Zimbabwe are far from ideal, the AU has begun to take some steps toward achieving its original goals.

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Afro-Eurasia

Treating the three very distinct areas of Africa, Asia, and Europe as a single entity—Afro-Eurasia—can foster a greater understanding of themes and events that overlap and cross those conventionally defined borders. As a term *Afro-Eurasia* is a useful geographical category; it should not replace Europe, Africa, and Asia as named areas on the world map, but rather be used as a tool in the historian's methodological kit.

Afro-Eurasia designates the land masses of Africa and Eurasia, together with adjacent islands, as a single spatial entity. The concept of Afro-Eurasia is useful in the study of both historical and contemporary social phenomena whose full geographical contexts overlap in one way or another the conventionally defined continents of Africa, Asia, and Europe. A prominent example is the Roman Empire, which politically unified societies all around the Mediterranean basin, a region that has a fairly uniform climatic and vegetational system. Acknowledgment of the unity of the Mediterranean lands in the larger frame of Afro-Eurasia benefits the study of relatively large-scale developments in the empire, whereas a conception of the basin as made up of three primary and arbitrarily fixed sections—European, African, and Asian—may inhibit investigation of such processes.

The single land mass comprising Eurasia and Africa, the largest on the globe, has never acquired a distinctive and enduring name of its own. This is ironic, since geologists have named a number of great land areas, Pangaea, Gondwana, and Laurasia, for example, that existed in earlier eons before the Earth's tectonic plates arranged themselves into their current

configuration. Afro-Eurasia is sometimes identified as the Eastern Hemisphere or the Old World as against the Western Hemisphere or the New World, that is, the Americas.

Afro-Eurasia's Geographical Profile

Extending from approximately 78 degrees north latitude to 35 degrees south latitude, Afro-Eurasia exhibits a multitude of distinctive climatic and vegetational zones from Arctic tundra to wet tropical forest. The supercontinent's topography is equally varied, including the highest point (Mount Everest) and the lowest point (the Dead Sea) on the Earth's land surface. Afro-Eurasia's climatic and topographical diversity, however, did not deter human beings from populating, at least in sparse numbers, nearly all parts of the land mass and neighboring islands by about twenty thousand years ago. A satellite view of Afro-Eurasia reveals several prominent geographical features that have both challenged humankind's adaptive powers and facilitated travel, migration, and interchange.

Perhaps the most conspicuous feature from satellite distance is the lateral belt of arid and semi-arid land that extends from the North Atlantic coast of Africa to northeastern China. This chain of deserts, scrublands, mountains, and grassy plains includes the great Sahara and the Arabian, Kyzyl Kum, Taklimakan, and Gobi deserts, as well as the dry Iranian Plateau and the semiarid steppes of Inner Eurasia. Except where river valleys run through or other water sources could be tapped, Afro-Eurasia's great arid zone has had low population density relative to the supercontinent's temperate and tropical zones. Nevertheless, human groups began as early as the seventh



millennium BCE to adapt to arid lands by herding animal domesticates on seasonal grasses and eventually harnessing horses, camels, and oxen to carry loads and pull wagons across large expanses of rain-starved land.

Another prominent feature of Afro-Eurasia is the nearly continuous chain of highland ranges that stretches across the land mass from the Atlas Mountains of Morocco to the uplands of western China. Afro-Eurasian highlands have sometimes impeded human movement, notably north and south across the “roof” of the Hindu Kush, Pamirs, and Himalayas. Pioneer travelers, however, inevitably found the high passes, which thereafter became funnels of travel for merchants, missionaries, and conquering armies.

Because the Indian Ocean extends across much of the Eastern Hemisphere’s tropical latitudes, Afro-Eurasia’s only large expanse of tropical rainforest climate is in equatorial Africa, an area significantly smaller than Amazonia’s wet tropics in South America. We must also include southern India, Sri Lanka, and Southeast Asia, both mainland and insular, as part of Afro-Eurasia’s discontinuous tropical belt, lands where humans adapted ecologically in quite similar ways.

The Eurasian part of the supercontinent, whose long axis runs east-west, displays somewhat less floral and faunal diversity than does Africa, owing partly to its relatively narrower latitudinal range. Indeed, in his book *Guns, Germs, and Steel*, the geographer and evolutionary biologist Jared Diamond has argued that, because of the relative evenness of daylight and climate along Eurasia’s long axis, food crops, animal domesticates, and related agricultural technologies have in the past ten thousand years diffused more easily across the region than they have along the long north-south axes of either Africa or the Americas. The reason is that in Africa and the Western Hemisphere migrating farmers and herders had to make repeated adaptations to new climatic conditions.

In Afro-Eurasia’s northwesterly section, several seas penetrate deep into the landmass, which partially explain the relatively early intensification of human cultural exchange and attending technical

innovation and population buildup in that region. Elsewhere on the landmass, long rivers and animal transport technologies facilitated contact between coastal and interior peoples. Moreover, the chain of seas in western Afro-Eurasia (the Baltic Sea, North Sea, eastern coastal Atlantic, the Mediterranean and the Black Sea, Red Sea, and Persian Gulf) connect to the southern seas (the Arabian Sea, Bay of Bengal, and the China seas) to make for a transhemispheric chain of seas that from at least 4000 BCE permitted captains of sail craft to relay goods, ideas, and people from the far east to the far west of Afro-Eurasia.

How Many Continents?

Owing in large measure to the linguistic turn in social and literary research, most scholars today accept the proposition that human beings socially construct and name geographical spaces. Even mountain ranges and river valleys exist in nature only insofar as humans agree on the criteria for determining their characteristics, unity, and limits. Thus, nation-states, ethnic territories, climatic zones, and continents are invariably constructions susceptible to social acceptance, rejection, or modification over time. The idea of Afro-Eurasia is equally constructed as a place on the world map and as an arena of historical developments. So far, however, this construction has gained little attention or credence despite the supercontinent’s ready discernibility on the globe and despite accumulating evidence of complex, long-distance intercommunication among its peoples since very ancient times.

The greatest impediment to recognition of Afro-Eurasia as a geographical entity has been what the geographers Martin Lewis and Kären Wigen call the myth of continents, that is, the doctrine that the world comprises seven major land divisions, three of them being Africa, Asia, and Europe. Western and Western-educated scholars fully articulated the idea that the earth is constituted of seven primary “land worlds” only during the first half of the twentieth century. As late as 1950, for example, geographers were not fully agreed that the Americas constituted two continents, rather than one, or that Australia

deserved continental rather than merely large-island status.

Since the mid-twentieth century, however, the seven-continent scheme has become dogmatic in school textbooks, scholarly literature, geographical atlases, and the popular media, despite fundamental inconsistencies in the very definition of the word *continent*. If a continent is by conventional definition a large mass of land surrounded or nearly surrounded by water, why, critics of the sevenfold categorization have asked, do both Europe and Asia qualify as primary land masses, when no distinct watery division between them exists? Indeed, the conventional definition applies well to Australia, Antarctica, North America, South America, and Afro-Eurasia, making for five continents rather than seven. From this five-continent perspective we may perceive the Mediterranean, Red, and Black seas as internal seas of Afro-Eurasia, since they are inconsequential intercontinental partitions compared with the Atlantic and Pacific Oceans. Indeed, geographers, travelers, merchants, and soldiers have long known by experience the irrelevance of these waters as barriers to human contact. As soon as humans invented sturdy rafts and sailboats, which in the Red Sea region may have occurred as long as 100,000 years ago, people began to traverse these seas and transform them into busy channels of cultural and commercial exchange.

The ancient Greeks, whose world centered on the Aegean Sea, were the first we know of to identify Europe to the northwest, Asia to the east, and Africa to the south as distinct regions. But the Greeks also imagined these three zones as comprising parts of a larger integrated whole, the *orbis terrarum* (“world island”). Considering Greek

commercial and colonial enterprise all around the rim of the eastern and central Mediterranean, as well as in the Black Sea region, such a holistic conception is hardly surprising. Roman scholars, by contrast, despite the empire’s intercontinental span, tended to emphasize the threefold division. Medieval Christians drew maps of a world revolving around Jerusalem, a point technically in “Asia,” but in their worldview the lands northwest of the Holy City, that is, Europe, possessed sharp cultural and historical definition, whereas most of Asia and Africa, lands of heathen darkness, did not.

Europe and Asia: Status as Continents

Almost all societies that share language and cultural traditions also possess a foundational myth that situates themselves at the center of creation. Their territory is the place where the primordial creator made the first land mass and the ancestral human beings. From that “continent,” as it were, humans went forth to populate the rest of the world. The Chinese self-perception as the people of the Earth’s “middle kingdom,” the Hebrew story of the Garden of Eden, and the Muslim idea of the Dar al-Islam (land of surrender to God) versus the Dar al-Harb (land of war) have all served such mystiques of cultural and historical primacy.

The idea that Europe is one of the Earth’s primary land masses had its origins in Greek thought, took root in the Middle Ages, and became canonical in modern times, even as Western geographical knowledge accumulated to reveal the absence of any significant waterway or other physical partition separating the eastern side of Europe from what came to be known as Asia. Thus, Europe’s status as a continent had to rest on exceptional criteria, specifically its



The Hereford Mappa Mundi (English, c. 1280) divides the world into three parts—Africa, Europe, and Asia—surrounded by the ocean stream.

possessing a population that exhibited distinct cultural characteristics—the shared heritage of Western Christendom. Whatever linguistic, cultural, and political differences divided Europeans from one another, they all shared, according to the theory, a piece of the world distinctive for *not* being Asia or Africa, lands inhabited by Muslims and other unfathomable strangers. But because of the absence of any compelling physical border separating Europe from Asia north of the Aegean and Black seas, European intellectuals struggled for several centuries to agree on the location of their continent's eastern, sea-less border. Various rivers flowing north-south across Russia commanded followings, but in the nineteenth century, scholars reached general consensus that the Ural Mountains should be the marker. An obscure Swedish military officer first put forth this idea in the previous century, and pro-Westernizing Russians found it attractive because it emphasized “the European nature of the historical Russian core while consigning Siberia to the position of an alien Asian realm suitable for colonial rule and exploitation” (Lewis and Wigen 1997, 27). In the twentieth century, the Ural partition became dogmatic in Western academic and school geography. It largely remains so today despite the flood of historical evidence showing that those round-topped hills, whose highest peak reaches only 1,894 meters, have never thwarted human communication. Thus, the social construction of the “Continent of Europe” has well served the fundamentally flawed notion that the lands north of the Mediterranean and Black seas possess geographical singularity comparable to both Asia and Africa and that this European entity generated unique cultural ingredients and mechanisms that set it intrinsically apart from those two places, as well as from all other continents.

The eastern land frontier between Europe and Asia has not been the only continental demarcation subject to debate and revision. Medieval European geographers, for example, took it for granted that the Nile separated Africa from Asia, the Red Sea coming into its own as the conventional dividing line only in recent centuries. Contending for a racial definition of continents, a few scholars have asserted that

the Sahara Desert, not the Mediterranean, properly splits Europe from Africa because the desert separates “white” populations from “black” ones.

In the late nineteenth century, scholars introduced the concept of Eurasia, though with a variety of definitions. Eurasia, characterized simply as Asia and Europe as a single land mass, though distinguished from Africa, relegates Europe to the status of subcontinent, that is, a large peninsula of Eurasia comparable to South Asia, Indochina, or Arabia. The idea of a Eurasian continent has also been useful in the study of numerous historical processes whose proper geographical frame is that land mass as a whole. These developments include the dispersion of Indo-European-speaking populations from China to Ireland between the fourth and first millennia BCE; the long-distance migrations and invasions of pastoral groups (Scythians, Germans, Huns, Avars, Magyars, Turks) in the past three millennia; the opening of the trans-Eurasian Silk Roads; the east-west flow of technologies, ideas, and religions; the forging of the Mongol Empire in the thirteenth century; the rise of the Russian Empire in the seventeenth; and the emergence of the Soviet Union after 1917. All these developments notwithstanding, however, Eurasia has not so far come close to disturbing the conventional school wisdom that the world has seven continents, not six.

Afro-Eurasia as an Arena of History

The failure of Eurasia to supersede Europe and Asia on the continental honors list suggests that Afro-Eurasia faces a steep climb to acceptance, despite its value in formulating questions about long-term and large-scale change in world history. The human eye can readily see Eurasia as a single bulk of land but requires serious re-education to perceive the Mediterranean and Red seas, together with the Suez Canal (whose navigational width is 180 meters), as something other than lines between great spatial compartments.

On the other hand, several scholars of world history have either explicitly or implicitly envisaged

Afro-Eurasia as a single field of historical development, thereby ignoring or minimizing the conventional threefold division as having any bearing on the comparative or world-historical questions they wish to pose. In the early fourteenth century, when a chain of Mongol-ruled states stretched all the way from Korea to Bulgaria, the Persian historian Rashid al-Din wrote the *Collected Chronicles*, an immense work of history and geography that encompassed not only the lands of the Dar al-Islam but also India, China, Inner Eurasia, the Byzantine Empire, and Western Europe. Indeed, Rashid al-Din, along with other well-educated scholars and travelers of his time, may have been among the first people in world history to possess a consciousness of Afro-Eurasia in all its length and breadth as an interconnected whole. In the early modern centuries, when geographers were rapidly accumulating knowledge about the earth's every nook and cranny, European scholars wrote a number of "universal histories" that divided the world into primary parts, whether continents or civilizations, but that also acknowledged Asian peoples, if not yet Africans south of the Sahara, as having contributed in some measure to "Old World" history.

In the twentieth century, several world history pioneers, including Alfred Kroeber, Arnold Toynbee, Marshall Hodgson, William H. McNeill, and Leften Stavrianos, adopted varying conceptualizations of the "ecumene" (or in Greek, the *oikoumene*) to describe the belt of interlinked agrarian civilizations that began to emerge in the fourth millennium BCE and that eventually extended from the Mediterranean basin to the North Pacific. Hodgson frequently used the term *Afro-Eurasia* in connection with the ecumene, defined by him as "the various lands of urbanized, literate, civilization in the Eastern Hemisphere" that "have been in commercial and commonly in intellectual contact with each other" (Hodgson 1954, 716). On occasion, Hodgson also employed the term *Indo-Mediterranea*, though without detailed explication, to delineate the region of intense human interactivity that ran from North India to the Mediterranean basin, a region that overlay parts of Asia, Africa, and Europe.

In *The Rise of the West: A History of the Human Community*, William H. McNeill postulated the progressive "closure of the Eurasian ecumene," that is, the interlinking of Eurasian civilizations, as a key historical dynamic, though his definition of Eurasia implicitly incorporated the Mediterranean and Indian Ocean littorals of Africa as well. In the more recent book *The Human Web: A Bird's-Eye View of World History*, William H. and J. R. McNeill have consistently used *Old World* as their term of choice for the Afro-Eurasian landmass, even though many scholars have rejected this phrase as Eurocentric because it implies that the Americas were a new world whose history began when Europeans discovered them.

Philip Curtin, another world history leader, has also described "the gradual formation and spread of a series of intercommunicating zones, beginning from small points in the river valleys and spreading gradually to larger and larger parts of the Afro-Eurasian land mass" (Curtin 1995, 47). In *ReOrient: Global Economy in the Asian Age*, the late Andre Gunder Frank contended that in large-scale investigations of the development of the world economy between the years 1400 and 1800, Afro-Eurasia was a far more relevant geographical unit than Europe, Asia, Africa, or even Eurasia. Arnold Toynbee recognized the climatic, ecological, and historical contiguity of the Sahara and Arabian deserts by coining the term *Afrasian steppes*, an expression that transformed the Red Sea from a continental partition to a long, narrow lake *within* the Afro-Eurasian arid zone. The historian Michael Pearson has suggested that *Afrasian Sea* might well replace *Arabian Sea* in order to acknowledge the long historical associations among peoples of the East African coast, Arabia, Persia, and India. Indeed Pearson, Frank, and Ross E. Dunn have proposed the term *Afrasia* as an alternative to Afro-Eurasia in order to award the land mass a more distinctive name and to erase the hyphenation (Pearson 1998, 36; Frank 1998, 2–3; Dunn 1992, 7). However, this innovation, which conceptually embraces Europe but omits the combining form *Eur-*, has so far attracted few academic buyers.



As the literature of transnational, interregional, and global history has accrued, both scholars and teachers have recognized the liabilities of accepting conventional geographical expressions as natural, fixed, or timeless, because these presumed entities may impose arbitrary and distracting barriers to investigating historical phenomena in their totality. Thus, in order to formulate comparative and large-scale questions about developments that have occurred in the world, historians interested in comparative and large-scale change have in recent years taken a more situational and fluid approach to geographical contexts, shaping them to the specific historical problem at hand. These spatial reorientations include conceptions of the Atlantic basin, the Pacific basin, the Indian Ocean rim, the Mediterranean–Black Sea rim, and Inner Eurasia as zones of interaction different from and sometimes historically more serviceable than the conventional conceptions of civilizations and continents. Afro-Eurasia is simply one among several useful geographical categories, one that should not replace Europe, Africa, and Asia as named areas on the world map, but rather be put to work as a useful tool in the historian's methodological kit.

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See also Geographic Constructions of the World; Human Evolution

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Agricultural Societies

Agricultural societies, in which the domestication of plants and animals provides a substantial part of human subsistence, are thought to date back as far as 10,000 BCE. Throughout time these systems have changed in intensity as populations increased or declined, and as old technologies gave way to the new.

All societies are pluralistic, encompassing multiple organizational and technological systems. In an agricultural society a substantial part of the means of human subsistence comes from one or more agricultural systems (i.e., systems of domesticated plants and animals that depend upon a specific technology and system of management). Ecologically, the major agricultural systems can be divided broadly into Old World and New World types. Organizationally, they divide into household/peasant, elite, and industrial. A society's agricultural systems interact with its kinship, political, religious, and economic systems, among others.

Within each organizational type in each ecological framework, agricultural systems differ in degree of intensity. Intensity means the total of inputs to and outputs from each unit of land, and can be measured in terms of calories of energy. The most general trend in the development of agricultural systems is an interaction between population and intensification. Within the framework of a system, population builds up and intensification increases until it reaches its internal limits of sustainability. At that point the system either changes to permit still further intensification or it collapses.

Contrasting Ecologies

The difference between Old World and New World agricultural ecologies lies in the different ways they renew soil fertility. In long-fallow systems worldwide, such as swidden agriculture, this is accomplished by natural organic processes of plant growth and decay. By planting a field that has lain fallow the farmer brings the crops to the accumulated fertility. In short-fallow systems, by contrast, fertilizer must be brought to the crops. In Old World systems, this is accomplished with domestic animals, mainly ungulates. By converting parts of the crops the farmer cannot use into materials and foods that he can use, the animals reduce the total cropped area needed while their manure restores fertility. They provide additional organic material by the common practice of grazing beyond the farmed area in the day and returning at night. A variant of this system, important in Africa where the tsetse fly makes it impossible to keep cattle in fixed locations, is a symbiotic relation between mobile herders and sedentary farmers in which farmers allow the herders to graze cattle on their stubble in exchange for the herder keeping the cattle overnight on the farmer's land.

New World agricultural ecologies do not incorporate domesticated animals and hence have no manure cycle. Instead, fertilizing materials are generally brought to the fields by some form of water transport. This is done in two main ways: with water collection and with *chinampas*, floating beds in lakes and swamps. Water collection mainly involves either waterborne silt from rivers carried in irrigation channels

or flow from volcanic ash fields or eroding rocks. Although New World farmers recognized the value of organic methods such as fish buried with the seeds, these generally demand too much labor to use on a large scale.

Lacking all but a few domesticated animals, like llamas and guinea pigs, there were relatively few places in the New World where humans could depend wholly on agriculture, and those were surrounded by large areas where societies continued to be organized for hunting and gathering—sedentary pockets surrounded by mobile raiders. By contrast, agricultural communities of the Old World spread into much more of the total landscape, settled it more densely, and consistently obliterated the hunting and gathering communities that remained in between their settlements. This difference had important consequences for the way their respective organizational systems developed.

Old World

Settled communities cultivating wild plants first appeared in the Old World about 10,000 BCE. Domesticated versions of these same wild plants first appeared in such communities around 7000

BCE, in the “fertile crescent” around the Jordan valley and on the flanks of the nearby Taurus and Zagros mountains; they included emmer and einkorn (ancient varieties of wheat), barley, lentils, chickpeas, pea, bitter vetch, and flax. Domesticated animals appeared shortly thereafter: sheep, goats, humpless cattle, horses, and pigs. The presence of domesticated plants necessarily implies that farmers are planting each new crop from seeds harvested previously. Once this practice is established the crops can be spread into wholly new areas and evolutionary change can occur rapidly.

Agriculture spread by both diffusion of ideas and cultigens from group to group and by the migration of whole groups, with migration apparently the most prominent of the two processes. Domesticated crops reached the Balkans in the seventh millennium BCE, brought by immigrants. Farming villages appeared in southern France by 5000 BCE. Beginning about 5400 BCE agricultural villages of a distinctive culture called Bandkeramik spread from the area of Hungary to the Netherlands. The first agricultural settlements in South Asia appeared in the beginning of the seventh millennium BCE in what is now southern Afghanistan, with a Middle Eastern mixture of crops and animals. However, roughly contemporary agricultural

“Irrigating Apple Orchard, Hagerman, New Mexico.” Techniques, as well as crops, formed the basis for an agricultural exchange between the Old and New Worlds. New York Public Library.



13921 IRRIGATING APPLE ORCHARD, NEAR HAGERMAN, N. M.

FRED HARVEY.

settlements in the Vindhyan Hills, just south of the Ganges plain, grew rice. Agricultural communities appeared in the Yangzi (Chang) valley in China from 7000 to 5800 BCE, growing rice in the lower part of the valley and millet in the upper. The millet was domesticated; it has not been determined whether the rice was. Domesticated grains appear much later in Japan and Southeast Asia, but in the former case, at least, this is because of the importance of tubers, particularly taro.

The archaeological remains of these early communities are consistent with peasant/household organization: small unwalled hamlets or villages with houses either adjoining or separate, with storage pits or areas and, sometimes, ceremonial areas. There is typically little evidence of social stratification, but there are usually burial practices that suggest that the presence of one's ancestors implied entitlement to property. Taking into account ethnographic analogies, the configurations generally suggest a three-tier organization based on household, village, and various forms of kinship based on organization generally described as "tribal." Households, probably often connected to each other by kinship, farm their own plots of land with village agreement and cooperation. Groups of villages recognize themselves as affiliated and are mutually supportive but lack any formal overriding structure.

Large agriculture estates first appeared about 3000 BCE, along with city-states, bronze tools and weapons, large-scale irrigation, and the first forms of writing. It took the form of a hereditary military aristocracy and an at least partially hereditary priesthood, each of whom had specific governmental powers, and large estates set aside to support those powers. Sumerian records describe large-scale "grain grinding households" and "weaving households," associated with the "patrimonial sovereign" and the temple, producing textiles and foodstuffs (Gregoire 1992, 225). They used corvée labor (unpaid) drawn from the peasants, and the accounts show that it was the responsibility of the temple and palace to provide for their maintenance while they were working. The *Iliad* describes Agamemnon as maintaining a similar establishment,

but using the labor of slaves taken in war. Conflicts between city-states led to ever fewer and ever larger alliances, and by 600 BCE this process ended with the transition to imperial systems, in which the conquering power no longer sought the destruction of the opposed city-states but rather sought to subordinate them in a larger hierarchy of command and privilege.

The South Asian chronology was similar. The Indus Valley civilization, beginning around 2300 BCE, was a uniform and well-organized peasant society in which communities cooperated as part of a single system. It collapsed in about 1790 BCE, however, after an earthquake diverted one of the two main rivers it was built on upon. The population apparently dispersed into surrounding areas, particularly the Ganges plain, retaining agricultural continuity but losing social cohesiveness. In the Ganges valley, there were no fewer than sixteen walled cities by 600 BCE, engaging in mutual conflict comparable to that of the Mesopotamian city-states. By 321 BCE, this conflict had led to the establishments of the Mauryan Empire.

In China, walled cities appeared with China's first dynasty, the Xia, and continued into the succeeding Shang (1766–1045 BCE). Beneath the Shang monarch as a general hereditary overlord were large numbers of local rulers holding hereditary title, the first form of the Chinese distinction between the peasantry and the privileged gentry.

All of the imperial systems involved some mixture of elite extraction from peasant production side by side with large-scale enterprises under direct elite control, usually operated with unfree labor. The pattern persisted when the Asian empires were absorbed into European colonial systems. Before then, however, there was a development that was to have fundamental long-term implications for the way the different imperial systems evolved and interacted: the development of democratic constitutions at the city level.

The central aim of the Roman idea of a republic was to find a way to balance the interests of the peasant agriculture of the *plebes* with the elite agriculture of the *gentes* in a single political system that



guaranteed security for all. The solution was carried to the many Roman colonies in the territories that the republic conquered. It persisted in the form of their civic constitutions after the empire collapsed and evolved as these Roman enclaves evolved into towns of the various European nationalities we recognize today. But in the course of this evolution there was a radical realignment of interests. Where the original Roman senatorial fortunes were based on elite agriculture utilizing land taken in war, Renaissance fortunes were based on commerce. Their interests, therefore, no longer supported imperial power and opposed independent peasant farmers but the reverse.

Outside of what had been Roman Europe—in Russia, South Asia, Southeast Asia, China, and Japan—towns remained under the control of the imperial authorities, a situation that supported elite agriculture. The consequence was that the peasantry often had no way to avoid serfdom, and there was no one to serve as the kind of independent engine of technological innovation that led Europe first to expand trade, then to destroy feudalism, and finally to industrialize.

Although programs for land reform that began in the late eighteenth century were aimed at freeing peasant agriculture from accumulated elite impositions, these were not notably successful outside the West. The Communist revolutions in Russia and China replaced whatever autonomous peasant organization remained in their respective areas with collectivization as a new form of elite control, at significant cost in lives and productivity. Since World War II, however, colonial empires and the Soviet Union have been dissolved, and the newly emergent nations have tended toward agrarian reforms that favor peasant/household management. At the same time, the green revolution and related developments in agribusiness have made available to peasant/household production far more productive varieties of plants and animals, producing a “neo-technic” form of peasant agriculture integrating household management with large-scale organizations for economic and technical support that was formerly unavailable.

New World

In the New World one cereal crop stands out as far more important than all others: maize. The earliest known domesticated maize was found in a dry cave in the Tehuacán Valley of central Mexico and dates to about 5000 BCE. But it was far different from what the grain is now and far less productive and useful than the first domesticated Old World grains. Although clearly showing the hallmark of domestication—that the husk surrounded the entire ear and not the individual seeds—the ears were less than an inch long. Evidence of purposeful cultivation appeared about 1,500 years later in the same area, by which time maize was accompanied by beans, squash, chili, gourds, and amaranth. By 1500 BCE the Tehuacán maize was notably improved in both yield and nutritional quality, but even before then it had spread to other areas. Maize found in Bat Cave on the Colorado Plateau has been dated to about 2100 BCE. Small communities practicing irrigated agriculture appeared in the American Southwest by 300 BCE. Larger villages, or *pueblos*, with extensive canal systems and terraced fields appear about 500 CE, including those of the Anasazi, whose descendants appear to include the modern Hopi and the Hohokam whose canals can still be seen in the city of Phoenix. In eastern North America domestication of local plants (marsh elder, sunflower, chenopods, and cucurbits) began about 1500 BCE. Maize appeared about 600 CE, but since rainfall there is generally adequate without irrigation it did not dramatically influence the size of population concentrations.

Generally, agriculture north of the Valley of Mexico depended on peasant/household production. Based on known historic patterns together with archaeological evidence, it can be stated that the key organizational units were household, clan, and village. Land ownership rested mainly with clans. Households farmed on the basis of clan rights. Clan rights were in turn supported by local consensus among councils of clan representatives. A village ceremonial hierarchy, staffed on the basis of clan prerogatives, controlled the annual cycle of activities, which included key agricultural dates.



Nearby farmers' markets sell produce grown on small holdings—parcels of less than 50 acres, for lease or rent—north of Rio de Janeiro, Brazil.

The largest urban populations in the Mexican area were in the sites of original domestication, beginning with the Olmec civilization (1200 to about 400 BCE) and continuing through Teotihuacán, the Valley of Oaxaca, the Toltecs, the Chichemics, and the Aztecs. Although we know little about the Olmec organization, from Teotihuacán on it seems clear that in these states the relation between urban elite and the peasantry in the villages was not that between a populace and their specialized leaders and defenders but rather between conquerors and conquered, seemingly reflecting a takeover by a tribal group who converted themselves into a militaristic ruling class. The elites imposed heavy levies of produce, labor,

and eventually sacrificial victims and concentrated on building enormous ceremonial centers representative of an ideology intended to perpetuate their rule. They engaged in large-scale manufacture and apparently long-distance trade. They did little, however, for those they subjugated. There was, for example, no really large irrigation system in the region, such as could not have been built by the local communities alone. There was also nothing that could be construed as state support for private commerce, such as harbor facilities, inns, or even coinage. In this area the populations of the principal ceremonial centers rose and fell with the power of the group that built them, rather than persisting through a succession of rulers. Teotihuacán,

for example, had an estimated population of 200,000 in 500 CE but was abandoned forever around 750 CE, after a fire. The population of the villages, by contrast, seems to have built up fairly steadily.

The pattern in the northern Andes and the adjacent Pacific coast was similar. Beginning around 1200 BCE local communities practicing irrigated agriculture developed in river valleys in the mountains and on the coastal plains. Through local conflicts these built up into a succession of progressively larger and more militaristic states: the Chavin, the contemporaneous Moche and Nazca, the Chimú, and finally the Inca, based in Cuzco, who established their dominance in the 1470s. The Inca demanded two-thirds of all production and large corvees of labor to build huge road systems, storage facilities, and extraordinary mountain cities with terraced fields that could not possibly have paid for themselves in economic terms. Manufacture of cloth goods and utilitarian and craft objects was organized and standardized on a large scale. When groups under pressure from the Inca fled to avoid conquest, the Inca sent colonists to replace them. When Pizarro arrived in 1532 and captured the ruler, the system collapsed.

The Mayan civilization of the Yucatán peninsula was different only in that the Mayan elite seem to have been indigenous, and they actually did perform functions crucial to productivity. Mayan civilization appeared essentially complete in the archaeological record about 2000 BCE and persisted continuously until the middle of the fourteenth century, when it collapsed in a series of civil wars and the areas were depopulated. The population centers were temple and palace complexes surrounded by many small hamlets and large areas of a type of *chinampa* technology.

When Europeans arrived Old World agriculture arrived with them, but the pattern differed in English-speaking and Spanish-speaking areas. In the former most of the management was peasant/household, and because Old World peasant agriculture supported far higher population densities than New World peasant agriculture, it completely displaced the latter wherever the two systems competed for land.

In the Spanish-speaking areas, by contrast, the main Old World management pattern was elite and

the management system displaced was therefore its New World counterpart, leaving the peasant systems more or less as they were. The most extensive result was the “latifundia/minifundia” situation of large European-owned haciendas, mission estates, and other elite enterprises being laid over indigenous villages in which the villagers retained rights to carry on with their own subsistence agriculture but were also subject to demands to perform work for the larger unit.

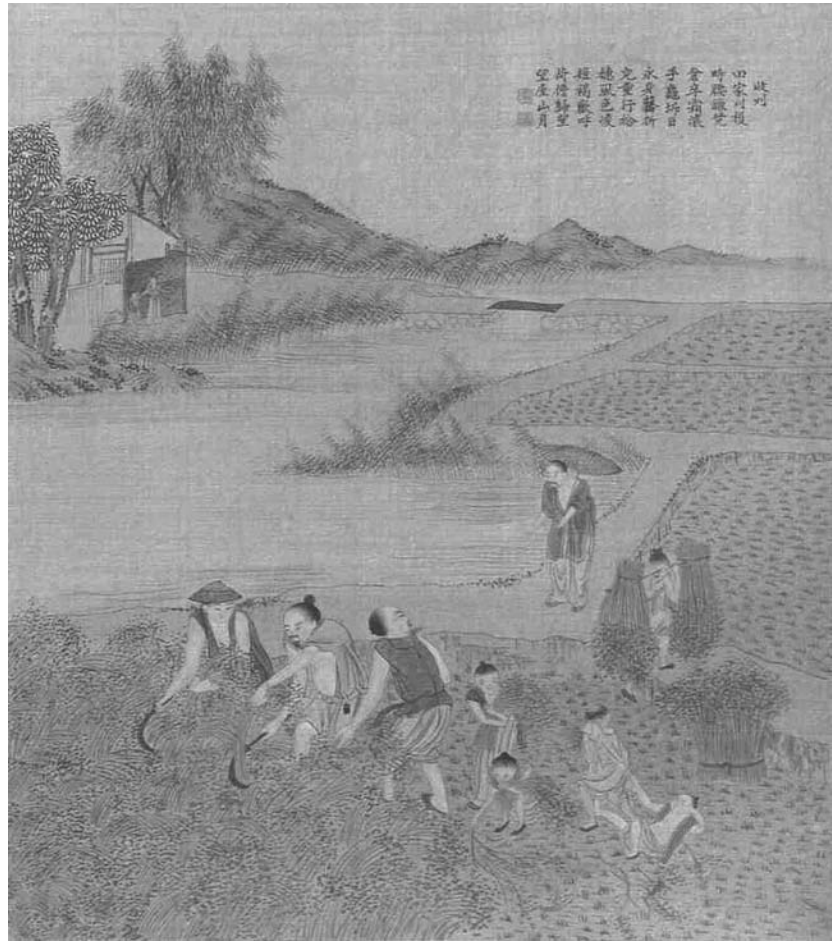
Old World agricultural ecologies are now clearly dominant in the New World as well as the Old. Yet New World technology persists in a wide range of environmental niches that Old World agriculture has not been adapted to: the Hopi mesas with eight inches of annual rainfall, Mexican milpas whose owners rely on traditional maize as a low-cost subsistence base, the high Andes, and the Amazon rain forest.

Industrial Agriculture

Industrial agriculture responds to the higher levels of per-capita output permitted by the industrial revolution. Ecologically, it breaks up the animal-plant interdependence at the farm level by separating animal production facilities from crop production, providing manures from industrial sources, and requiring farmers to produce to industrial specifications rather than consumer preferences. Organizationally, it makes farm management part of the system of factory production, replacing inter- and intra-household relationships and elite prerogatives with relations based on commercial contracts between farmers and industrial organizations. At the extreme, in areas such as California’s Imperial Valley, farmers are not landowners of any kind. Corporations own much of the land, and farmers are contractors who agree to produce the desired crop for delivery at a specific time. The farmer may own a core of farm machines, will hire whatever additional inputs are needed to produce the crop, and then move on to the next contract.

Industrial agriculture is highly specialized. The on-farm population of the United States is now 2.5 percent of the total population, but it is supported by people in rural and urban areas engaged in agricultural finance, storage, primary processing, government,

This illustration is from a Qing-dynasty version of *Gengzhi tu* (Pictures of Tilling and Weaving, first printed in 1210), a series of twenty-three scenes celebrating the development of farming technology in the Song dynasty (960–1179).



trade, transport, research, and education who make up not less than 20 percent of the total. When this entire group is taken as the unit for comparison from one society to another, it is easier to see how industrial agriculture arises and to avoid overstating the contrast between agrarian and industrial society.

Current Trends

The relative importance in the world agricultural economy of peasant/household and industrial production is now increasing while elite agriculture is in decline, but both modern peasant/household farming and industrial farming pose challenges. The green revolution's reliance on increased chemical fertilizers and pesticides has led to serious water, air, and even

oceanic pollution. The main hope for reducing such damage while still increasing yields rests with our increasing ability to modify plants by transferring genes from other species. But several types of destructive business practices associated with the firms that have pioneered the commercial development of this technology have exposed serious deficiencies in the way current law addresses the interests of the great mass of agriculturalists and agricultural stability. Efforts to correct them have been going forward very slowly.

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See also Cereal Grains; Tropical Gardening

The sun, with all those planets revolving around it and dependent on it, can still ripen a bunch of grapes as if it had nothing else in the universe to do. • **Galileo Galilei (1564–1642)**

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Akbar

(1542–1605)

RULER OF MUGHAL INDIA

Reigning for nearly fifty years, Akbar was one of the most important emperors of the Mughal Empire (1526–1857). Though his final years were spent trying to reconcile with a rebellious son, Akbar's intelligence and good judgment during his rule established the Mughal form of governance that would exist for the next three hundred years.

Abu-ul-Fath Jalal-ud-Din Muhammad Akbar was the greatest emperor of the South Asia-based Mughal Empire (1526–1857). Over the course of a forty-nine-year reign (1556–1605), Akbar proved himself a brilliant general, shrewd politician, able administrator, and generous patron of the arts. Akbar's energy and acumen placed the Mughal Empire on firm foundations and created a template for Mughal imperial governance that survived almost unchanged until the early eighteenth century.

Born in 1542 in Umarkot in Sind (in present-day southeastern Pakistan), Akbar was thirteen years old when he succeeded to the imperial throne following the premature death of his father, Humayun (1508–1556). Over the next four years, Akbar slowly extended his political control across Hindustan—the geographical and agrarian heartland of northern India. In the 1560s Akbar asserted his authority over the regions of Malwa (1561), Gondwana (1564), Rajasthan (1568–69), and Bundelkhand (1569) in central and northern India. In the following decades, his military campaigns extended imperial rule to Gujarat (1572–1573) in the west, Bihar and Bengal (1574–1576) in the east, Kabul (1585, in present-day Afghanistan), Kashmir (1586), Sind (1591), and Orissa (1592) in the south-east, Makran and Baluchistan (1594, in present-day

Pakistan), Kandahar (1595, in present-day Afghanistan), and Berar, Khandesh, and parts of Ahmadnagar (1595–1601) in the Deccan.

Akbar's expansionist military goals found a complement in equally vigorous attempts to co-opt or destroy alternative loci of power. Thus, between the early 1560s and 1581, Akbar succeeded in crushing a host of rivals within his own extended Mughal clan. Among them were the distantly related Mirzas (early 1560s) and his half-brother, Mirza Hakim (1581). Akbar also asserted his power over the fractious Mughal nobility in a multipronged process that unfolded between the 1560s and the 1590s. He broke the power of entrenched Turkish and Uzbek clans that served under his father; diversified the ranks of the Mughal nobility by recruiting from alternate groups such as Indian Muslims, (Hindu) Rajputs, Afghans, and Persians; fashioned elaborate rules of conduct emphasizing discipline and loyalty to the Mughal Empire; and emphasized both his divinely ordained right to rule and (more controversially) his own semi-divine status. The most important tool in Akbar's attempts to control the nobility, however, was the *mansabdari* system implemented after 1574–1575. Within the *mansabdari* system every nobleman was assigned a *mansab* (rank) that comprised two separate grades: the first denoted a nobleman's personal status and the second indicated his obligation to recruit and command a certain number of cavalry for imperial service. A *mansab* holder's financial needs were satisfied by the state through assignments of nonhereditary and nontransferable land grants that were rarely retained for more than three years.

Akbar targeted the powerful Islamic religious establishment after the 1570s. He did this in several



Emperor Akbar Hunting with Cheetahs (c. 1602), from the *Akbar Nama*, an account of the emperor's life.

moves. He reformed the system of state-issued land grants that provided the religious community with financial support; he asserted his own power of judgment over doctrinal decisions and diminished the importance of the head of the judiciary—who usually also served as chief spokesperson for the religious establishment—within the Mughal administrative framework. He exiled—and occasionally murdered—religious opponents and promoted the Sufi orders as a counterpoint to the orthodox religious establishment. He also evolved a theory of

universal kingship that obligated the emperor to favor all his subjects equally, regardless of their religious affiliation. Accordingly, Akbar ended the practice of forcibly converting non-Muslim prisoners of war to Islam and lifted various discriminatory taxes on Hindus; his most significant gesture came in 1579 when he abolished the poll tax, or *jizya*, on non-Muslims. Although the Islamic establishment generally opposed Akbar's religious initiatives, it was forced to accept the new dispensation after a massive religiopolitical revolt against Akbar was crushed in 1581. Akbar's reformist agenda largely survived until its reversal during the reign of his great-grandson, Aurangzeb (reigned 1658–1707).

After the 1560s Akbar moved to transform the *zamindars* (superior landholders) into a quasi-official service class. Control over the *zamindars* was important to Akbar as they gave him access to the agrarian wealth that paid for the Mughal imperial enterprise. The *zamindars* were notoriously refractory, and gaining their monies invariably involved time-consuming political negotiations, but Akbar crafted a new arrangement. He had the *zamindars* collect from the peasants the required revenue—which the state determined through a highly sophisticated system of measuring cultivated lands and calculating average prices and yields over the previous ten years—in return for which service the *zamindars* retained their claim over the land and between 10 and 25 percent of the revenue they collected. The presence of imperial revenue officials, accountants, and Mughal military contingents in the countryside provided a crucial check on the ability of *zamindars* to obstruct the will of the Mughal state.

Besides remarkable military and political achievements, Akbar's reign witnessed tremendous cultural and artistic accomplishments. Massive imperial patronage for Persian poetry, historical writing, and translations of Hindu scriptures into Persian were accompanied by the creation of new schools of art and architecture that successfully blended Persian and Indic styles, techniques, and themes. Some of the finest examples of Mughal miniature painting



The Mughal emperor Akbar was renowned for his intelligence and good judgment.

(like the illustrations for the *Akbarnama*) and architecture (seen in Akbar's short-lived imperial capital at Fatehpur Sikri) date to this period. The long-lasting influence of Mughal art and architecture is best attested by the continuing attempts in South Asia to emulate their fine sense of balance and proportion

long after the Mughal Empire had collapsed in the early 1700s.

Akbar's last years were clouded by the rebellion of his eldest and formerly favorite son, Salim, between 1599 and 1604. Ultimately, their partial reconciliation paved the way for the succession of Salim—as Emperor Jahangir—following Akbar's death in October 1605.

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See also Art—South Asia; Mughal Empire

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Aksum

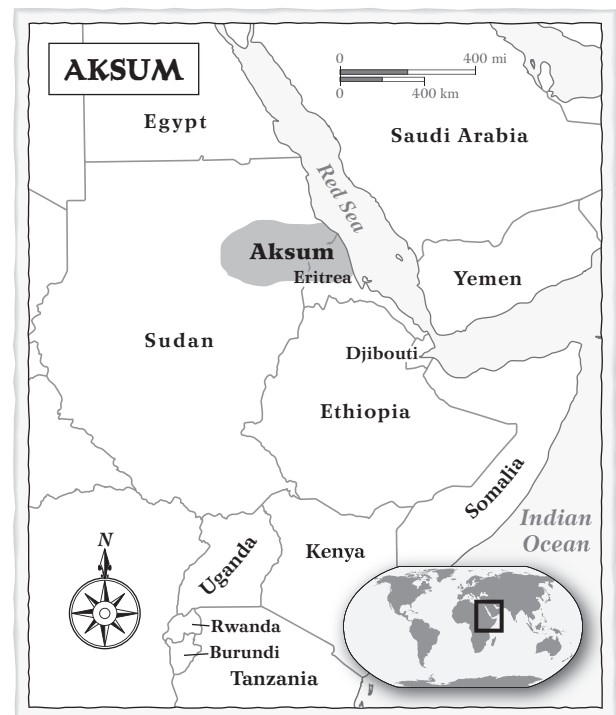
Aksum was the capital of an important kingdom in northeast Africa, including most of what is now Ethiopia, during the first millennium CE. With a mix of African, Mediterranean, and southern Arabian cultures, it was also the religious center of the earliest Christian state in Africa.

At the peak of its power in the fourth and fifth centuries, the African capital of Aksum ruled an empire that extended from Kush in the modern Republic of Sudan to Saba (Sheba) in Yemen and included much of contemporary Ethiopia, Eritrea, and Somalia. It is understandable, therefore, that the third-century Iranian religious leader Mani ranked Aksum with Rome, Persia, and China as one of the four great empires that divided the inhabited world among them.

Sources of Aksumite History

Although Ethiopia has an extensive literature, it provides little information about historical Aksum, emphasizing instead the legend that the kings of medieval and modern Ethiopia were the lineal descendants of Menelek (late tenth century BCE), the son of King Solomon and the Queen of Sheba, who reigned at Aksum until being exiled by usurpers in the early Middle Ages. The principal sources for the history of ancient Aksum, therefore, are Aksumite royal inscriptions and coins, references to Aksum in ancient classical and Christian literature, Sabaean inscriptions, and archaeology. The most important of these sources are the royal inscriptions, which Aksumite kings set up to commemorate their victories. These inscriptions are written in Greek and two Semitic languages—Geez

and Sabaean—and provide important information about Aksumite government and foreign relations. Aksum also issued the earliest native African coinage, which provides the only evidence for the existence of several Aksumite kings. In addition, classical and Christian literature frequently mentions Aksum because of the important role it played in late Roman and early Byzantine foreign policy and commerce in the Red Sea basin. After Aksum ceased to be the royal capital in the early Middle Ages, the city fell into ruin. Archaeological exploration of the ruins of Aksum, which began only in the twentieth century, is providing important evidence for the origins and early history of the city.





This is the largest standing monolith in Aksum's field of stelae, a site that includes some of the most spectacular monuments of the ancient world. Photo by John Watson.

Aksum and Its Neighbors

The early history of Aksum is obscure. Although there is archaeological evidence for incipient state formation in Ethiopia as early as the third millennium BCE, the origins of the Aksumite state date to the first half of the first millennium BCE, when Sabaeen colonists settled in Eritrea and northern Ethiopia. Sabaeen inscriptions and monumental architecture and sculpture attest to the emergence of several kingdoms in the region. Aksumite history proper begins when the rulers of one of these states, the Habasha (or Abyssinians), made Aksum their capital, probably in the first century BCE or the first half of the first century CE, when classical sources refer to the city as a royal capital and important trading center.

Geography was the key to Aksum's growth. Its location high on the Ethiopian plateau gave it ready access to the upper Nile Valley and its hinterlands on the west and to the Red Sea on the east and enabled Aksum to profit from its position astride the trade routes that linked Roman Egypt to northeastern Africa, southern Arabia, and especially India. By the late first century CE, Aksum was the chief commercial center of the southern Red Sea basin. The fact that its ruler at that time was literate in Greek combined with the presence of resident foreign traders in Aksumite territory attests to the existence already of close ties between Aksum and Roman Egypt. Aksumite power grew rapidly thereafter. By the mid-third century Aksum had displaced Kush as the principal supplier of African goods to Rome. With the conquest of Kush and the destruction of its capital, Meroë, by the

A stylized drawing from the 1800s of the ruins of an Aksum palace.



mid-fourth-century king Ezana, Aksumite territory reached its maximum extent. Ezana's conversion to Christianity also strengthened Aksum's ties to Rome, and for the next three centuries Aksum was Rome's principal ally in the struggle to prevent the expansion of Sasanid Persian influence in southern Arabia.

Government and Culture

Little is known about how the Aksumites governed their empire. Aksumite kings styled themselves "king of kings" and listed numerous peoples they claimed to rule in their inscriptions. Combined with references to various local rulers, this suggests that the king of Aksum and his family controlled the central government and military, while local royal families continued to rule the empire's various provinces. The frequent references to rebellions in the sources highlight the difficulties of controlling such a vast and decentralized state. By the early sixth century Aksum had lost its frontier provinces in the Nile Valley and South Arabia, although control of its Ethiopian and Eritrean core territories remained firm. Aksumite prosperity depended, however, on its key role in the lucrative Red Sea and Indian Ocean trade. The disruption of that trade by the Arab conquest of Egypt as well as Syria, Lebanon, Israel, Jordan, Iraq, and Iran sapped Aksum's prosperity and resulted in the gradual decline and ultimate abandonment of the city in the eighth century, when its last kings moved

their capital to a more defensible site in the interior of Ethiopia.

Aksum flourished for over half a millennium, producing a rich culture that created in the great stelae of Aksum some of the most spectacular monuments of the ancient world. Unfortunately, little is known about other aspects of Aksumite culture. Christianity has been the dominant religion of Ethiopia since the mid-fourth century. Conversion to Christianity was, however, followed by repudiation of many of the pagan traditions of Aksum. Thus, although the Geez translation of the Bible and the trilingual royal inscriptions clearly indicate that pre-Christian Aksum had a literary tradition, no Aksumite literature survives. (It is thought that in the abandonment of Aksum as the royal capital, the early manuscripts were lost.) Likewise, only a small amount of Aksumite art, predominantly architectural and numismatic, still exists.

Archaeological evidence indicates that Aksumite culture was a blend of African, Mediterranean, and southern Arabian traditions in which the southern Arabian strand dominated. Thus, the official language of Aksum was Geez, a Semitic language, which was written in an alphabetic script derived from South Arabia. Aksumite architecture followed South Arabian models and the kings of Aksum applied South Arabian hydraulic engineering techniques to ensure a reliable water supply for Aksum. The Aksumites also worshipped South Arabian gods. The most

important of these gods was Mahrem, the war god, who was reputed to be the ancestor of the kings and their helper in battle. Presumably, much Aksumite tradition survives in the Christian culture of medieval and modern Ethiopia, but at present such survivals cannot be identified with certainty.

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Alchemy

Often thought of simply as the precursor to chemistry, the study and practice of alchemy actually was part science / part philosophy, ranging into spiritual practices and techniques aimed at transforming the human consciousness. With the ancient goal of discovering life's secrets, alchemists studied the relationship between humanity and nature and the processes by which they were altered.

As it is most commonly understood, alchemy was a medieval scientific and philosophical endeavor with the central practical aim of finding a method for transforming base metals into gold. The primitive exercises in chemistry, however, were only the practical manifestations of a more ancient, quasireligious search for what might be termed the fountain of youth: the alchemist's ultimate quest was to uncover the secrets of matter and of life itself, so that it might be prolonged indefinitely.

Alchemy has long been of interest to historians of science, anthropologists, and a host of other scholars with an interest in the human religious impulse and the shaping of rituals aimed at the transformation of individuals and social groups. It is a topic perhaps best approached from four distinct avenues of inquiry: the first has to do with the etymology of the word; the second concerns its history; the third focuses on both the practice of alchemy and its ideological foundations; the fourth deals with alchemy as a global phenomenon with a set of universal precepts identifiable through cross-cultural comparison. The story of alchemy must, in sum, be understood from a highly nuanced standpoint that takes into account its

complex history and global diffusion. More than just a simple precursor of the modern science of chemistry, it is a way of thinking about the relationship of humanity and nature that emphasizes the importance of transformation in both. It also focuses on the role that human agency plays in mediating the processes by which substances—natural and human—are *transmuted*, or raised to a higher form.

The word *alchemy* enters the English language by way of a long philological journey that parallels, in some respects, the evolution of the practice in the Western world. Its semantic core comes from one of two possible Greek terms: the first, *chymeia*, is a noun denoting something poured or infused. The second, *chêmeia*, is a noun that refers specifically to the transformation of metallic substances. One or the other of these terms was likely the source for the Arabic term *al-kîmiyâ*, which comes into the lexicon of Medieval Latin as *alchimia*, into Old French as *alkemie*, and ultimately into English as *alchemy*.

This linguistic evolution provides some clues as to the origin and spread of the art in Greece, North Africa, and the Near East. Its first flowering is believed to have been in Egypt around 300 BCE, a time when scientific inquiry was in full bloom in the Hellenistic world. Some four and a half centuries later, Islamic scholars adopted the tradition and added to its cosmological conceptions, precepts, and practices; ultimately, it was their stewardship and mediation that enabled it to spread throughout Europe in the fourteenth century CE. Although considered of questionable merit at best by Christian ecclesiastical authorities, alchemy had become a vital part of the European intellectual ethos by the sixteenth and

seventeenth centuries. Many of history's well-known personalities, including, in England, Sir Walter Raleigh, Sir Isaac Newton, and King Charles II, have been favorably inclined toward its esoteric and exoteric dimensions.

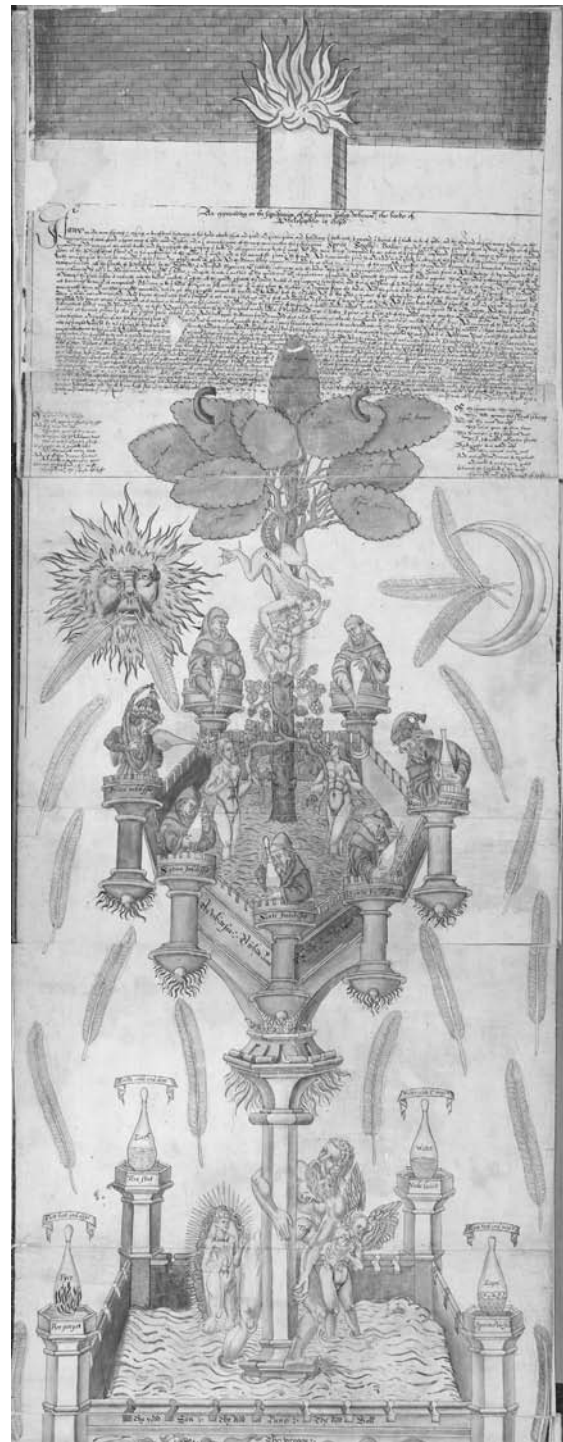
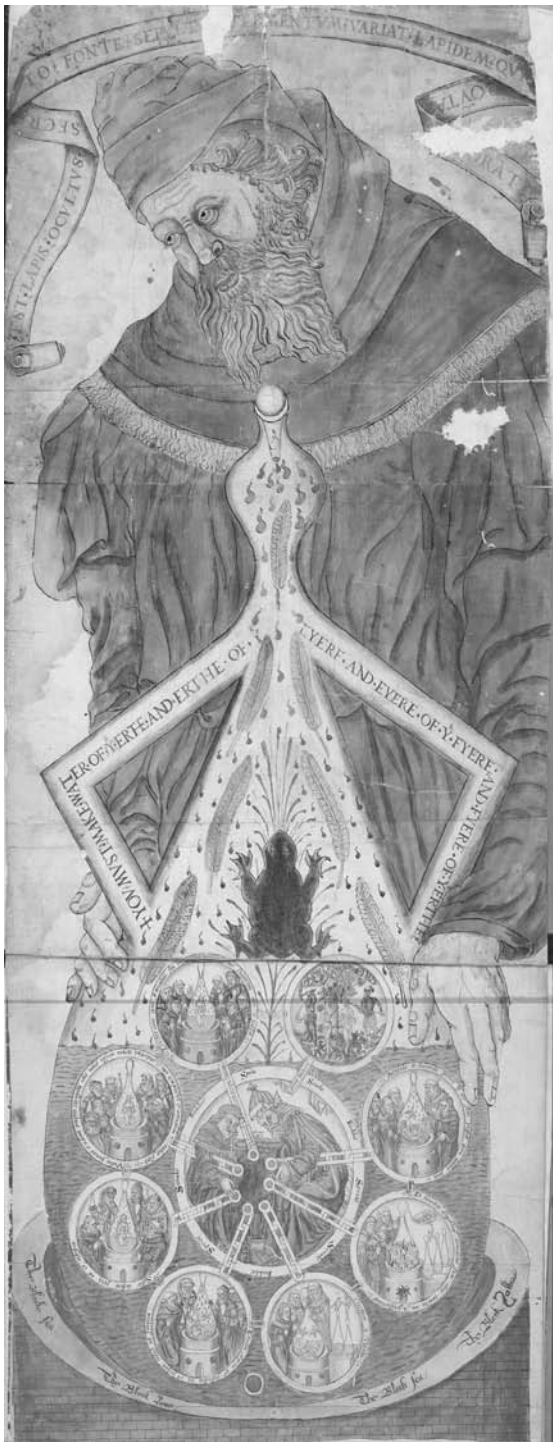
Moreover, the symbolism of alchemy has had a profound impact on the literary and artistic traditions of the West. Evidence of its influence can be seen in the work of William Shakespeare, John Milton, Johann von Goethe, John Dryden, Victor Hugo, and William Butler Yeats. Alchemical processes and symbolism have proved to be of enduring interest to scholars, artists, and literati down to the present era. In the twentieth century, they provided the brilliant psychologist Carl Jung with a template for understanding the processes associated with the maturation of the human psyche, and they continue to inform the work of many contemporary Jungian psychoanalysts. The alchemical quest for the so-called philosopher's stone (the substance that would change metal into gold, emblematic of that which is primal and in a state of eternal stasis) and elixir vitae (the potion that bestows boundless health and everlasting life) remains an inspiration to modern religious seekers, some of whom see in them guideposts for the human quest for communion with nature and the supernatural.

Alchemy can be described as a cosmological, philosophical, and metaphysical system that views the created world and everything in it as both vibrant and evolving. For the alchemist, the developmental processes that govern life are not easily discernible without the aid of special insight; it is the aim of alchemy to uncover and chart these hidden dynamics. By so doing, the alchemist would gain the knowledge that makes effective stewardship of the world possible. This includes not simply the ability to be a passive guardian, but the skills needed to engage in proactive intervention that can bring all that has not reached maturation to full flower. Thus, the alchemist is one who understands the processes of nature at an intimate level and has the capacity to use this knowledge to promote cosmic, environmental, social, and individual metamorphosis.

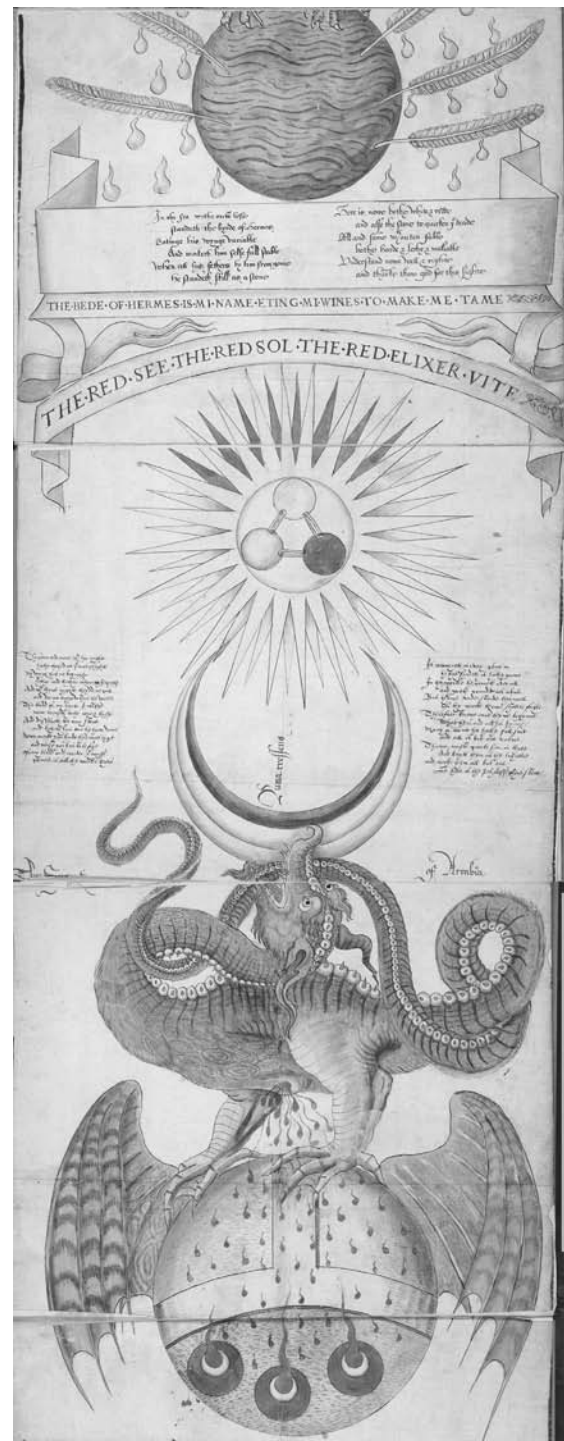
The stock-in-trade of alchemy consisted of observation, the gathering of empirical data, experimentation, and contemplation of the unseen verities that lay behind the phenomena that could be apprehended with the five human senses. Whether couched in terms adapted from Egyptian, Greco-Roman, Islamic, Indian, Daoist, or Christian lore, the overarching goal of alchemy appears to have been relatively uniform: that is, to uncover the forces governing unity, diversity, stasis, and flux in the world. Having mastered them, the alchemist would possess knowledge of the primal element from which all matter was created and the ability to distinguish between the mutable and the immutable, the finite and the infinite.

In time, the art would develop two distinct trajectories. The first was limited to the study of natural processes (chemistry). The second—consisting of alchemy and the allied hermetic disciplines—would be concerned primarily with the esoteric and spiritual dimensions of these processes. In the alchemical lore of the West, the practice is often characterized as a quest for the substance that has the power to perfect that which is incomplete and to make noble that which is base. This element or compound is superior to and prized above all others. It is known by many names, the most famous of which is the *philosopher's stone*. In order to produce it, base matter—whether animal, vegetable, or mineral—must be reduced to *materia prima* (the primary substance). This symbolic death is the precursor for the generation of a new element through coagulation. The process was understood to involve internal and external dimensions, in that an alteration in the alchemist's state of consciousness was expected to accompany the manipulation of physical elements.

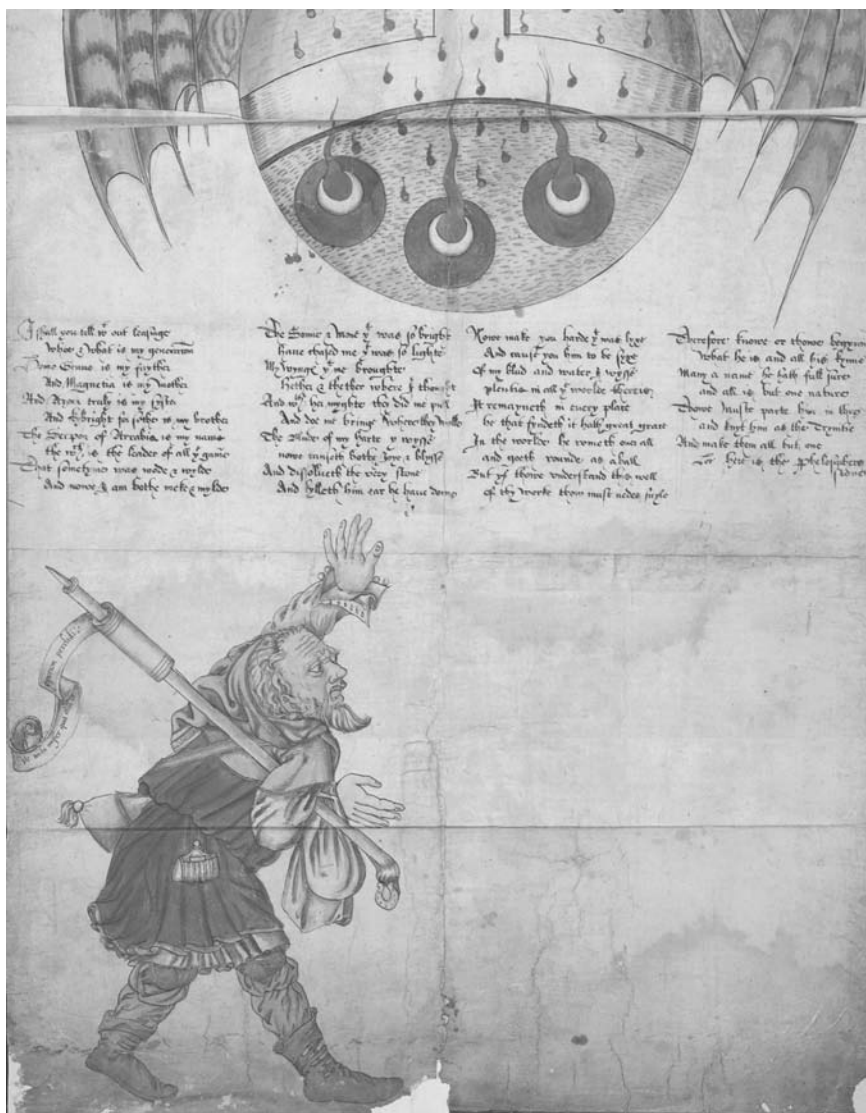
A more precise description of the aims, underlying philosophy, and processes associated with alchemy is difficult. Many of the texts produced by its practitioners are written in a manner that veils this information in allegories and symbols, a strategy intended to conceal its secrets from all save those who had been initiated into its mysteries. Some treatises appear to employ an alchemical language consisting of commonly shared and easily intelligible images; these



Emblematic Alchemy in English Verse, with an English version of the Visio Mystica of Arnold of Villanova, by George Ripley and Richard Carpenter. The images here are sections of the nineteen-foot-long “Ripley scroll,” an elaborate illustrated guide to alchemical signs and symbols (c. 1570). Beinecke Rare Book and Manuscript Library, Yale University.



Alchemy can be described as a cosmological, philosophical, and metaphysical system that views the created world and everything in it as both vibrant and evolving. Beinecke Rare Book and Manuscript Library, Yale University.



include the biblical flood (symbolizing dissolution), the pelican (symbolizing the instrument used to distill the *elixir vitae*), the phoenix (symbolizing rebirth), blood (symbolizing mercury as solvent), the egg (the matrix in which the philosopher's stone is made), and the philosophical tree (emblematic of growth and the alchemical process). Others writers appear to delight in confronting the reader with a confusing array of polyvalent symbols that defy precise classification

and bedevil would-be interpreters. Certain alchemical writings remain today virtually inscrutable to even the most highly trained specialists.

Certain universal elements have been identified in alchemical practice across cultures. One particularly attractive view of alchemy's origins was proposed in the mid-twentieth century by the historian of religions Mircea Eliade, who traced them to the rituals and specialized skills of early metallurgists. Eliade believed

*If by fire Of sooty coal th' empiric alchymist Can turn, or holds it possible to turn,
Metals of drossiest ore to perfect gold.* • John Milton (1608–1674)

that these artisans—along with agriculturalists and those who learned to transform moist clay into vessels, bricks, and works of art—were the first to develop an awareness of humanity's ability to make strategic interventions capable of altering the rhythms of nature. Through the use of fire, they could hasten the development of that which grew in the Earth, and shorten the interval of time needed to bring things to perfection.

Over time, this idea was applied to human beings and the cosmos, thereby giving rise to distinct alchemical traditions in Africa, the Near East, Asia, and Europe. The smith came to be seen as a powerful figure, one with specialized knowledge of how to forge tools that could generate life or cause death. Early metalworkers were also viewed as masters of esoteric knowledge related to architecture, song, poetry, dance, and healing. They were peerless makers whose secrets were jealously guarded and passed on through initiatory guilds. In sum, for Eliade the various alchemical traditions known to us from around the world owe their origin, at least in part, to the lore and praxis of the ancient smith.

The modern legacy of alchemy consists of experimental disciplines such as chemistry, as well as those applied sciences aimed at harnessing the Earth's natural, mineral, and other resources. It also consists of spiritual practices and techniques aimed at transforming the human consciousness. Thus, mystical religious traditions (Eastern and Western) as well as psychoanalytic theory are built upon older alchemical foundations. Recognition of the limited and nonrenewable state of many of our global

resources will likely fuel continuing interest in careful observation of the natural world and cultivation of a global awareness of human interconnectedness. By means of such endeavors, future generations may continue to build on and carry forward a rich alchemical heritage.

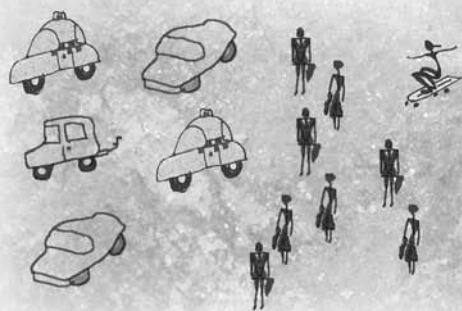
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See also Enlightenment, The; Scientific Revolution

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Alcoholic Beverages

It is probable that all human communities have used mind-altering substances in their rituals of hospitality and spiritual practices. Alcohol has for millennia been the preferred mind-altering substance of the Mediterranean world and Europe. In recent times its use has spread around the globe. Modern states find themselves torn between encouraging the use of alcohol to earn large tax revenues, and banning use due to medical and social problems caused by alcohol abuse.

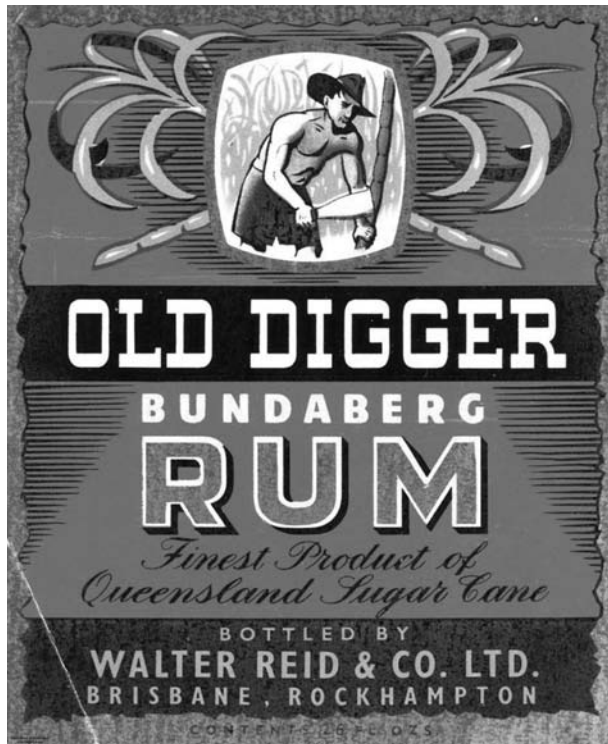
The word *alcohol* is derived from the Arabic *alkuhl*, which in turn derived from *kuhl*, one of whose meanings is “the essence” or “spirit” of something. To a chemist, the word *alcohol* describes a group of organic molecules with the general chemical formula $C_nH_{(2n+1)}OH$. To non-chemists, the word refers to a group of drinks with mind-altering properties, whose active ingredient (or essence) is ethanol, one of the simplest of all alcohols. The chemical formula for ethanol is CH_3CH_2OH .

Ethanol is most commonly produced as a byproduct of fermentation, a chemical reaction in which energy is released through the breakdown of glucose. But fermentation does not release all the energy locked up in sugars, and when alcohol is consumed, the human body can extract some of this remaining energy at the rate of just over 7 calories per gram of alcohol. This is why small amounts of alcohol can be energizing or relaxing. In larger quantities, above approximately .05 percent in the blood, alcohol acts as a depressant, affecting mainly the brain and nervous system, the way barbiturates and anesthetics do. Even in quite small quantities, alcohol can inhibit

normal thought processes, leading to a loss of social inhibitions that is often experienced as euphoria or release from stress. In extreme quantities, alcohol can incapacitate the nervous system entirely, leading to unconsciousness and even death. At blood level concentrations of more than .4 percent, most people will be anesthetized, and above .5 percent, they may stop breathing.

Earliest Alcoholic Drinks

For historians, it is the social, cultural, political, and economic aspects of alcohol use that are most important. Fermentation is a natural process and can occur whenever substances rich in sugars (including grapes, berries, grains, honey, bananas, palm sap, agave, and even mare’s milk) are left in warm, moist conditions and exposed to the air, so that airborne yeasts can come in contact with them and break them down into alcohol. It is tempting to suppose that alcoholic drinks first became important after the Neolithic revolution, when more and more humans became sedentary and farming communities began to store large quantities of grains or other starchy substances. The archaeologist Andrew Sherratt has argued that, partly on the basis of the spread of drinking vessels, alcoholic drinks in Eurasia first acquired social and cultural significance in Mesopotamia or the eastern Mediterranean from about the fourth millennium BCE, in areas where they could be made from grapes or dates. But alcoholic drinks were not confined to western Eurasia. Maize beers were used in Mesoamerica and Peru; and anthropological studies record their use in many small-scale farming societies in modern times.



Alcoholic beverages, like all mind-altering substances, can carry those who drink them to different psychic places.

Natural fermentation generates drinks of relatively low alcoholic content, anything from about 8 to 14 percent alcohol by volume for wines (grape alcohols) and from 2 to 8 percent for beers (grain alcohols). Concentrations higher than about 14 percent tend to kill yeast, so natural fermentation cannot proceed beyond this concentration. But most traditionally consumed alcoholic drinks probably contained much less alcohol. Weak alcoholic drinks such as kvass (a Russian rye beer) and koumiss (fermented mare's milk, drunk in Central Asia) usually contain no more than 2 percent alcohol, and were often used as a safer alternative to river or pond water, particularly if they had been boiled at some stage in their preparation. Very weak alcoholic drinks were nutritious and safe, and could be consumed by all members of society, including children.

Psychosocial Uses of Alcohol

With care, however, it was always possible to brew stronger drinks, and we have evidence of these from all alcohol-producing civilizations. Stronger alcoholic drinks had much more psychic power and created a complex of opportunities and problems that are common to all psychoactive substances. Alcoholic drinks seem to have been widely used in rituals of hospitality. But their importance went beyond mere hospitality for, like all mind-altering substances, they could transport those who drank them to different psychic places, adding new dimensions to the experience of existence. It is likely that in many alcohol-using societies, such experiences have been conceived of in spiritual or religious terms. The psychologist Carl Jung (1875–1961) once described the craving for alcohol as “the equivalent, on a low level, of the spiritual thirst of our being for wholeness; expressed in medieval language: the union with God” (Jung 1975, 2:623–624). The psychic power of this search was such that all societies have sought to control the use of psychoactive substances. In the case of shamans, the control takes the form of rigorous training in the use of such substances to enable psychic journeys. In village communities in alcohol-using societies, it has taken the form of communal rituals designed to regulate intoxication. The historian George Duby has argued that in the European Middle Ages, drinking festivals aimed “at one and the same time to half-open the gates of the unknowable and to reinforce group cohesion for mutual protection” (Duby 1974, 53). And the pharmacologist and medical historian C. D. Leake (in Lucia 1963, 6) argued that

Generally, the use of [alcoholic drinks], which were thought to have magical powers, became socially and ritually controlled. Under these circumstances, whatever excesses might occur were indulged in by all the group, so that there remained a sense of social unity. The ritualistic use was often part of the organized religious services which tended to bring the group together in a common experience and to relate the



group more satisfactorily to its environment and its members to each other.

The psychic power of alcoholic drinks and the ease with which they could be produced ensured that alcoholic drinks became part of the very texture of rural life in all areas where they were produced. They played important roles in ritual and social occasions, they sealed commercial transactions, and they were used to treat the sick and anesthetize those in pain or to encourage those entering battle. Particularly in ritual contexts, their use often became obligatory; even those who preferred to do without them risked becoming social outcasts if they refused to drink at major ritual occasions such as religious festivals or marriages and funerals. However, in urban areas, where individuals were less subject to the control of their families, individuals were more likely to drink at will, so it is perhaps not surprising that the earliest evidence of individual rather than collective drunkenness seems to come from cities in ancient Egypt and Mesopotamia.

Increasing Potency: Distilled Alcoholic Drinks

Distillation makes it possible to raise the concentration of alcohol, creating alcoholic drinks of greater psychic and social potency. Distillation exploits the fact that alcohol has lower boiling and freezing temperatures than water (respectively 78.5°C and -114.1°C). In extremely cold climates, it is possible to distill by leaving fermented drinks out in the cold. Because water freezes before alcohol, the concentration of alcohol can be increased simply by throwing away the ice and repeating the process several times. However, most distillation exploits the different boiling points of water and alcohol. Fermented drinks are boiled and the steam that results is condensed in a separate container. Because alcohol boils sooner than water, the condensed liquid has a higher concentration of alcohol than the original liquid; each new condensation raises the concentration of alcohol. Though rudimentary forms of distillation may have existed earlier, the first pot stills were apparently used by Islamic

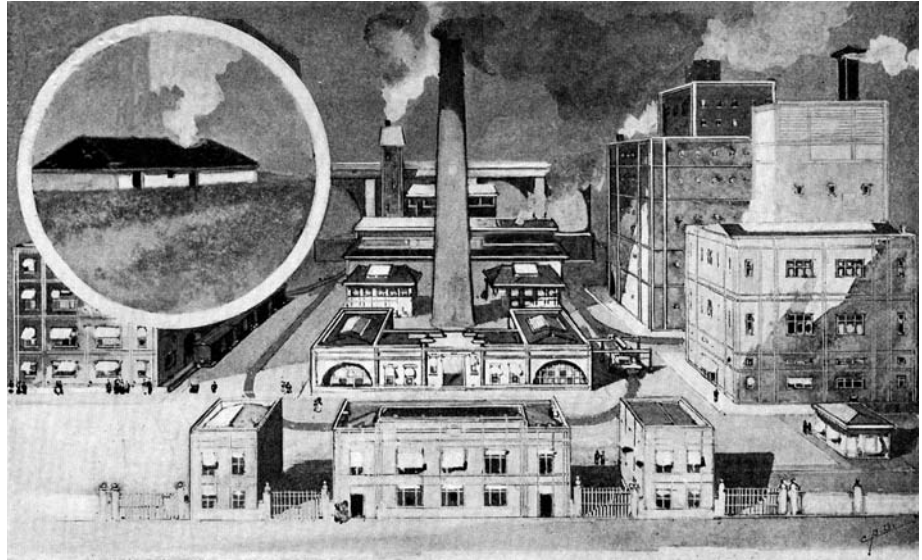
alchemists about 1,000 years ago to distill grape wine, which is why some of the technical vocabulary associated with alcohol is of Arabic origin. Alchemists originally treated distilled wine as a medicine, but from the later Middle Ages it began to be used for recreational purposes in parts of western Europe. Modern industrial distillation is based on techniques of fractional distillation, in which the alcohol-bearing vapors rise through a series of plates, each containing already-condensed vapor. At each plate, some of the water in the rising vapor condenses, while some of the alcohol in the condensed liquid vaporizes. The effect is similar to multiple redistillations.

Technically, distillation is significantly more complex than fermentation, and it needs to be handled carefully if the resultant drink is not to contain significant quantities of poisonous byproducts. This is why, though wines, beers, and meads were produced in many peasant households, distilled drinks generally required specialist production and were more commonly traded through commercial networks. Because they were harder to produce at home, it was also easier to tax distilled drinks once consumers acquired a taste for them. And their superior potency ensured that, once introduced to them, consumers usually took to distilled drinks with great enthusiasm.

Psychoactive Revolution

The production and spread of distilled liquors in recent centuries count as a significant part of a global change that the historian David Courtwright has described as the “psychoactive revolution”—the sudden availability through commercial channels of an unprecedented variety and quantity of mind-altering substances. “People everywhere have acquired progressively more, and more potent, means of altering their ordinary waking consciousness. One of the signal events of world history, this development had its roots in the transoceanic commerce and empire building of the modern period—that is, the years from about 1500 to 1789” (Courtwright 2000, 2). As more and more rural dwellers migrated temporarily or permanently to the towns and became more and

This illustration of an early-twentieth-century industrialized distilling plant is inset with a picture of a traditional, rural Irish counterpart.



more entangled in the commercial networks of the wider world, and as alcoholic drinks became more varied and more available, the controls on consumption that had operated in most communities began to break down. Often, too, mind-altering substances, including alcohol, were introduced to communities with no experience of their use, often with devastating results. From North America to Siberia and the Pacific Islands, European traders found that alcoholic drinks had peculiar potency in societies unused to them and rapidly created new forms of addiction and dependence. Though their use often proved extremely destructive to traditional cultural norms, merchants and officials continued to supply them because they provided such powerful commercial and political leverage. Alcohol played as potent a role as guns and diseases in the building of European colonial empires.

Because of alcohol's damaging effects, states have played an increasingly important role in its regulation. Yet states have also earned significant revenues from the increasing trade in alcohol and other psychoactive substances. And it is this deeply ambiguous relationship between modern states and the trade in alcoholic drinks that explains why most modern states have been torn between prohibition (in vain attempts to maintain public

order) and the sale of alcoholic drinks (in the hope of controlling consumption while simultaneously generating significant revenues). Indeed, states became addicts as well as individuals. In Russia in the nineteenth century, close to 40 percent of government revenues came from the sale of alcoholic drinks, which was enough to pay most of the expenses of the army that made Russia a great power. In nineteenth-century England, alcohol generated a similar share of government revenue. Indeed, most modern states have depended on revenues from mind-altering substances of some kind, so it is no wonder that no modern state has succeeded in entirely banning their consumption. On the contrary, alcoholic drinks have now spread around the entire world, so that today they may be the most widely traded and most widely consumed of all mind-altering substances.

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See also *Drugs, Psychoactive*

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The wine urges me on, the bewitching wine, which sets even a wise man to singing and to laughing gently and rouses him up to dance and brings forth words which were better unspoken. • **Homer (ninth–eighth? century BCE)**

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Alexander the Great

(356–323 BCE)

KING OF MACEDONIA

The structure of culture and politics in part of Asia was forever changed by the impact of Alexander, king of Macedon in the fourth century BCE. Ruling for over a decade, he succeeded in many conquests that resulted in the end of the Persian Empire and the establishment of a multistate system. Though he is called “the Great,” historians often debate whether Alexander’s impact was positive or negative.

The thirteen-year reign (336–323 BCE) of Alexander III of Macedon fundamentally changed the political and cultural structure of ancient southwestern Asia. The Persian Empire, which had ruled the vast region from the Mediterranean to the borders of India, disappeared in 330 BCE as the result of

Alexander’s conquests, replaced by a new multistate system dominated by Macedonians and Greeks. The region’s center of gravity shifted westward from its ancient focus in Mesopotamia and southwestern Iran to the shores of the Mediterranean and Greece, and Greek culture replaced the ancient cuneiform tradition as the culture of its elite. At the same time diplomatic and commercial ties were established that eventually linked together the civilizations from Europe to China.

Alexander was born in 356 BCE, the first child of Philip II (360–336 BCE) of Macedon and his principal wife, Olympias. He was raised in keeping with his status as Philip’s heir, being educated by the philosopher Aristotle and trained by his father for his role as king and the commander of the Macedonian army.

The Alexander Mosaic (c. 100 BCE), originally a floor mosaic in Pompeii’s House of the Faun, depicts The Battle of Issus, part of Alexander’s famed “Greek Crusade.”



A detail of the *Alexander Mosaic* shows “the Great” leader, whose indelible impact—whether positive or negative—is still a subject of debate among historians.



When he succeeded his father as king in 336 BCE, Alexander was ready to continue the invasion of the Persian Empire, which had been begun by Philip. Alexander devoted the first two years of his reign to consolidating his hold on power. Rapid campaigns in the northern Balkans and Greece headed off rebellions by Macedon's Greek and non-Greek subjects and secured his appointment as *hegemon* (“leader”) of the Corinthian League and commander in the war against Persia. With his power base secure, Alexander crossed into Asia in spring 334 BCE at the head of an army of approximately 35,000 men.

During the next decade Alexander campaigned as far as western India before being compelled by a mutiny of his army to return to the west, where he died in Babylon in June 323 BCE. This remarkable campaign divides into three distinct phases. The first phase, which lasted from 334 BCE to 330 BCE, is known as the “Greek Crusade” and was marked by the great set battles of Granicus, Issus, and Gaugamela and climaxed with the destruction of the Persian capital of Persepolis and the assassination of the Persian king Darius III by his own officers. The second phase, which lasted from 330 BCE to 327 BCE, saw Alexander

adopt various aspects of Persian royal ceremonial and practice despite Macedonian and Greek opposition in order to attract Iranian support in the face of fierce guerrilla resistance in Central Asia. The third and final phase of the campaign began with the two years that Alexander spent in India and ended with his disastrous return to the west through Baluchistan and his death in Babylon, while planning further campaigns, beginning with an invasion of Arabia.

Historians' interpretations of Alexander's spectacular reign vary widely for understandable reasons. There are few primary sources for the period. Of the many accounts written by his contemporaries and the numerous documents issued by his government such as existed, only fragments and a few inscriptions survive. Therefore, historians depend on five Greek and Latin biographies of Alexander written between the mid-first century BCE and the second century CE for their information. Also lacking are sources that reflect the perspectives of the Persians and the other peoples Alexander encountered. As a result, while the outline of his career is clear, widely divergent theories have been proposed concerning Alexander's ultimate goals, ranging from the popular

True contentment depends not upon what we have; a tub was large enough for Diogenes, but a world was too little for Alexander. • **Charles Caleb Colton (1780–1832)**

pre–World War II belief that he wished to realize the philosophical dream of the unity of all mankind to the contemporary view that Alexander was a vicious conqueror with no goals beyond glory and personal aggrandizement.

The sources are only part of the problem, however. Equally important is the fact that Alexander died before he could develop a final plan for the governing of his empire. Instead, he improvised various solutions to the administrative problems that arose during the course of his campaigns. Thus, while he became more and more autocratic, which was encouraged by his belief in his semidivine status as the “Son of Ammon,” and he continued his efforts to supplement the limited Macedonian and Greek manpower available to him by encouraging collaboration by native elites, neither development had been institutionalized at the time of his death. Paradoxically, therefore, Alexander’s principal contribution to history was essentially negative: he destroyed the Persian Empire and with it the state system that had dominated ancient southwestern Asia

for two centuries. It would be left to his successors to devise a new state system to replace it.

Stanley M. BURSTEIN

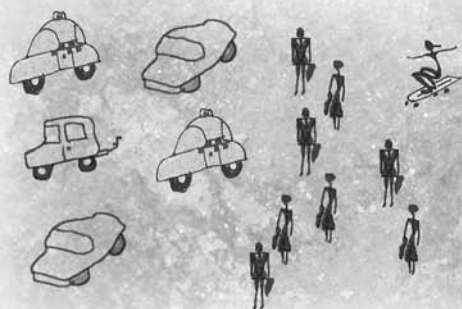
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See also Macedonian Empire

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al-Khwarizmi

(c. 780–c. 850)

ARAB MATHEMATICIAN

Sometimes called the “father of algebra,” al-Khwarizmi dedicated his life to the research of mathematics. His in-depth study of numbers would eventually result in the present-day use of Arabic numbers in all mathematical applications, from algebra and geometry to the production of maps.

Al-Khwarizmi was a Muslim astronomer, geographer, and, most importantly, a mathematician. He was born in the Persian town of Khiva, in what is now Uzbekistan. His full name was Abu Abdullah Muhammad ibn Musa al-Khwarizmi. His family name was the term *algorithm*, and one of his books, *Hisab al-Jabr wal-muqabalah*, was the origin of the word *algebra*.

In his youth, al-Khwarizmi’s parents moved from Persia to Iraq and settled in the bustling city of Baghdad. In Baghdad, young al-Khwarizmi was attracted to the Bait al-Hikmah (House of Wisdom), an institution where literary scholars, philosophers, natural scientists, mathematicians, and medical doctors from around the region worked on ancient Greek texts. Later, Muslim scholars passed this wonderful body of knowledge to Europe, where it sparked the Renaissance. Al-Mamun (786–833), the caliph of Baghdad, who had founded the House of Wisdom in 830, patronized its scientific research. Al-Khwarizmi dedicated some of his works to the caliph in gratitude for the caliph’s having made available to scholars the first and best library since that of Alexandria.

Al-Khwarizmi investigated numbers far more deeply than did anyone in the European medieval world. His study of structures, surfaces, pyramids,



A page from al-Khwarizmi’s treatise on algebra, *The Compendious Book on the Calculation by Completion and Balancing* (c. 240).

cones, circles, and triangles took mathematics and algebra to new heights. It was al-Khwarizmi who revolutionized the use of math in arithmetic, algebra,

Let no one enter who does not know geometry. • **Inscription on Plato's door (c. 427–c. 347 BCE)**

and geometry. Interestingly, his original and innovative use of advanced math was used to help solve the problems occasioned by the complex Islamic laws of inheritance and divisions of estates and assets among brothers and sisters at the death of their parents.

This “father” of algebra and algorithms conducted lifelong research on the Hindu numerical system and the Hebrew calendar, and he studied ancient Egyptian sundials and Syrian texts. He derived new concepts and consolidated others relating to Arabic numerals and zero as well as to the decimal system. The world's first correct astronomical tables and explanation of the movements of the sun, the moon, and the five planets closest to Earth were the works of al-Khwarizmi. He also had a superior sense of world geography and wrote a book on the topic, *Surat al-Arz* (Shape of the Earth). At the suggestion of al-Mamun, he oversaw a team of sixty-nine and produced the first correct world map in world history. This too was done to solve a practical problem: Muslims around the world needed to know what direction to face (namely, toward the Ka'ba in the city of Mecca, Saudi Arabia) to offer their daily obligatory five prayers. Thanks to the

efforts of al-Khwarizmi and others, this problem was solved by finding the shortest arc of the great circle anywhere on the globe between a person's location and Mecca.

The world stands in gratitude to al-Khwarizmi for the use of Arabic numbers, decimals, and the value of zero in math, algebra, geometry, and trigonometry, and for the production of correct world maps.

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See also Islamic World

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Although al-Razi (c. 865–c. 925 CE) was an Islamic philosopher whose unorthodox ideas earned little credence among Muslims of his day, his free thinking and, most importantly, his role as a physician made a significant contribution to world history. His work, and especially his translations, provided an important connection between ancient practices and physicians during medieval times, and in the development of current-day Western medicine.

Abu Bakr Muhammad ibn Zakariya' al-Razi, also known to Europeans by his Latinized name of Rhazes, was one of the most influential Islamic physicians of the pre-modern era. Razi's contributions have been favorably compared to those of such early physicians and scientists as Hippocrates (c. 460–c. 377 BCE), Galen (129–c. 199 CE), Ibn Sina (980–1037), and Vesalius (1514–1564). Razi's works were widely used throughout medieval and Renaissance Europe. His translations and original works provided a critical link among ancient Greek, Persian, and Indian medical traditions and the later works of medieval and Renaissance physicians in Europe. In addition to his importance in the field of medicine, Razi's fame also stems from his work as an alchemist and free-thinking philosopher.

Razi was born in the Persian city of al-Rayy (modern Shahr-e-Rey), near present-day Tehran, Iran. As a young man he cultivated talents in music, philosophy, and alchemy; however, as he grew older, he turned his attention to the study of medicine. During his distinguished career as a physician, he directed hospitals in both Rayy and Baghdad. He

also enjoyed royal patronage, traveling extensively in the service of the Samanid courts throughout Khorasan and Transoxiana (a Persian-Islamic dynasty in Central Asia, vassal of the Abbasids, from around 819 to 1005). Yet, far from leading the life of an idle courtier, Razi was praised as a tireless and compassionate clinician and teacher as well as a prolific writer.

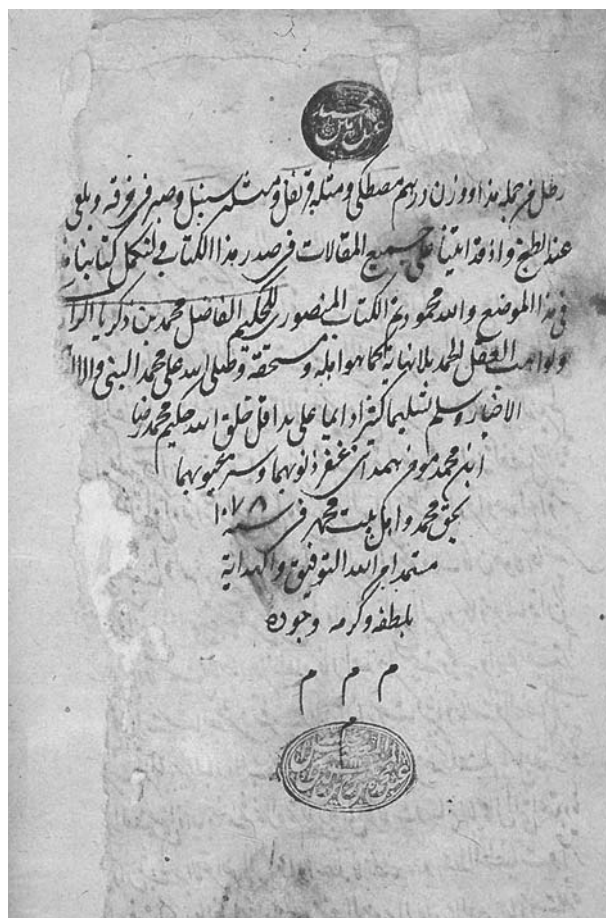
Razi's most famous medical works are the *Kitab al-Hawi* (*Liber Continens*; The Comprehensive Book of Medicine) and the *Kitab al-Mansuri* (*Liber Almansoris*; The Book of Medicine for Mansur). The *Kitab al-Hawi*, a twenty-three-volume encyclopedia posthumously prepared by Razi's pupils, contains extracts from Greek, Indian, and Arabic sources on pathology, therapy, and pharmacology as well as records from his own clinical experience. The *Kitab al-Hawi* was translated into Latin in 1279 by Faraj ibn Salim, a Sicilian-Jewish physician employed by Charles I of Anjou. Thereafter, it became widely used throughout Europe as an encyclopedia and teaching manual. Similarly, the *Kitab al-Mansuri* became highly prized in Europe after its translation into Latin as the *Almansoris* by Gerard of Cremona (d. 1187). During the Renaissance, its ninth chapter, *Liber Nonus*, was often circulated by itself or with commentaries by leading physicians such as Vesalius. Another of Razi's most influential treatises, the *Kitab fi al-Jadari wa al-Hasbah* (Treatise on Smallpox and Measles), was the first to distinguish smallpox from measles. He also wrote treatises on kidney and bladder stones, diabetes, childhood diseases, allergies, psychosomatic medicine, and medical ethics.

Razi's works are characteristic of medieval Islamic medicine in that they are based primarily upon the

Greek scholarship of Hippocrates and especially that of Galen. However, despite his immense respect for the Galenic tradition, Razi claimed that his own clinical experience exceeded Galen's. Razi noted that his clinical methodology of studying cases contradicted Galen's description of fevers, which Razi believed to have been inspired by philosophical dogma. He even called into question the Galenic system of balancing the body's "humors," or elements. Accordingly, Razi—and indeed other Islamic physicians of the period—should not be seen as mere preservers of Greek medical thought during Europe's so-called Dark Ages, but rather as innovators in their own right.

Just as Razi relied on his clinical experiences and logic in the field of medicine, his empirical thinking led him to deny occultist and symbolic significance in his study of alchemy. Because of this, he may be seen as having transformed the study of alchemy into an embryonic form of chemistry. Throughout his works there are descriptions and classifications of mineral substances, chemical processes, and explanations of experimentation that meet the standards of empirical investigation in modern chemistry. While Razi's famous *Sirr al-Asrar* (Secret of Secrets) has generally been classified as alchemy, such a classification fails to take into account Razi's philosophical preferences—evident in *Sirr al-Asrar*—for reason, science, and observable reality over prophecy, revelation, and spiritual symbolism.

Razi's philosophical positions regarding reason and revealed religion were among the most heretical in the medieval Islamic world. He believed that man's intellect or reason was a divine gift that made revelation and prophecy superfluous. Razi praised humanity's intellectual potential, but violently attacked revealed religion, detailing how revealed religions and prophecies contradicted one another, were hostile toward scientific and philosophical progress, and were ultimately sources of conflict. He showed an obvious preference for Greek philosophy over the wisdom offered by the Quran. Thus, unlike Islamic Aristotelians, Razi denied the possibility of reconciling philosophy and religion.



The colophon (in Arabic) of al-Razi's *Book of Medicine*. The work drew on the scholarship of Hippocrates and Galen but was innovative in its own right.

As a result of Razi's heretical views, his contributions to philosophy in the Islamic world have been marginalized. Moreover, because his ideas never gained a large audience in the Islamic world, their impact on his small audience of Christian readers was limited at best. Yet, from a world historical perspective, Razi's free-thinking is still relevant. It challenges scholars to alter the monolithic picture of Islamic civilization that is often presented in Western scholarship. Similarly, Razi's important role in the development of Western medical practice indicates the necessity of expanding the history of



science and medicine beyond the study of modern Europe to include more Islamic contributions, especially during the Middle Ages, an era in which Islamic rather than European scholarship reigned supreme.

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See also Islamic World

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Amazonia

The world's largest tropical rain forest, the Amazon, has often been referred to as a "false paradise" inhospitable to human societies. New research revealing evidence about landscape manipulation and soils, however, suggests that various ancient societies practiced relatively intensive forms of agriculture. Thus, historians can now study the variety and complexity of human adaptation to both the challenges and the potential of the Amazon basin proper and the surrounding regions.

As the largest tropical rain forest on the planet, Amazonia holds a unique place in world history. A vast region that extends through present-day Brazil and seven other South American nations (Colombia, Ecuador, French Guiana, Guyana, Peru, Surinam, and Venezuela) it symbolically stands for the dominance of nature over humans and as a source of still-unknown plants and animals. But in fact Amazonia has been an intensively managed, human-made environment for many hundreds of years.

Early Settlement

Human occupation of Amazonia is much more ancient and more extensive than had once been assumed. By about 9000 BCE two lithic (using stone tools) traditions had become widespread in Amazonia as evidenced by stone implements, including arrowheads and edged cutting tools for processing animal game and grindstones for preparing maize, found by archaeologists. By 5000 BCE two more practices had emerged. First, there is evidence that by 2000 BCE groups on the Atlantic coast were using domesticated

plants, with maize use emerging in the Minas Gerais region by about 1500 BCE. Second, current research indicates that occupation of the lower Amazon began around 10,000 BCE, and there has been a dramatic discovery of ceramics from around 6000 BCE in a site along the lower Amazon, making this the earliest example of pottery in the Americas.

Close examination of this early period in northeastern Amazonia, along the Guiana coastal region, illustrates the close relationship between agricultural adaptation to a complex environment and a resultant development of appropriate lithic technologies. Transitions from gathering to the horticulture of certain plants, particularly the *ite* palm (*Mauritia flexuosa*) and the *mora* tree (*Mora excelsa*), as well as other utilitarian species, are directly reflected in the development of the lithic repertoire. Although these subsistence techniques are theorized as being ancestral to the emergence of tropical forest horticulture in the region, the developmental analogies are probably stronger with the *sambaqui* (shell-mound) peoples of coastal Brazil than with the occupants of the tropical forests because their horticultural and foraging repertoires are quite distinct. This suggests that progressive adaptation to the complexities of the Amazonian environment was a process repeated across the whole region.

Various ancient societies also practiced relatively intensive forms of agriculture, evidenced by widespread landscape modification throughout Amazonia. In fact, it has been argued that the landscape of Amazonia, as it is seen today and as it has been for the last 350 years or so, is the historical product of a return to a semi-wilderness as a consequence of the colonial depopulation of the native inhabitants. Moreover, the current evidence for the existence of



“Submerged forest in the Amazon River.” From the 1875 edition of *The Amazon and Madeira Rivers: Sketches and Descriptions from the Note-book of an Explorer*, by Franz Keller.

prehistoric roads and causeways in both the llanos (prairies) of Bolivia, Colombia, and Venezuela and in the heart of Amazonia itself indicates that these landscape modifications were related to the presence of large and complex societies.

For example, recently investigated systems of extensive ridged fields and agricultural mounds along the Atlantic coast of the Guianas underline how limited knowledge of the “tropical forest” region really is. The presence of complex agricultural techniques to deal with the low-lying, swampy conditions in this region, as well as the use of intensive farming practices from at least 700 CE, shows how complex adaptations were made to the variety of Amazonian environments. Thus archaeological evidence also fits well with the historical sources that report both significant population and a complex agricultural repertoire among the indigenous groups.

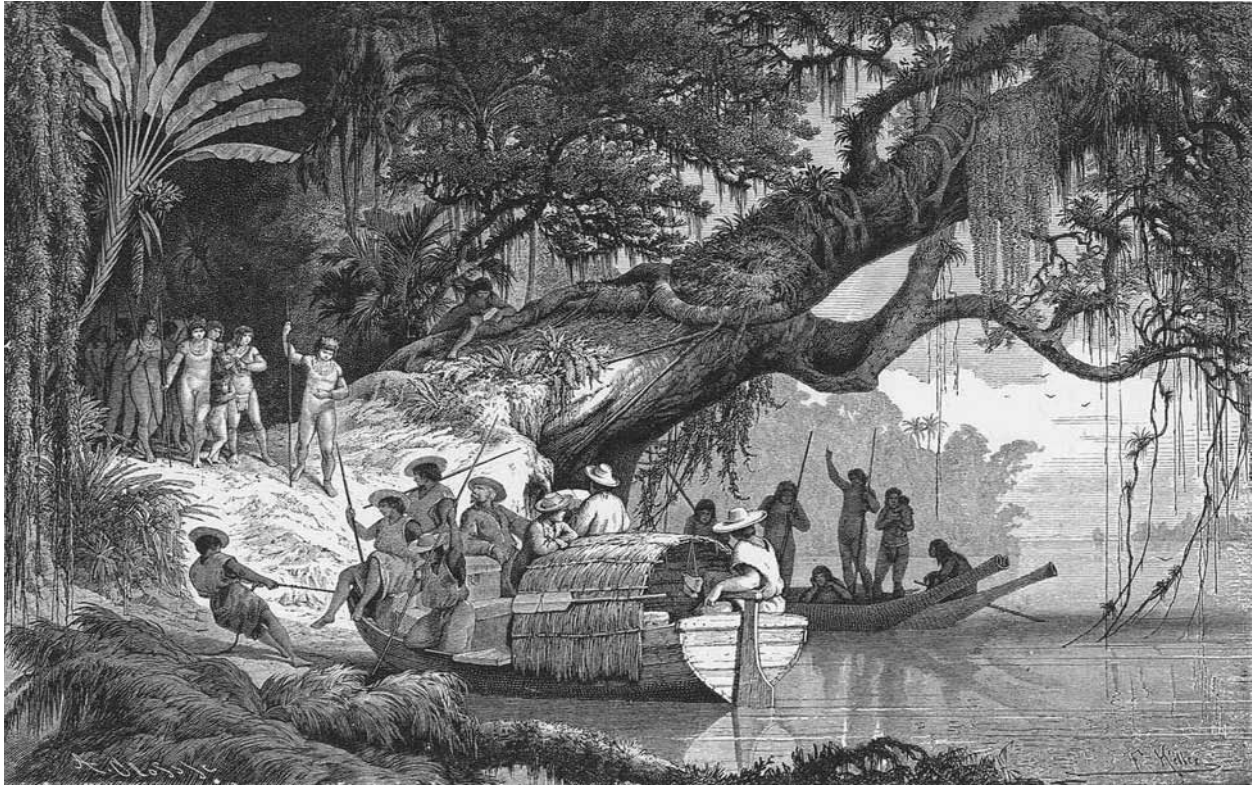
Soil Holds Clues

Apart from this physical manipulation of the landscape, recent research on ancient Amazonia has focused on anthropic or anthropogenic soils (that is, soils whose formation is directly related to human activity) and trying to assess what kind of soils in Amazonia may have been generated through human activities, how widespread they actually are, and to what extent such soils were intentionally fomented. The banks of the main channel of the Amazon as well as of many of its tributaries are replete with black earth sites, illustrating both the continuity and antiquity of human presence. The use of such sites for agricultural purposes thus illustrates both sophisticated knowledge of soil properties and systems of agricultural management that were stable over many generations.

These kinds of soils, particularly *terra preta* (black earth), which is black anthropogenic soil with enhanced fertility due to high levels of soil organic matter and nutrients, are common throughout Amazonia. This agriculturally valuable soil was created either through direct agricultural fertilization or as a consequence of intense human settlement, when human waste materials enrich the soil with nitrogen. The historical evidence shows that there was no one-to-one relationship between the presence of agriculturally favorable soils and the past existence of complex polity or an extensive cultural repertoire, but the investigation of anthropogenic soils now provides clear evidence that human occupation was not simply dependent on supposedly conducive environmental conditions, but also could persist in regions where *terra preta* was formed, consciously or not. Recent investigation of the many well-documented *terra preta* deposits along the main Amazon channel, as well as along its tributaries, has thus produced important and convincing data on the agricultural dynamics of past human populations.

Agriculture and Diet

The addition of maize to modes of subsistence that previously centered on palms and manioc, as well



"Our first interview with Caripuna Indians—Madeira River." From the 1875 edition of *The Amazon and Madeira Rivers: Sketches and Descriptions from the Note-book of an Explorer*, by Franz Keller.

as the systematic exploitation of other food plants, has also been the subject of study. But interest in the advent of maize cultivation results from seeing maize use as a token of social and cultural complexity, given its easy storage and high nutritional value, and so evidence of its use in Amazonia, where the use of manioc varieties is predominant in the historic and ethnographic reports of aboriginal horticulture, is especially significant. But this apparent predominance of manioc agriculture in ethnographic and historical materials about Amazonia may result from the way in which manioc use increased over the last five hundred years as a result of indigenous access to steel tools via trade with the Europeans. The use of steel axes would have permitted much greater clearance of forest for the forest of manioc, a root that must be dug from the earth, than the use of stone axes would have. As a result, and also stimulated by European trading interest in manioc flour,

there were distinct advantages for domestic groups in opting out of the systems of intensive agricultural production that sustain large civilizations. Consequently the dietary use of manioc, as opposed to maize, may well have increased substantially during the historic period.

Basic Questions Remain

The nature of these transformations over the last five hundred years is critical to an understanding of ancient Amazonia, but the sheer size of the region and the lack of sociocultural continuity between past and present society and culture, as a result of colonial conquest and depopulation, make comprehensive study of the environmental history of the region especially challenging. Many of the basic questions of Amazonian prehistory remain to be addressed more completely, not least of which are



those of the scale and longevity of human occupation. It seems likely that ethnography and history, as much as archaeology, will continue to play a role in the discussion of human adaptations to the Amazonian environment. Work in progress that emphasizes ethno-archaeological techniques, systematic survey, and interpretation of historical records, as well as the deployment of new technical resources, such as geophysical survey, seems well positioned to do justice to the complexity of Amazonian antiquity.

As these techniques are deployed and the database grows, it already seems likely that issues of human environmental adaptation will be cast in a different framework to that which produced the idea of Amazonia as some kind of false paradise whose apparent botanical bounty belied the actual poverty of its soils for human usages. Already much of the work there tends to suggest that Amazonia is too complex an environment, and its human adaptations too various, to be adequately characterized as either utterly unfavorable or uniformly conducive to human settlement. The very uncertainties about the definition of an Amazonian region, discussed earlier, reflect the fact that the conceptualization of Amazonia as a homogeneous entity is in itself flawed. As debates about models of the Amazonian environment are being replaced with actual investigation of human adaptations through time, researchers are in a better position to appreciate the variety and complexity of human adaptation to both the challenges and the potential of the Amazon basin proper, as well as of the surrounding regions.

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See also Agricultural Societies; Manioc

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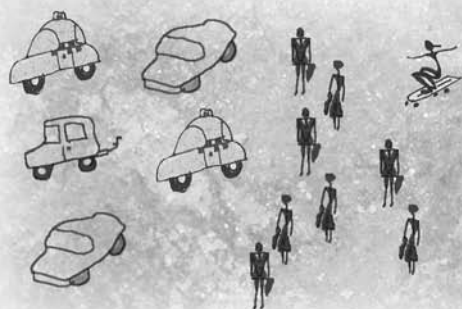
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American Empire

The American Empire, or American imperialism more generally, is a disputed concept that refers to the political, economic, military, and cultural influence of the United States around the world. The idea of American imperialism gained in popularity when the United States took possession of Spanish colonies following the Spanish-American War of 1898. More recently the term is invoked to critique U.S. foreign policy.

The issue of imperialism in the United States of America—that it to say, the idea of an American Empire—is a keenly debated, hotly contested topic. Some say the United States is an empire, and that it’s a good thing. Some say the United States is an empire, and that it’s a bad thing. There are those who say it is not an empire, but it should be. Others say the United States is not an empire, and that’s the way it should be. These debates occur both within the United States and beyond its borders. One reason for the lack of consensus on the topic of American Empire is the contention that the United States’ global reach differs somewhat from that of traditional (especially European) empires. Americans in particular tend to believe that the United States has not been an imperial power.

The American Empire, however, is real, with historical roots in the founding of the republic during the eighteenth century, its evolution during the nineteenth century, and its maturation during the early twentieth century. By the latter years of the twentieth century, especially resulting from the impact of two world wars, the United States possessed more power and had more global political and economic interests than any empire in the modern era. And by early in

the twenty-first century, some argued that U.S. foreign policy was expansionist to the point of being imperialistic.

U.S. imperialism developed in a generally different way than that of traditional European empires. Rather than invade countries with large armies, send in agents of occupation, maintain political and economic control through institutions it created and staffed with officials from the mother country and local collaborative elites, and restrict colonial sovereignty, U.S. officials and businesspeople created an empire that was principally commercial, based on free trade and massive overseas investment. After that empire was established, the United States had overwhelming influence and wealth and was able to control affairs in associated countries with great efficiency for the most part. So, without the formal trappings—and much of the political baggage—of imperialism, the United States enjoyed the greatest benefits of empire—and with many of the same downsides for the exploited—throughout much of the twentieth century.

Blueprint for the Empire

One can observe the foundations of empire from the outset of the U.S. republic. When seeking autonomy from the British Empire during the late 1700s, U.S. leaders devised a program for global influence, with John Adams even writing a “model treaty” for prospective alliances with the established powers of Europe that would have given the new country equal commercial footing with them based on the concepts of free trade and “most favored nation” trading rights.



Historic Trinity Church on lower Broadway dwarfed by the World Trade Center, May 1973. Long before 9/11, the “Twin Towers” were symbolic of the United States’ economic power in a global market. National Archives.

After U.S. independence, U.S. leaders such as Alexander Hamilton recognized that economic power, especially via industrial development, could lead to world power. Consequently, during much of the nineteenth century, the U.S. government pursued a program of industrialization, with protective tariffs, government grants, tax incentives, and subsidies to promote industrial and international growth. Undeniably, the use of slave labor in certain industries, such as cotton and sugar, also advanced the cause of economic development and expansion.

The global interests of the United States at the time were still limited, subordinate to the need to

develop the economy at home. However, by midcentury one could see the United States stepping out into the world, taking land by force or purchase in Oregon, Texas, California, Alaska, and elsewhere and envisioning a Caribbean Empire in Cuba, Santo Domingo, Nicaragua, and other places; deploying gunships to Japan to demand open markets; creating bonds with British financiers to pay for the Civil War; and sending missionaries and businesspeople to foreign lands to expand U.S. interests all over the world. Clearly, the American Empire did share some affinities with the empires of old.

Stepping Out

By the late 1800s the United States was about to become an imperial power, through both design and necessity. U.S. theorists of empire, such as Alfred Thayer Mahan, Minister Josiah Strong, and Brooks Adams, cited the need to expand republican institutions and Christian doctrine, fulfill manifest destiny (a future event accepted as inevitable) and social Darwinism, and expand “civilization” to avoid decay. They pressed for an imperial agenda and reached responsive and influential targets such as presidents William McKinley, Theodore Roosevelt, William Howard Taft, and Woodrow Wilson, as well as most diplomatic officials, business leaders, and media representatives. The United States was embracing the ideology of imperialism and, during the 1890s, stepping out into the world aggressively with purpose and success. Secretary of State Richard Olney boasted, for instance, that “the United States is practically sovereign on this continent, and its fiat is law upon the subjects to which it confines its interposition.”

The principal factor in U.S. emergence as a global power, however, was the need for foreign commercial relationships to avert economic crises at home. During the latter part of the nineteenth century the United States was wracked with labor and agricultural unrest, currency controversies, and deflation and depression. As the U.S. oil magnate John D. Rockefeller explained: “dependent solely upon local business, we



should have failed years ago. We were forced to extend our markets and to seek for foreign trade.”

Accordingly, the United States, using the liberation of Cuba from Spanish rule as its pretext, went to war in 1898 and ultimately took control of not only Cuba, but also Puerto Rico, Guam, the Philippines, and Hawaii—the only places where the United States would establish the formal trappings of empire. Its global reach and imperial-like power, however, would only grow.

Buttressed initially by what President William Howard Taft called “dollar diplomacy,” and similar to other empires, the United States would soon rely on military might. The United States embarked on a path that would create one of the greatest empires in modern times, one based on finance capital, private markets, the exploitation of raw materials elsewhere, the search for cheap labor, and global consumption. In the process, U.S. officials extended national power into all areas, using force when necessary to create commercial opportunities. As the soon-to-be president Woodrow Wilson observed in 1907, “since . . . the manufacturer insists on having the world as a market, the flag of his nation must follow him, and the doors of nations which are closed against him must be battered down. Concessions obtained by financiers must be safeguarded by ministers of state even if the sovereignty of unwilling nations be outraged in the process” (Parenti 1995, 40).

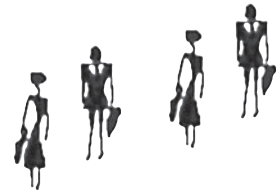
By 1914, the eve of World War I, the United States was extensively involved in the economic and political lives of societies on virtually every continent, with growing interests in China, Mexico, and the Caribbean. The United States began to extend its power more aggressively, intervening in the Boxer Rebellion in China, the Russian Civil War, the Mexican Revolution, and the affairs of a host of Latin American countries per the “Roosevelt Corollary” to the Monroe Doctrine, which asserted the right of the United States to act as a global policeman in the hemisphere. With the outbreak of war in Europe, President Woodrow Wilson’s “liberal capitalist internationalism” led the United States into the first rank of world powers.

World Wars and World Power

Woodrow Wilson, like Roosevelt and Taft before him, believed that capitalism, not traditional imperialism, leads to the greatest wealth and power and would promote peaceful relations between nations. Countries that traded, these presidents reasoned, would be less likely to fight. In 1914, as the European powers went to war, the United States was the greatest industrial power in the world but had limited military capabilities. Wilson would thus use the power of capital to extend U.S. influence, conducting vitally needed trade with Britain and France, brokering loans to the allies to keep them afloat and fighting, and finally intervening in 1917 to preserve the British gold standard. Wilson’s involvement paid off. By 1919 the United States, which had entered the war as a debtor nation, had \$11.7 billion in credits, and the seat of global economic power had moved from London to Wall Street.

During the ensuing decades, even with the vagaries of the Great Depression and so-called isolationism, the American Empire proceeded apace. Viewing the maintenance of the Open Door (a policy giving opportunity for commercial relations with a country to all nations on equal terms) as “the road away from Revolution,” President Herbert Hoover during the 1920s and 1930s continued the aggressive search for markets, with U.S. military intervention and repressive client states backing up that approach, particularly in Latin America. Even with the advent of the “Good Neighbor Policy” of President Franklin D. Roosevelt, the U.S. economic stake and political influence in Latin America grew, setting the stage for future anti-American movements in Latin America.

By the 1940s, the United States had maintained as much politico-economic power as possible given the global crises of depression and militarism in Europe and Asia and was about to emerge as the dominant global power with the coming of World War II. Germany and Japan posed threats to the global community not just because they invaded sovereign lands, but also because their versions of economic nationalism, or autarky, threatened to close off large



and economically crucial regions to open commerce. Hence, the United States had to take action against such aggression, and, after Germany's aggression in France, Britain, and the Soviet Union and the Japanese attack at Pearl Harbor, Roosevelt mobilized the economy for war, sending huge amounts of military materiel to the anti-Axis nations, ultimately committing U.S. troops to Europe and the Pacific. The Axis powers were Germany, Italy, and Japan. At war's end in 1945 most of Europe and Asia was devastated, with massive reconstruction needs looming. But the United States came out of the war stronger than ever, with the new Bretton Woods system—the International Monetary Fund (IMF) and World Bank along with the dollar set as the world's currency, fully convertible to gold—in place as a means of economic influence.

Positions of Disparity

Using the IMF, World Bank, reconstruction loans, and the Marshall Plan (a plan for economic recovery in European countries after World War II), as well as wielding preponderant military power and holding nuclear weapons, Washington was able to exercise vast economic, and hence political, influence during the Cold War. Indeed, after World War II the United States exercised arguably the greatest power in the modern era. Writing in 1948, the U.S. diplomat George Frost Kennan candidly observed that “we have 50 percent of the world's wealth, but only 6.3 percent of its population. Our real task in the coming period is to devise a pattern of relationships that will allow us to maintain this position of disparity.” In subsequent decades the American Empire continued to expand, by both commercial and military means.

In 1950 the U.S. National Security Council produced *NSC-68*, perhaps the most important postwar document concerning the growth of U.S. power. In it the NSC urged vast increases in military spending to contain not only the Soviet Union but also any country that threatened U.S. interests. This gave great impetus to the so-called military-industrial complex. Defense spending and the arms race soared as the

United States became involved in commercial and political affairs seemingly everywhere. Not only did Washington promote free trade and investment abroad, but also it intervened militarily in disparate places such as Korea, Iran, Guatemala, Indonesia, and Lebanon when it perceived that its interests were at risk. At the same time, taking advantage of the power of the dollar and the Bretton Woods institutions, the United States forced former empires to open their markets to U.S. traders and investors, thereby giving U.S. businesses global access. At home, this period of economic expansion created prosperity for working people, while the political force of McCarthyism and the Red Scare kept critics of the empire silent or ineffective. McCarthyism, named after Senator Joseph McCarthy, was a mechanism by which the establishment targeted and attacked any sector of society or individual deemed subversive.

By the mid-1960s the United States could wield the power of the dollar and the armed forces to promote its interests virtually everywhere. However, limits to U.S. power began to appear; despite attempts by a series of administrations, the Communist government of Fidel Castro in Cuba could not be ousted. Moreover, the U.S. became increasingly bogged down in a growing war in Vietnam, which would ultimately expose the shortcomings of U.S. power both militarily and economically. Despite staggering amounts of firepower, the United States could not subdue the Vietnamese Communist/nationalist liberation movement. Meanwhile, the soaring costs of the war caused massive deficits in the U.S. balance-of-payments ledger and a run on gold, per the Bretton Woods system. By 1971 President Richard Nixon had to concede the limits of empire by abandoning the Bretton Woods system and taking the country off the gold standard. Politically, challenges to U.S. interests emerged globally. By the late 1970s such developments, worsened by “oil shocks” in 1973 and 1979 and the emergence of Japan and the Federal Republic of Germany as economic competitors, made the American Empire appear to be on the wane.

Barely a decade later, however, the empire struck back. Massive military spending during the

administration of President Ronald Reagan and the collapse of the Communist system in Eastern Europe left the United States without a serious global rival for power. Thus, despite massive deficits at home, the United States stood alone as a global hegemon. Supranational economic arrangements such as the World Trade Organization (WTO) and the North American Free Trade Agreement (NAFTA) and wars against national liberation movements in Central America signaled to the world that Washington would not yield its power quietly, that it would, in fact, continue to craft the trading empire that it had begun a century earlier.

By the mid-1990s, with a convincing show of military power in the Middle East and a commitment to globalization in effect, the United States seemed to have the unlimited ability to wage war and gain access to markets. However, this newly expanded hegemony brought a new level of criticism with it. Not only human rights groups and activists, but also less developed countries, some key allies, and even sectors of the ruling class began to question the power of transnational corporations and supranational institutions. The terrorist attacks in the United States on September 11, 2001 and the response it generated in some parts of the world were another signal that U.S. power had its limits and that the U.S. imperial mission had its enemies.

More telling, the U.S. response to those attacks, especially its invasion of Iraq, led to the most serious attack on the imperial position of the United States in a half-century. The George W. Bush administration's war against Iraq, conducted largely unilaterally, undermined U.S. prestige, worsened strains in the U.S. relationship with critical European allies, fueled anti-Americanism abroad to new heights, and led to a bloody occupation in Iraq. Despite some early successes, the deteriorating state of the war in Afghanistan has further strained relations with allies and enemies alike. The Bush administration seemed to be resorting to older forms of unilateral *imperium* (supreme power), not dissimilar to the nineteenth-century European way. Coupled with the backlash against globalization, the inability to broker peace

in the Middle East, and the global economic and financial crises of 2007–2009, the U.S. position in the world could potentially recede to position not seen since the earlier stages of the twentieth century. The response of the administration of President Barack Obama to these testing matters could well prove decisive.

In just a little more than a century the United States emerged as a global power, reached commanding heights of power and wealth, achieved an unmatched capacity to influence the world, and has seen its positions criticized and attacked—which is the lot of empires. In the twenty-first century new challenges, such as the rise of China and India, along with a resurgent Russia—and new limits—face the American empire. As for all empires and self-appointed “global police,” new strategies will be required to deal with these emerging challenges confronting the world.

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See also Globalization; Modernity; Postmodernism; Revolution—United States; Western Civilization

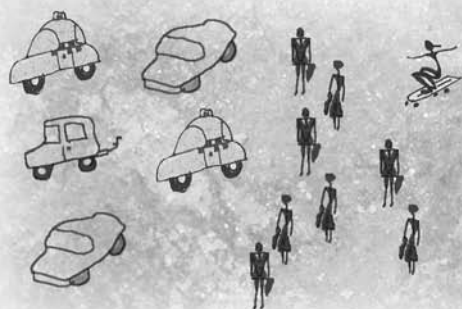
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Disobedience is the true foundation of liberty. The obedient must be slaves. • **Henry David Thoreau (1817–1862)**

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Americas, The

Diverse and isolated cultures developed during the 13,500 years of human habitation of the Americas before the European arrival in 1492. That encounter produced some tragic consequences but also integrated the Americas amongst themselves and with the rest of the world. Eventually, the resulting exchanges between Old World and New created opportunities for both, while the shock of the encounter initiated enduring reflections about human rights, liberty, and political legitimacy.

Before Europeans created the notion of “America” as a synonym for their concept of the New World they “discovered,” the Western Hemisphere was not a single and self-conscious world: it contained many worlds, each self-contained and unaware of the others. The story, then, of the Americas must follow the paths of their integration as well as their impact on an outside world that considered “America” a singular addition to the sorority of continents.

Origins and Isolation

The first human groups arrived in the Americas at some point as early as 15,000 years ago—at least in part—by following migrating herds on open tundra and crossing the land bridge that had formed, due to a drop in sea level, between what is now the Bering Strait and Alaska. They probably kept crossing in different waves throughout the Ice Age along alternative routes when the passage submerged again—glacier-hopping across the 80 kilometers (50 miles) separating Siberia from America on small craft and negotiating the narrow coastal paths left by ice-sheets. The culture

that succeeded these early peoples, the Clovis hunter-gatherers, so-named for the town in New Mexico near the archaeological site where they were discovered, date to about 12,500 years ago. They multiplied and spread across America in perhaps as little as a thousand years at a pace that conforms to that of other hunter-gatherer groups.

Humans had an important impact on the biota of the Americas. Their proficiency at hunting contributed, along with the changeable climactic conditions, to the extinction of about thirty unique large mammal species that had evolved during the Pleistocene era since America’s separation from Pangaea. Similar extinctions had occurred in the isolated continents of Australia and New Zealand when humans first colonized them about 15,000 years earlier. After the end of the Ice Age America remained largely cut off from the rest of the world. The few exceptions included further migrations by sea from northeast Asia, the assumed Pacific voyage that took the sweet potato to Polynesia, or the fleeting Viking settlements in Newfoundland.

A profound consequence of the end of America’s isolation in 1492 CE was the spread of contagious diseases to which indigenous American populations had no immunity. Some Caribbean islands lost their entire native population to disease and exploitation, while the population density along the Amazon River basin has never recovered from Francisco de Orellana’s navigation of the river from Peru to the Atlantic in 1542 CE. Estimates agree that the population of the Americas collapsed by about 90 percent over the 150 years that followed the European arrival.

American populations before 1492, for all their divergences, shared with each other and with other



Martin Waldseemüller drew this 1507 map of the world in the tradition of the Ptolemy map. It is the first known document to label the landmass "America," after Amerigo Vespucci (1454–1512).

populations that had not been in contact with Afro-Eurasians, a common immunological disadvantage. They suffered similar fates. On the other hand there was not a single contagious disease to which they alone had immunity but the Eurasians did not. The imbalance can be explained by the axes along which the landmasses of America and Eurasia extend and by the effects on the development of agriculture.

Agriculture and the Columbian Exchange

Agriculture may have arisen independently in many places. In the Americas, however, three or four nuclei had conspicuous roles in spreading techniques of domestication of plants and animals. Mesoamerica developed edible maize varieties by 5000 BCE and supplemented them with squash (8000–6000 BCE), beans (c. 4000 BCE), and turkeys (by c. 3500 BCE); independently, hundreds of different species of potatoes, were being farmed in the Andes by 5000 BCE, together with manioc, llamas, and guinea pigs. In the Amazon Basin, trees were cleared for the planting of squashes and tubers around 7000 to 6000 BCE, and some populations of the eastern United States were cultivating sunflower and goosefoot by about 2500 BCE. Areas where populations concentrated or microclimates created ecological diversity were propitious

for the rise of agriculture. The fertile upland valleys to the rainforests of Mesoamerica, and the Andean high plateau and river valleys that slope down to the sea offered such conditions better than anywhere else in the continent.

Cultivation and domestication spread along the longitudes of America more slowly than they did along the more environmentally uniform horizontal axis of Eurasia. Even maize, the most adaptable and successful American crop, which penetrated north to the modern United States and south to Peru, as well as across the sea to the Caribbean islands (where the name *maize* comes from) before Columbus arrived, traveled and adapted at a slow pace compared to the exchanges taking place in Eurasia. The problems of transmission across climatic zones inhibited the transfer of crops and other biota from one region to the next: potatoes and llamas never reached the dense population centers of Mesoamerica from Peru, while Mexican turkeys never reached the United States or Peru until Europeans took them there. On the other hand, in Eurasia, humans from Portugal to China knew the whole gamut of crops and domesticated animals by 1492. Agriculture was more widespread and the human population was much greater as a result.

The so-called Columbian exchange that followed the European colonization of the Americas began



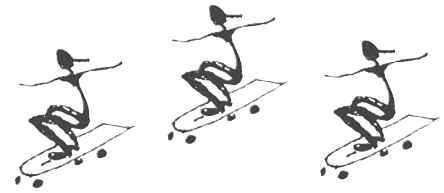
Mesoamerica developed edible varieties of maize as early as 5000 BCE. Photo by Clara Natoli (www.morguefile.com).

to integrate the biota of the Americas with those of the rest of the world, reversing the trend that had occurred since the separation of Pangaea. While new ingredients, such as chocolate and tomatoes from Mesoamerica, enriched Old World cuisines, and tobacco fumes enveloped the globe, ecological exchange opened new areas to sustainable and increased human habitation. North European dependence on the nutritious potato is well known. American products soon reached as far as China, where maize and sweet potatoes supplemented the traditional diet and allowed the cultivation of the previously uninhabited forested uplands of the Yangzi Basin in the eighteenth century. China is now the world's largest producer of potatoes and the second largest producer of maize. In the same vein, Eurasian sugar became a profitable cash crop that facilitated the commercial viability of colonizing Brazil and much of the Caribbean with the labor of African slaves. The vast and unvarying expanses of the North American plains or Argentine Pampa became viable for agricultural exploitation when nineteenth-century technological innovations combined with the introduction of Afro-Eurasian manpower, crops, and cattle to unlock their potential, turning them into the granaries of the world.

Empires, Imperialism, and Colonization

Pre-Columbian agriculture turned the areas of greatest biodiversity, where it flourished most easily, into the richest, most densely populated and influential regions of the hemisphere, a balance that favored the Andes and Mesoamerica until the early nineteenth century. The Andes saw the first experiments in large human settlements. In central Peru, from late in the second millennium BCE, under the cultural influence of cities like Chavín de Huántar, a continuous tradition of large cities and powerful states emerged. The seminal civilization of Mesoamerica was the Olmec, (1200 BCE declining and eventually disappearing after 400 BCE) whose influence fanned out from southeastern Mexico to all of Mesoamerica, and indirectly to the north beyond. The great urban center of Cahokia on the Mississippi (at its height in the early thirteenth century CE), depended on outlying communities that engaged in intensive agriculture to support the population of city dwellers, including religious leaders and government officials, trade workers, astronomers, and artisans. But it never attained the density of population or the longevity and influence of cultural traditions that the Andeans and Mesoamericans achieved.

Andean culture flourished along a corridor of fertile mountain valleys, highland plains, and irrigable deserts, flanked by the Amazonian lowlands and the Pacific Ocean, with an intractable desert to the south and untamed tropical rainforests to the north—limits still recalled after the conquest in the map drawn by the Quechua Indian Felipe Guaman Poma de Ayala (1535(?)–c. 1620)—*Mapa Mundi del reino de las Indias* (within his *Nueva Cronica y Buen Gobierno* c. 1615). Mesoamerican civilization spanned the diverse ecosystems ranging from the rainforests of Guatemala that were colonized by the Maya to the intractable frontier of seminomadic populations living in arid northern Mexico, whom the settled populations regarded as barbarians, much as the Chinese saw the Mongols or the ancient Romans deemed the Germans. Within both culture regions there developed very



diverse ethnocultural and linguistic communities of small polities akin to city-states supported and often defined by the ecological context of their hinterland. Despite their interactions and similar sociopolitical organizations (like princely government and stratified societies), religious rites (like various degrees of human sacrifice) and mythologies (interchangeable deities), there was still such diversity that even seemingly important cultural traits like the expressive classical Mayan (c. 200–900 CE) writing system failed to be adopted elsewhere in the Mesoamerican culture zone. Even the unifying embrace of empires implied little more than a tributary relationship, without the formal imposition of any cultural uniformity.

The Aztec (c. 1427–1521) and Inca (c. 1400–1532) empires were the latest manifestation of long imperial traditions in both Mesoamerica and the Andean cultural regions. Like the concept of a unified China, the American imperial traditions were resilient and survived the overthrow of past empires. Also like China they tended toward encompassing the majority of their acknowledged world: for the few weeks after defeating his brother in a civil war to unify their father's empire, Atahualpa Yupanqui, the last Inca emperor (1525–1532), had a much greater subjective claim to have pacified and united his world than Alexander the Great or Chinggis (Genghis) Khan. The Amerindian empires were unusual in world history for controlling enormously diverse ecological zones in their search for ever more varied products to consume. In pre-industrial times populations grew slowly, wealth and resources hardly increased, a zero-sum game assumption of the world predominated: predatory imperial capitals like Teotihuacán (first century BCE to eighth CE) or Mexico-Tenochtitlán (mid-fourteenth century CE–present) grew to be the largest cities in the hemisphere and amongst the most populous on a global scale from the tribute of their far-flung dependencies. They were tolerated because tribute bought the empire's peace, protection, a degree of autonomy, internal mediation of disputes, and new commercial opportunities for subject polities.

The endurance of these imperial traditions helps to explain why so few Spaniards were able to dominate

the two richest culture zones of the Americas so quickly (the Aztec Empire 1519–1521 and the Inca heartlands 1532–1533) after replacing their respective imperial elites, while the more fractured and less densely populated zones in the Araucania of Chile or the seminomadic peoples of North America proved so intractable. Mexico City's imperial role to some extent survived the Spanish conquest. Spanish viceroys, often still referred to as *tlatoani* by native speakers in sixteenth-century texts, were able to muster repeatedly the considerable manpower of Mesoamerica and direct it toward the extension of what can be seen as the city's sub-empire. New Spain upheld pre-conquest commercial and strategic interests as well as initiating specifically European quests for silver, European crops and animals, and access to Atlantic and Pacific trade. New Mexico, Honduras, Florida and the Philippines were conquered for the Spanish kings with Mesoamerican manpower directed from Mexico City and then governed, in the first instance, by viceroys.

Spanish dominion over the richest portions of the Americas was an unlikely feat with a profound impact on world history. The Spanish Empire pioneered the cultural and commercial integration of the Americas as well as its commerce with the rest of the world. Spain's creation of a territorial, rather than a merely commercial, empire like the Portuguese or Dutch—in a populous continent rich in silver, gold and other valuable resources—began to equalize and then reverse the world's economic balance in favor of Europe, until then a “poor promontory of Eurasia,” and away from Asia. The process culminated with the rise of the contemporary world's only superpower, the United States, in the traditional northern backwaters of the Americas, populated primarily by Eurasians and Africans.

In the long run the integration of the Americas with the rest of the world reversed the historically predominant balance of wealth, power, and cultural influence from the center-south of the hemisphere to the north. Like other traditionally potent pre-industrial centres like China or India, Mesoamerica and the Andean region fell behind during the century that elevated



Quechua-Indian Felipe Guaman Poma de Ayala's "Mapa Mundi del reino de las Indias" (within his *Nueva Cronica y Buen Gobierno*, c. 1615).

most of Europe and the United States to global economic hegemony through industrialization. Debt and militarization were the legacy of Iberian-America's wars of independence (1810–1821 CE). As in Spain and Portugal, Latin America's inability to achieve satisfactory political stability for most of the nineteenth century and into the twentieth century slowed their investment in industrial and technological advances, despite their plentiful natural resources. After independence Mexico was unable to exploit or control 2 million square kilometers of its northern frontier that were absorbed by the industrialised north in 1848 CE. Despite impressive economic strides and political stability through most of the twentieth century, Mexico has failed to meet its potential. The southern territorial giants, Brazil and Argentina, whose potential has at times in their history attracted comparisons to the United States, have so far failed to exploit their hinterland or their natural bounties as effectively as the United States, while resource-rich countries like Venezuela have not capitalized their assets to create sustainable alternative sources of economic growth. Internal divisions of race in a context of nationalist rather than multiethnic imperial organizations, along

with extreme economic inequality and until recently social instability have continued to plague the less successful center and south of the hemisphere, which some see as the "backyard" of the richer more influential United States.

Reflections, Myths, and Notions of Liberty

The European encounter with the Americas brought about the integration of the hemisphere and a greater cultural homogenisation than at any point before. With few exceptions, the vast majority of the continent's physiologically diverse population communicates in European languages and practices varieties of Christianity which Europeans introduced and natives and Africans modified, along with other cultural manifestations first associated with Europe. The Americas are not merely an extension of Europe, however, though both might be classified as forming part of "the West." Rather, the Americas reflected back Europe's transforming gaze.

The myths that surrounded the achievements of European adventurers over populous and exotic empires



bolstered Europeans' confidence in their imperial rights and supposed abilities, dormant or frustrated since the classical age and now revived and surpassed. In Spain's American possessions, European political theories of modern statute-based bureaucratic government were first attempted from the sixteenth century, before they were tried in tradition-bound Europe. Slavery also enjoyed a renaissance and was practiced in various degrees over much of the hemisphere at a time when it was disappearing in Europe, creating a profound effect on the development of American societies and perhaps an even more pernicious one on the African peoples that supplied the slaves. The tragedies of conquest and epidemics initiated pained and enduring humanitarian reflections: Bartolomé de las Casas (1484–1566) proclaimed the then-revolutionary doctrine that “all the peoples of mankind are human,” a view endorsed by Pope Paul III's papal bull of 1533 embracing the humanity of Amerindians. The Spanish crown responded, and motivated by conscience and an interest in maintaining their labor-force, proclaimed legislation like the “New Laws” (1542) that sought to protect Amerindian subjects. Both the Hispanic notions of *mestizaje* (cultural and racial mixing) and the U.S. or Brazilian self-conceptions as melting-pots or plural societies were born of the more positive traditions of American and European interaction. There is a clear continuity between these ideas, and our contemporary acceptance of universal human rights, which in turn enjoys global influence because of “the West's” power.

The Americas became linked with the liberating feeling of newness. Utopians like Vasco de Quiroga experimented with “ideal” communities in sixteenth-century Mexico, and Puritan “cities on a hill” were founded in New England. The inherent goodness of man was identified in the “noble savages” of uncivilized corners of the continent, while Romantics learned their rapturous awe of nature in the spectacular untamed landscapes of North America. An impoverished sixteenth-century Spanish adventurer

could hope to improve himself by being recognized as a nobleman for his achievements in the Americas and enjoy his notion of liberty to participate within his empire's “political nation,” while an eighteenth-century Virginian landlord could see himself as a new Roman republican hero, complete with slaves, and create a constitution fit for an “empire of liberty” that with some modifications has defined the modern world's ideals of political legitimacy.

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See also Art—Pre-Columbian Central and South America; Columbian Exchange

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Andean States

The early civilizations of the Andes were shaped by the geography of the region—rugged mountains, desert coastal plains, and narrow river valleys—into independent, self-sufficient communities. Gathering these villages under state rule required coercion and the redistribution of goods. Because no written records exist, the history of the pre-Incan Andes has been interpreted entirely from the archeological record.

A state can be defined as a regionally organized polity that contains a hierarchical and centralized political structure that maintains social stratification and coordinates human efforts. Unlike civilizations in many other regions of the world, the civilization in the Andes had no system of writing prior to the Spanish conquest in the 1530s. Therefore, there are only eyewitness accounts of the last Andean state, the Inca Empire. The Incas, however, were the culmination of a process of state development that began more than 4,000 years earlier. Our understanding of earlier states of the Andes must be gleaned almost exclusively from the archaeological record. This reliance on the artifacts and sites left behind unfortunately creates interpretation problems for scholars. The “footprint” of a state can look very similar to the “footprint” of a chiefdom; the nuances of a state’s ideology and economic system can be difficult to understand from collections of pots and rocks. Nonetheless, a tentative picture of the evolution of Andean states can be drawn based on decades of meticulous archaeological work.

State Foundations

By about 6000 BCE, hunting and gathering groups both in the high Andes and along the Pacific coast

of South America transitioned slowly into a mixed subsistence strategy of gathering, fishing, and farming. This transition led to the establishment of small, semipermanent villages that dotted the seaboard by 3000 BCE and to the development of more politically complex societies on the coasts of present-day Ecuador and central Peru. In Ecuador, the Valdivia culture (3500–1500 BCE) shifted slowly toward more intensive fishing and agricultural practices, and some status inequalities may have emerged. The largest Valdivia sites, such as Real Alto, grew to more than 30 hectares, and at their height they boasted a ring of houses surrounding a plaza and two small mounds. Valdivia’s monumental architecture, however, pales in comparison to that of the Supe valley of central Peru. In the middle of the third millennium BCE, as many as eighteen cities grew in the valley on the strength of an economy based on cotton cultivation and inter-regional trade. The best documented of these sites, Caral, is a 68-hectare complex containing six stepped pyramids, the largest of which is 19.5 meters tall and 135–150 meters at its base. The site, radiocarbon dated to 2627–1977 BCE, boasted elite residences, workshops, and commoner dwellings.

While the Valdivia culture declined in the second millennium BCE, the monumental architecture tradition continued on the northern and central coast of Peru. From 1800 BCE to 800 BCE, villagers built scores of sunken courts, platform mounds, and temples. These sites were suddenly abandoned around 800 BCE, perhaps due to catastrophic flooding from an El Niño weather phenomenon. The highland site of Chavín de Huántar, located in the northern highlands of Peru, rose in importance after this event. At the peak of its power from 400 BCE to 200 BCE, the site was an



important pilgrimage center—as evidenced by artifacts found there from a wide region, along with ritual objects and shamanic iconography—whose influence could be seen on artistic styles throughout much of Peru. At this time, the site covered almost 30 hectares and was dominated by a 2.25-hectare monumental stone temple riddled with galleries, airshafts, and water channels. The sites from these periods were often massive, but were likely not the products of a state-level civilization. At this time, the degree of status differences and labor specialization appear insufficient for a state. Nonetheless, the harbingers of the state can be seen in the ability of these polities to organize large amounts of labor for construction projects, the separation of people into different status groups, and an increasing tendency toward labor specialization. The trends toward statehood culminated in the development of the Moche culture on Peru's north coast.

Moche

By the end of the first century CE, the site of Cerro Blanco gained control over the other cities along the Moche and Chicama rivers. By about 400 CE, Moche-style ceramics and architecture could be found from the Lambayeque valley in northern coastal Peru to the Nepena valley, some 250 kilometers south. Known for its public architecture and high degree of craft specialization, Cerro Blanco, a large site in the center of the state, became the capital of the Moche state. The site covered over 1 square kilometer and was dominated by the Huaca del Sol and the Huaca de la Luna (the Temple of the Sun and the Temple of the Moon), two massive platform mounds constructed out of mud bricks. The Huaca del Sol was one of the largest mounds ever built in the Americas, and recent excavations at the Huaca de la Luna have revealed beautiful polychrome murals and human sacrificial victims. Elite complexes of grand courts, low platforms, workshops, and living residences clustered around the two *huacas*.

The opulence and pageantry of elite life is also reflected in depictions on pottery and in the wealth of clothing, jewelry, and other items found in the burials

of three priests at the Moche provincial site of Sipán in the Lambayeque valley. Lambayeque and the other valleys outside of the Moche-Chicama heartland were likely integrated into the state in different ways. Some groups were conquered and directly administered by centers that likely housed Moche officials, while other groups were nominally independent from the state but closely aligned with it through economic and political ties.

The Moche was not the only culture that flourished during this period. The Lima, Nazca, and Pukara cultures were important regional powers elsewhere in the Andes. However, none of these groups rivaled Moche in size or degree of political centralization. Beginning around 600, Moche unity unraveled. Cerro Blanco was abandoned, and massive constructions at two cities, Pampa Grande in Lambayeque and Galindo in the Moche valley, suggests that the state broke up into at least two parts. While the reasons for Moche's decline remain unclear, shifts in the El Niño current at this time caused successive waves of long droughts and torrential rains. These environmental pressures, coupled perhaps with internal strife and conflict with the expanding Wari state, likely led to the breakup of the last remnants of the Moche state around 800.

Tiwanaku and Wari

Near the southern shore of Lake Titicaca (on the border of present-day Peru and Bolivia), the site of Tiwanaku became an important regional center by 350 CE. The city, oriented around a complex of mounds, sunken courtyards, megalithic stonework, and statues, appears to have been an important pilgrimage center. By about 550, Tiwanaku became the capital of a state that controlled much of the area around the Titicaca basin. Tiwanaku architecture and artifacts are found throughout the region, and there is some evidence that the state increased agricultural yields by resettling farmers and streamlining the network of irrigation canals and raised fields that were situated around the lake. Tiwanaku had a significant impact on the iconography of ceramics and textiles throughout northern Chile, northwestern Argentina, Bolivia,

and Peru. This influence likely reflects the persuasiveness of their religion and the length of their trade networks rather than the incorporation of this area into a far-flung empire. Nonetheless, there are a few sites in the Moquegua (Peru) and, perhaps, Cochabamba (Bolivia) valleys that were established by Tiwanaku settlers in order to exploit lands at lower elevations.

By about 500, the site of Wari became the capital city of a state that we know by that name in the Ayacucho region of central Peru. While much of Wari's iconography was derived from Tiwanaku examples, the rise of the state appears to have been the culmination of local developments. Between 700 and 1000, the spread of Wari artifacts and architecture throughout Peru points to the increasing power of the polity. Wari appears to have taken control over some areas by creating regional administrative centers and shuffling political hierarchies, site locations, and economic systems to fit their needs. At least twenty administrative centers, the largest of which, Pikillacta, measured 800 meters on a side, may have been connected to the capital through a network of roads. Other areas of Peru, however, bear few or no traces of Wari domination, and it is likely that these areas enjoyed more independence from the state. The Wari state ended around 1000, and Tiwanaku followed soon after. Some scholars suggest that their demise can be linked to a multiple-year drought, though no definitive reasons for the states' collapse have been agreed upon.

The Chimu State and the Kingdoms of Peru

In the wake of the Tiwanaku and Wari collapse, regional polities filled the power vacuum left in the central Andes. The most complex of these societies was the Chimu state on Peru's north coast. By about 900, the state controlled about 1000 kilometers of coast from the city of Tumbes in the north to the Chillón valley in the south. The capital, Chan Chan, was a sprawling metropolis of more than 6 square kilometers. Ten palaces, each built by a successive Chimu king, dominated the heart of the city. A palace

would serve as the administrative hub of the state during the ruler's lifetime, and then turn into a mausoleum to the ruler after his death. The Chimu also erected several regional centers in other areas, but their most impressive achievement may have been the construction of an intervalley irrigation system of massive earthen canals that brought water to fields from as far as 70 kilometers away.

Although other polities during this period are often called kingdoms, they do not appear to have achieved sufficient size and complexity to be classified as states by most archaeologists. The Chincha culture of southern Peru, for example, was the preeminent trader along the Pacific coast, but the Chincha chose to control the sea instead of controlling the lands around them. The Aymara kingdoms of Lake Titicaca were perhaps the most populous and powerful in the Andes, yet remained politically fragmented. Other cultures, such as the Ica, Wanka, Chiribaya, Inca, and Chanka, were important regional powers that also failed to develop into states. By at least the beginning of the fifteenth century, however, one of these groups, the Inca, consolidated the area around Cuzco into a state that eventually dominated Chimu and the kingdoms of Peru.

The Inca

The Inca Empire, the largest pre-Hispanic state ever known in the Americas, stretched from the northern border of Ecuador to the present-day Chilean capital of Santiago. According to native accounts and archaeological evidence, the Inca expansion began in the first half of the fifteenth century. Using a mixture of diplomacy and force, the Inca managed to conquer much of the Andean cordillera in less than one hundred years. Cuzco, the capital, contained an assortment of palaces, temples, and residences arranged around two plazas in the city's center. Royal estates, like the site of Machu Picchu, dotted the landscape around the capital.

The Inca Empire arranged conquered populations into four administrative quarters called Collasuyo, Antisuyo, Cuntisuyu, and Chinchasuyu. Although

many local practices were often allowed to continue in conquered regions, the empire frequently made significant changes to a group's political organization, settlement locations, and economic specializations. The heart of imperial administration was a system of regional centers that were interconnected by a road system. Among the many purposes served by these facilities, the most important was the collection and redistribution of goods obtained by the state through the labor tax levied upon its subjects. The Inca labor tax was couched within an idiom of reciprocity by which the Incas would return services rendered to the state by hosting workers at feasts where prodigious amounts of food and corn beer were consumed.

By the beginning of the sixteenth century, Inca rulers strained to keep down rebellions throughout the overextended empire. Wave of epidemics and a war of succession further weakened the Inca state in the 1520s. Francisco Pizarro (1475–1541) and a small band of Spanish adventurers delivered the deathblow to the empire by capturing Cuzco in 1533.

The Evolution of the Andean State

Along with Mesopotamia, China, Egypt, India, and Mesoamerica, the Andes is one of the locations to witness the emergence of the first states. While Andean examples share certain similarities with these other early states, we cannot understand the evolution of Andean social complexity without an appreciation for the region's landscapes and cultures. The Inca Empire, for example, was adapted to the rugged mountains, desert coastal plain, and narrow river valleys of the Andes. The people of the Andes adapted to this environment by creating kin-based communities that united agricultural and herding settlements draped across highly compacted environmental zones. With their few outside needs provided by llama caravans that carried products from place to place, the challenge faced by Andean states was to find a means by which to coax these independent, self-sufficient groups to come under their control. The earliest societies in the

Andes failed in their attempts to build states through the manipulation of religious ideologies alone. Successful states in the Andes, including the Inca, also had to rely on coercion and, more importantly, the redistribution of food, drink, and prestige objects. Clearly, to understand the evolution of the Andean state, one needs to understand the Andes.

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See also Art—Pre-Columbian Central and South America; Inca Empire; Spanish Empire

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Animism

Humans have long performed rituals for driving out, consulting, or appeasing the invisible spirits that they believe influence their own well-being and interact with the natural world of animals, plants, and objects. The concept today is known as *animism*, and its influences remain in modern language, habits, and ideas.

Animism is the name modern anthropologists gave to a very old set of ideas about how human beings and the natural world interact. The key concept is that animate and sometimes inanimate objects have a spiritual dimension that influences human well-being. The inhabitants of this invisible world of spirits behave much like ourselves, and interact with one another and with the visible world constantly. The spirits sometimes helped and sometimes defeated human purposes and hopes. Consequently, humans needed to maintain good relations with them, learn their wishes, and appease their anger whenever possible.

This idea probably dates back to the time when language developed fully among our ancestors, permitting them to create agreed-upon meanings to guide everyday behavior. And once they agreed on the importance of good relations with invisible spirits, human foraging bands probably came to rely on specialists who knew how to enter the spirit world at will and report back what the spirits wanted. Many anthropologists think that what Siberian shamans did among groups of hunters in the nineteenth century descended from and, at least loosely, resembled very ancient practices. At any rate, ritual singing and dancing allowed shamans to enter into trance at will; and when they returned to normal consciousness,

they regularly explained what the spirits wished or intended. Ordinary people could then go about their daily tasks reassured, or, as the case might be, devote time and effort to rituals designed to appease or drive evil spirits away.

The idea of an invisible spirit world parallel to the material world of sense almost certainly spread with the wandering Paleolithic bands that occupied almost all the habitable lands of the Earth between about 100,000 and 10,000 years ago. At any rate, all the diverse and remote hunters and gatherers whom anthropologists began to study in the nineteenth century believed that invisible spirits surrounded them and had a lot to do with everything that happened.

What made animism plausible was the experience of dreaming. A sleeping person might remember strange sights and encounters, even with dead persons. It seemed obvious that when humans were asleep something invisible—their spirits—could and did travel about among other disembodied spirits. Moreover, breath offered a clear example of an invisible something—a spirit—essential to life, which departed from dying persons permanently, thus joining, or rejoining, other disembodied spirits.

Trance, too, was interpreted as arising when a person's spirit departed temporarily and returned with news from the spirit world. Illness could also be attributed to an evil spirit that, by invading the body, upset normal health. Rituals for driving out such spirits and for defeating other spirits that were interfering with particular human hopes and purposes became central to what may be called animistic religion.

What is life? It is the flash of a firefly in the night. It is the breath of a buffalo in the wintertime. It is the little shadow which runs across the grass and loses itself in the sunset. • **Crowfoot, Blackfoot warrior (1890)**

Surges of unusual excitement and extraordinary cooperative efforts were also interpreted as examples of how a single spirit might enter into the community as a whole or those persons who bore the brunt of common exertion, whether they were defending their home territory against an invading human band, stalking and killing a dangerous animal, or initiating young people into their adult roles by secret and solemn rituals. These and other occasions brought people together emotionally; and the excitement that sustained commonality could be attributed to a spirit shared, at least temporarily, by all.

Details of how different peoples attempted to control their interaction with the spirit world differed endlessly from place to place and must have altered across time too, so that we ought not to assume that recent practices accurately replicated ancient patterns even among Siberian hunters. But it is worth recognizing that animism in all its innumerable local variations endured far longer than successor religions have done. In fact, animism still pervades a great deal of common speech and thinking.

Athletes and businessmen often invoke “team spirit”; musicians and actors hope for an “inspired” performance. And we all admire a cheerful “spirit,” whenever we meet such a person.

For millennia, management of relations with the spirit world in the light of animistic ideas and techniques sustained human communities in good times and bad. It made whatever happened intelligible and within limits curable as well. Every surprise and disappointment was believed to be the work of one or more spirits; and when matters were sufficiently critical, customary rituals could always be mobilized to find out exactly what kind of spirits were interfering and what sort of appeasement or change of human behavior might solve the problem.

A belief system that explained so much and served so many peoples across so many generations deserves serious respect. It was humankind’s earliest effort to work out a worldview, uniting in an undifferentiated whole what later separated into science and religion. Everything later thinkers did to elaborate human knowledge took off from animism,



Animal spirits are featured in the carvings on these two totem poles in Portland, Oregon. Beinecke Rare Book and Manuscript Library, Yale University.

modifying and eventually abandoning it; and it is not really surprising that all of us still sometimes fall back on animistic phrases and habits of thought in everyday life.

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See also Shamanism

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Antarctica

With most of its surface buried under two kilometers of ice, the world's fifth largest and coldest continent is inhabited by fewer than five thousand international researchers. Antarctica, the surrounding waters, and the unique ecosystem they support have been reserved for scientific research by a series of international treaties.

Antarctica is the continent of superlatives. It is the coldest, windiest, highest, driest, and remotest place on Earth. The most southerly among the seven continents and the fifth largest, Antarctica covers 14.2 million square kilometers—about the size of the United States and Mexico combined. The continent is circular in shape except for the Antarctic Peninsula, which juts out toward the tip of South America, and two major embayments, the Ross and Weddell seas.

Antarctica was long ignored, except by adventurers such as Robert F. Scott, Ernest Shackleton, Roald Amundsen, and Richard E. Byrd, who explored the region in the early twentieth century. Between 1908 and 1942, seven nations (Argentina, Australia, Chile, France, New Zealand, Norway, and the United Kingdom) decreed national sovereignty over pie-shaped sectors of the continent. None of these territorial claims, however, is recognized as lawful by any other state. During the International Geophysical Year (IGY) of 1957–1958, twelve nations (the seven claimants plus Belgium, Japan, South Africa, Soviet Union, and the United States) established more than fifty stations on the continent for cooperative scientific study. This IGY experience became the impetus for the special legal regime that today governs activities in the region.



A radiant turret lit by the midsummer midnight sun. Silver gelatin photoprint from the first Australasian Antarctic Expedition, 1911–1914. Collection of the Mitchell Library, State Library of New South Wales.

Glaciology, Geology, and Climate

The massive Antarctic ice sheet, an average of 2,000 meters thick, covers 98 percent of the continent. Only areas of the northern peninsula and the southern dry valleys are ice free. With a volume of about 30 billion cubic kilometers of water, the vast Antarctic polar ice cap contains 75 percent of the world's freshwater and 90 percent of its ice. The ice sheet is pliable and flows out like a huge glacier from a high ice-domed central plateau. This enormous ice sheet conceals the geology of the continent, which is divided into two unequal portions. The larger portion, eastern Antarctica, consists of one huge rock mass, whereas the smaller portion, western Antarctica, resembles an archipelago of mountainous islands fused together



Huskies pulling sledge during the first Australasian Antarctic Expedition, 1911–1914. Collection of the Mitchell Library, State Library of New South Wales.

by ice. Several metallic minerals, such as chromium, copper, tin, gold, lead, zinc, and uranium, are found in the Transantarctic Mountains in the peninsula region, albeit in trace amounts. Larger deposits of iron and coal are present but not in commercially recoverable quantities. No petroleum or natural gas has been discovered on Antarctica or in its circumpolar continental shelf.

Antarctica's extreme climate makes the continent a vast crystal desert. The lowest temperature ever recorded, -58.3°C , was measured at Russia's Vostok Station in July 1983, although summer temperatures can climb to 15°C on the Antarctic Peninsula. Cold, dense air blowing down from the interior polar plateau generates turbulent winds up to 160 kilometers per hour and can create blizzard-like conditions. Still, little precipitation falls in Antarctica, an average of less than 50 millimeters each year. This produces an intriguing natural paradox: Antarctica's polar ice accounts for three-fourths of the world's

freshwater resources, yet, the continent receives less precipitation than the Sahara Desert, making it the driest place on the planet.

Life Forms

The harsh climate in Antarctica produces a distinctive terrestrial ecosystem. There are eight hundred species of land vegetation, most of which are lichens. Mosses, molds, liverworts, yeasts, fungi, bacteria, and algae are also found. No herbs, shrubs, grasses, or trees exist on the continent. Animal life on Antarctica is even more scanty and primitive. No vertebrates are indigenous to the continent—there are no mammals, reptiles, or amphibians. Most animals are protozoans and arthropods, such as mites and fleas.

In southern polar seas, however, a remarkably rich biosystem thrives. Most significant among Antarctic marine life is krill, a small shrimp-like crustacean. Krill serves as the basic food for fish, whales, seals,

and seabirds in the Antarctic. Among fish in southern circumpolar seas, Antarctic cod and the Patagonian toothfish are most heavily exploited. Weddell, crabeater, leopard, and elephant seals inhabit Antarctic waters, as do porpoises, dolphins, whales, and squid. Land areas in Antarctica support huge numbers of seabirds, including albatrosses, petrels, skuas, cormorants, and terns. Most numerous are emperor and Adelie penguins, which account for 65 percent of the 200 million birds in the region.

Population and Government

No indigenous people inhabit Antarctica. Humans who live there are scientists and support personnel, and at the height of the scientific season they number fewer than five thousand. As many as fourteen thousand shipborne tourists now visit the continent annually, however. Antarctica's unique and largely pristine environment means that it can be used as a scientific laboratory platform for measuring and monitoring global processes, especially world climate change, ozone depletion, atmospheric current flow, and ocean current circulation. Science remains the principal endeavor on the continent. Such scientific research is administered by national programs and coordinated internationally through a special governance system.

The core legal agreement is the Antarctic Treaty, signed in 1959 by the twelve IGY nations. In 2009 forty-seven states are member parties. This treaty makes the continent a demilitarized zone preserved for scientific research. Although the treaty neither denies nor accepts the national claims to sovereignty in Antarctica, it does prohibit the establishment of military bases, conduct of military maneuvers, testing of any weapons (including nuclear weapons), or disposal of radioactive wastes in the area. The treaty strongly encourages freedom of scientific investigation and the exchange of scientific personnel between contracting parties.

Environmental concerns have driven the development of new international legal rules since the



Ice-cased Adelie penguins after a blizzard at Cape Denison. Photo by Frank Hurley. First Australasian Antarctic Expedition, 1911–1914. Collection of the Mitchell Library, State Library of New South Wales.

Antarctic Treaty went into force in 1961. A special measure was adopted in 1964 to foster conservation of plants and animal life on the continent. There followed in 1972 a convention to conserve and protect Antarctic seals, and in 1980 came a special agreement for the conservation of Antarctic marine living resources, specifically to control commercial harvests of krill and finfish in circumpolar seas. A treaty to regulate development of Antarctic mineral resources was negotiated during the 1980s but disintegrated in 1989, mainly because of political opposition from environmental groups. During the late 1980s and early 1990s anxiety arose among environmentalists over increasing pollution on the frozen continent. Although the threats of mineral development and increasing tourism to the Antarctic were aggravating, the real concern was the increasing amounts of garbage, sewage, and chemical wastes generated by scientists and support personnel in forty scientific stations. These wastes were not being disposed of by being returned to their original continents. Rather, they were being buried in landfills, stored in metal barrels, incinerated in the open air, or dumped into circumpolar waters. To foreclose the possibility of mineral development, but also to address these pollution concerns, a special environmental protection protocol



to the Antarctic Treaty was agreed to in 1991. That protocol provides for comprehensive regulation over activities affecting the Antarctic environment; it became binding on Antarctic Treaty governments in 1998, establishing principles for conducting human activities in the Antarctic and integrating various recommendations, codes of conduct, and guidelines into a coherent, obligatory legal whole. Significantly, the protocol bans mineral development, which includes drilling for oil and natural gas, onshore or offshore. Five annexes accompany the protocol. These set procedures for environmental-impact assessment, restate the need to conserve Antarctic fauna and flora, set standards for waste disposal and waste management, fix rules to prevent pollution from ships in Antarctic waters, and expand the Antarctic protected area system. Although this protocol and its annexes contribute much to environmental protection and resource

conservation in the polar south, the treaty system will continue to evolve to deal with new Antarctic environmental concerns, such as increasing tourism, land-based pollution, and global warming.

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Anthropocene

Human activities have become so pervasive and profound that they rival the great forces of nature and are pushing the Earth into planetary terra incognita. Some geologists believe that the Earth has now left its natural geological epoch—the interglacial state called the Holocene—and is rapidly moving into a less biologically diverse, less forested, much warmer, and probably wetter and stormier state, the Anthropocene.

In 2000, and then more formally in the journal *Nature* in 2002, Paul J. Crutzen, a Dutch Nobel Prize-winning atmospheric chemist, argued that in about 1800 the world entered a new geological epoch, the Anthropocene. This was the era in which our own species, without intending to do so, and without even understanding what was happening, became not just a significant force for change within the biosphere, but perhaps *the most important single force* for change within the biosphere.

Impressed by these arguments, several geologists have proposed that the Anthropocene be formally recognized as a new geological period. At present, we live in the Holocene epoch, which began in 10,000 BP (before present). If the new proposal is accepted, the Holocene era will be designated as having ended in 1800 CE, and the Anthropocene will be designated as the epoch to follow. The date 1800 is an appropriate starting point for the Anthropocene; that is when the global concentration of major greenhouse gases—carbon dioxide and methane—began to rise significantly. It is no accident, therefore, that the new epoch coincides with the invention and spread of the improved James Watt steam engines, and with conventional dates for

the beginnings of the Industrial Revolution. From an ecological point of view, the beginning of the Anthropocene offers a powerful marker for the beginnings of the modern era of human history.

In a controversial 2005 study, the paleoclimatologist William Ruddiman proposes a different periodization. He argues that through deforestation and the spread of domesticated livestock and wet rice farming, humans may have been shaping the atmosphere on global scales for as long as 8,000 years by raising atmospheric levels of carbon dioxide and methane. He suggests that these changes prevented the early return to a new Ice Age and allowed the great agrarian civilizations of human history to flourish. In other words, human activity created the global climatic conditions that allowed the world's major agrarian civilizations to flourish during the last 5,000 years. Ruddiman's arguments may be overstated, but even so, they suggest that the Anthropocene is not just a byproduct of modernity, but had roots many millennia in the past.

The idea of the Anthropocene (like its conceptual partner, the *anthroposphere*) has much to offer world historians. First, it highlights the remarkable fact that our species, *Homo sapiens*, is the first single species in the history of the entire planet to have had a significant impact on the biosphere as a whole. Earlier in the planet's history, large groups of organisms such as early photosynthesizing bacteria created the Earth's oxygen-dominated atmosphere. But as far as we know, no single species has ever had such a profound impact on the biosphere. The idea of the Anthropocene therefore highlights our uniqueness as a species, and the power of our capacity for sustained ecological innovation.

The idea of the Anthropocene also offers a powerful tool for thinking about some of the dominant features of modern world history. It highlights the astonishing scale of the changes that have transformed our relationship to the biosphere in the last two hundred years, and the many contemporary challenges those changes have created. And by doing so it suggests that there is an objective basis for the claim that world history did indeed enter a new era at about 1800, the time of the fossil fuels revolution. Finally, the idea of the Anthropocene highlights the profound importance of environmental history to world history in general.

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See also Anthroposphere

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Anthropology

Through four distinct, often conflicting traditions—biological, archeological, sociocultural, and linguistic—anthropologists attempt to reconstruct human prehistory and the divergence of the human races. But because the traditions are filtered through vastly different paradigms, borrowing from anthropology can lead historians to a distorted historical model.

The global scope and trans-epochal sweep of anthropology bespeak close affinities with world history. Yet, just what anthropology has to offer world history is far from straightforward. In no small part, this is because anthropology, even more than most disciplines, is a sutured and unstable bundle of paradigmatic traditions, famously involving studies of human biology and primate origins (in biological anthropology), a significant focus on the Neolithic era across the globe (in archaeology), detailed studies of daily life, particularly in small-scale societies (in sociocultural anthropology), and formal analyses of language in all its known diversity (in linguistic anthropology). Work in these different quadrants has distinct, and in some cases antithetical, implications for world history.

Anthropology as a Discipline

Though no single starting point can be found for sustained inquiry into the questions asked by anthropology, anthropology coalesced as a discipline only in the final decades of the nineteenth century, as part of a larger process of disciplinary differentiation and institutionalization. Within this larger process, the composition of anthropology was shaped to a significant

degree by “the revolution in human time,” itself located at the end of the 1850s and beginning of the 1860s. The new understanding of the length of human existence, as vastly greater than the biblical chronology of some six thousand years, undermined the then active scholarly project of reconstructing the complete family tree of humankind, from the first beget of the original hetero couple (Adam and Eve) to the distribution of peoples across the entire globe in the present.

In its place, scholars pursued a “conjectural” account of humanity’s “progress” over the vast expanse of human time, through a singular sequence of generalized stages, from primordial savagery to the telos of civilization. Within this new research program, living “primitives” and archaeological remains (both skeletal and artifactual) came to be seen as the best sources of evidence for reconstructing the prehistoric and precivilized segment of this sequence, given the absence of written records from this period of time-development.

In the earlier project of reconstructing the complete family tree of all the world’s peoples, the study of language had played a prominent role, in the form of philology. The latter’s great prestige positioned language as a significant focus of the new social evolutionary program as well. Within the new research program, however, the interest in language shifted from finding cognates that demonstrated a common source language (a node on the family tree) to establishing an authoritative basis for ranking all languages on a single scale of development.

The new understanding of human time contributed in one other important way to the formation of the new discipline of anthropology: it opened the door to a vast expansion of research on “the races of

Mankind are so much the same, in all times and places, that history informs us of nothing new or strange in this particular. Its chief use is only to discover the constant and universal principles of human nature. • **David Hume (1711–1776)**

mankind.” Within the tight temporal confines of the biblical chronology, a coherent exposition of independent racial types required the doctrine of polygenism (the idea that each race had been created separately by God), but most scholars in Europe and North America had rejected this doctrine because it was held to contradict the biblical account of the creation of humankind. The new chronology, by contrast, offered no such barrier to the idea of independent racial types, and indeed it provided a span of time that seemed more than ample for the formation of racial divisions, even if all the races had a common origin.

Finally, this pair of new scientific pursuits—the reconstruction of human prehistory and the study of human racial differences—were linked in at least two important ways. First, they relied on common sources of evidence—archaeological remains and accounts of living “primitives.” This common (evidentiary) denominator did much to make these areas of research mutually intelligible, thereby facilitating their cohabitation in a single discipline. Second, these pursuits were linked by service to a common master: empire. What this facilitated was less scholarly communication between these areas of research than an ad hoc intermingling of racial and social evolutionary notions in the common cause of legitimating conquest and domination.

Given the breadth of anthropology as it coalesced in these ways, it is not surprising that few, if any, Victorian scholars were prepared to carry out original research in all of the discipline’s many branches. It is a great irony, moreover, that one of the very first scholars who was prodigious enough to do so—Franz Boas (1858–1942)—was also one of the last. That Boas made significant contributions to all four of anthropology’s “quadrants” is a commonplace of introductory courses in anthropology, but what is typically elided in these accounts is that his contributions to biological (or in his terms, *physical*) anthropology were primarily negative. Boas’s painstaking research on racial kinds produced results that, again and again, raised fundamental questions about the validity of the concept of race. So too, Boas’s work on social evolution ended up challenging the idea that living others

could be seen as exemplars of prehistoric life. This critical response to social evolutionary theory was particularly strong in the case of language, with Boas and his students providing powerful demonstrations that all observable human languages were equally “evolved.” Thus, as much as Boas played a central role in the building of anthropology, he also animated the discipline’s characteristic centrifugal tendencies.

World History and Anthropology

In the last half century, as world history has emerged in tension with disciplinary history’s disproportionate focus on Europe and the West, world history has looked to anthropology for two primary reasons: (1) to bring into history knowledge of Africa, Asia, Oceania, and the indigenous peoples of the Americas, and (2) to gain a significant degree of temporal depth, by moving into prehistoric time. What has been insufficiently recognized, however, is that in consulting anthropology for these reasons, world history has drawn on bodies of “anthropological” knowledge that are shaped by quite different, and often antithetical, theoretical schemas or paradigms. Most Neolithic archaeology, for instance, relies upon and incorporates a social evolutionary framework; as such, this body of “anthropological” knowledge supports the perception of there being an overall trajectory to human existence through time. It thereby complements and reinforces disciplinary history’s entrenched assumption that the history of Europe exemplifies a universal passage from “traditional” to “modern” social forms: a passage that will sooner or later occur everywhere else, in much the same way. By contrast, most post-Boasian cultural anthropology incorporates and supports the rejection of social evolutionary models. This body of “anthropological” knowledge characteristically speaks against the validity of such analytic categories as “advancement” and “civilization,” while encouraging the *provincializing* of Europe and the West (cf. Chakrabarty 2000). When this knowledge is brought into disciplinary history, it becomes quite difficult to hold on to a single, coherent narrative of the human career through time. Similarly, if more

abstractly, the radical relativizing that is characteristic of post-Boasian cultural anthropology—its insistent practice of doubting the absoluteness of the familiar—discomfits disciplinary history’s common-sense realism.

In sum, recognizing the complexity of the discipline we call anthropology should caution us against the view that anthropological knowledge can, in any simple way, be brought into history to provide greater coverage of human time and space. Such interdisciplinary borrowing must be alert to the diverse paradigmatic traditions at work in anthropology, as well as their quite different relationships to disciplinary history’s own theoretical schemas.

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See also Archaeology; Civilization, Barbarism, and Savagery; Ecology, Cultural; Ethnology; Paleoanthropology; Social Sciences

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Anthroposphere

The *anthroposphere*—we humans together with our environment—addresses the degree to which we, as opposed to other life forms, have impacted and penetrated the biosphere. The concept, introduced in the late twentieth century, proposes that monopolies of human power throughout history, such as agrarian and industrial regimes, have deeply affected the relations between humans and the nonhuman world.

The concept of *anthroposphere*, like the concept of *biosphere* from which it derived, was first introduced in the natural sciences in the late 1980s and early 1990s. The term refers to that part of the biosphere that is affected by humans—just as the part of the biosphere that is affected by elephants could be called *elephantosphere*. Such terms are all predicated on the idea that there is a two-way relationship between every living species and the environment in which it lives. All life is part of an ecosystem, all ecosystems together constitute the biosphere—the total configuration of living things interacting with one another and with nonliving things. Every form of life continuously affects, and is affected by, its ecosystem—and human life is no exception.

Anthroposphere is an open concept, containing suggestions for research and reflection, sensitizing us to the problem of how far and how deeply the impact of human activity has penetrated into the biosphere. By reminding us that human societies are embedded in ecosystems, the concept helps to bridge the gap between the natural sciences and the social sciences and humanities. Moreover, it can be used to formulate and elucidate the simple but far-reaching proposition that many trends and events in human history,

from its earliest beginnings to the present day, can be seen as functions or manifestations of the expanding anthroposphere.

Extensive and Intensive Growth

The anthroposphere emerged with the evolutionary transition from hominids to humans. Initially, expansion must have been very slow and replete with regressions. In the long run, however, the human population grew in numbers from modest beginnings to 6.79 billion in 2010, and it spread from its origins in northeastern Africa over increasingly more territory, until it was a significant presence on every continent except Antarctica. Together these two forms of expansion represent extensive growth. *Extensive growth* can be defined as sheer extension of biomass, physically and geographically. It is a matter of proliferation: more of the same, reaching farther and farther—like rabbits in Australia or cancer cells in a human body.

In the expanding anthroposphere, extensive growth has always been accompanied, and in all likelihood even driven, by intensive growth. If extensive growth can be defined in terms of more and more, intensive growth refers to the emergence of something new. In the case of the anthroposphere, it arises from the human capacity to find new ways of exploiting energy and matter by collecting and processing new information. If the key word for extensive growth is proliferation, the key word for intensive growth is differentiation—its primary effect always being to add new and different items to an existing stock or repertoire. Once an innovation has been accepted, it may then be copied in multiple forms and grow extensively. Thus intensive growth and extensive growth

intermingle. (Like the concept of anthroposphere and other central concepts used in this article, such as agrarianization and industrialization, the concepts of intensive and extensive growth are intended not to express any value judgments.)

Learning as a Source of Power

Human life, like all life, consists of specific combinations of matter and energy structured and directed by information. Two particular features distinguish human life from other forms of life and hence are important in understanding the anthroposphere. First, humans rely much more strongly on learned information than any other species. Second, most of the information that human individuals learn comes from other individuals: it is information that has been pooled, shared, transmitted—it is, in a word, *culture*.

The most important vehicle for human communication is language, composed of symbols. Symbols therefore constitute a vital dimension of the anthroposphere. Information conveyed in symbols can be handed down from generation to generation and used to aggregate and organize matter and energy in the service of human groups, thus strengthening the position of those groups in the biosphere. The development of language made it possible for humans to adopt new forms of behavior that made them increasingly different from other animals. A strong reason for maintaining the new forms of behavior must have been that they gave humans the advantage of greater power over those other animals.

This seems to be one of the clues for understanding the course of the long-term development of the anthroposphere. Again and again, innovations occurred, like mutations in biological evolution, and again and again, of those innovations, those tended to be retained that helped increase the power of the groups that maintained them. As humans increased their power through such innovations as language and the mastery of fire, other animals inevitably declined in power. Some became extinct, while all surviving species had to adjust their ways of life to the newly gained superiority of human groups. At later stages,

similar shifts in power relations occurred within human society itself, compelling defeated groups to adjust to the dominance of more successful groups. Many innovations in the history of human culture were adjustments to power losses.

Differentiation: Regimes

The domestication of fire culminated in the establishment of what may be called a monopoly—a monopoly of power that was held by the human species and in which eventually all human communities of the world shared. The formation of this monopoly affected the relations between humans and the nonhuman world so deeply that we may call it the first great ecological transformation brought about by humans, which was followed much later by two similar transformations—generally known as the agricultural and industrial revolutions, and more precisely characterized by the long-term processes of agrarianization and industrialization.

Each of the three transformations marked the formation of a new socioecological regime (that is, a form of social organization and a way of life attuned to a specific level of control over matter and energy): the fire regime, the agrarian regime, and the industrial regime, respectively, marked by the utilization of fire and elementary tools, the rise and spread of agriculture and animal husbandry, and the rise and spread of large-scale modern industry. The later regimes did not make the earlier regimes obsolete; rather, they absorbed them and, in so doing, transformed them.

With each new regime, new monopolies of human power were formed, opening up new opportunities for control, security, comfort, and wealth. All these benefits, however, involved costs. This was already evident when the fire regime exerted pressure on people to collect fuel and to tend their hearths; it became even more evident when the strains of the agrarian and industrial regimes were added to the fire regime.

Four Phases of Human History

The most convenient backdrop for writing history is undoubtedly chronology. When it comes to dealing

"It's a question of discipline," the little prince told me later on. "When you've finished washing and dressing each morning, you must tend your planet." • **Antoine de Saint-Exupéry (1900–1944), from *The Little Prince***

with such encompassing long-term processes as the expansion of the anthroposphere, however, one can also speak fruitfully in terms of broad phases. By taking as benchmarks the successive formation of the three major socioecological regimes, we can distinguish four phases in human history:

1. The phase before the domestication of fire. In this phase all human groups subsisted on foraging; there were no groups with fire or cultivated fields or factories.
2. The phase when there were at least some groups with fire, but none yet with fields or factories.
3. The phase when all human groups had fire and some also had cultivated fields, but none had factories.
4. The phase we have reached today, when all human societies have fire but are also using products of fields and factories.

Of course, it would make a great deal of difference for a group of foragers whether it found itself living in the first, second, third, or fourth phase, as in the first it would come in contact only with other groups that had basically similar skills. In any of the subsequent phases, however, it might come in contact with groups whose skills made them more powerful than the foragers. As a further elaboration of this simple model of four phases, we may subdivide each phase into three subphases: a phase when there was no group with the defining technology (fire, agriculture, or industry), a phase when there were both groups with and groups without the defining technology, and a phase when there were only groups with the defining technology. Making these finer gradations in the four phases raises the intriguing problem of how to account for the transitions from one subphase to the next. How was a particular regime first established, how did it spread, and—most intriguing—how did it become universal?

The last question in particular brings out the world-historical import of the phase model. Besides being applicable to the three major socioecological

regimes, the questions also apply to the adoption of other innovations, such as metallurgy, writing, and the development of cities.

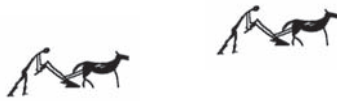
Agrarianization

The history of the past ten thousand years may be read as a series of events accompanying the agrarianization of the anthroposphere—a process whereby human groups extended the domain of agriculture and animal husbandry all over the world, and in so doing made themselves increasingly more dependent upon this very mode of production.

The agrarian way of life was based on a new human monopoly—the monopoly of control over pieces of territory (fields)—in which people more or less successfully subjected vegetation and animal life to a human-directed regime. The result was twofold: elimination of competing species (parasites and predators) and concentration of resources and people in ever-greater densities. Although agrarian regimes sometimes suffered decline, their overall tendency was to expand.

Expansion did not take place in a uniform and even fashion. In fact, the unevenness of its development was a structural feature of agrarianization. From its very beginnings, agrarianization was marked by differentiation—initially between people who had adopted agriculture and people who had not. Eventually, in the phase of industrialization, the last nonagrarian peoples vanished, and with them this primary form of differentiation.

Still, various forms of differentiation within the agrarian (or, rather, agrarianizing) world continued. Some agrarian societies went much further than others in harnessing matter and energy for human purposes, for example, by means of irrigation or plowing. In societies that grew accustomed to higher yields of agrarian production, competition to control the wealth thus generated usually led to social stratification—the formation of different social strata marked by huge inequalities in property, privilege, and prestige. Another closely related form of differentiation typical of this phase was cultural diversification. In Mesopotamia, the Indus Valley, northeastern China,



Egypt, the Mediterranean basin, Mexico, the Andes region, and elsewhere, agrarian empires developed that are still known for their distinct cultures, each with its own dominant language, system of writing, religion, architecture, dress, methods of food production, and eating habits. In the heyday of agrarianization, the anthroposphere was marked by conspicuous differences in culture or civilization—differences resulting to a large extent from the interplay of gains in power by some groups and accommodation to power losses by others.

Industrialization

Around 1750 the immense deposits of fuel energy that had lain virtually unused by any living species began to be exploited for human purposes. A series of innovations provided the technical means for tapping these supplies and for using them to generate heat and mechanical motion. No longer were people completely dependent on the flows of energy that reach the Earth from the sun and that are partly converted into vegetation by means of photosynthesis. Just as at one time humans had been able to strengthen their position in the biosphere by learning to control fire, they now learned the art of using fire to exploit the energy contained in coal, oil, and gas.

These innovations stimulated great accelerations in extensive growth. According to a rough estimate, the total human population must have reached 1 million at some time in the Paleolithic, 10 million at the time when agrarization began, 100 million during the first stages of urbanization, 1,000 million at the beginning of industrialization. The next tenfold increase, to 10 billion, is expected to be completed within a few generations. Along with the increase in human numbers, networks of production, transport, and communication have grown worldwide so that the anthroposphere is now truly global. Universal acceptance of a common system of time measurement, based on Greenwich Mean Time, is a telling example of how common standards of orientation are spreading all over the world. At the same time, the inequalities between and within human societies that arose as structural features of advanced agrarian

regimes persist in industrial society. Those inequalities now also exert disturbing global pressures, as do imminent ecological problems such as global warming, which are generated by the way in which the anthroposphere is currently expanding.

Toward a Synthesis

In the eras of agrarianization and industrialization, the anthroposphere gave rise to social regimes that were only indirectly related to the natural environment. The money regime and the time regime may serve as illustrations. Both exemplify how people turned their attention away from the natural environment, and from ecological issues, toward a more purely social aspect of the anthroposphere, represented by the clock and the calendar or the purse and the bank account. Those regimes thus supported the illusion that the anthroposphere is autonomous. That illusion was furthered by the concomitant intellectual tendency to separate the social sciences from the natural sciences and to cultivate discrete and seemingly autonomous social-science disciplines, such as psychology and sociology.

Today there is a growing awareness that as the anthroposphere encroaches upon ever larger portions of the biosphere, it absorbs more and more nonhuman elements. The notion of ecological interdependence is gaining ground. A classical theme in the social sciences has been the interweaving of planned actions and unplanned consequences. All human activities have unintended consequences; recognition of that fact is now being combined with the insight that the anthroposphere (itself the product of unplanned evolutionary processes) has become an agent in the evolution of the biosphere. Human life has become a formidable co-evolutionary force. Sociocultural processes are channeling and steering the course of biological evolution.

Without using the word *anthroposphere*, the world historians William H. McNeill and J. R. McNeill, the ecological historian Alfred Crosby, the biologist Jared Diamond, and several others have shown that it is possible to write about the history of the anthroposphere. Further theoretical inspiration can be

drawn from the traditions of sociology and anthropology inaugurated by Auguste Comte and Herbert Spencer and continued by such scholars as Norbert Elias and Marvin Harris, in combination with the geological and biological study of the biosphere as launched by Vladimir Vernadsky in the early twentieth century and taken up again by Lynn Margulis and James Lovelock from the 1970s onward. The names mentioned are but a few among many authors whose works contribute to our understanding of the history and dynamics of the anthroposphere.

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See also Anthropocene

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Apartheid

The racial segregation in South Africa known as *apartheid*, in place for nearly fifty years, faced resistance from the beginning, causing the country to lose its U.N. vote and its Olympics slot. Apartheid finally ended in 1991, and South Africa has been working to repay and repair emotional damages incurred by the white minority's supremacy over the black majority.

Apartheid is an Afrikaans word meaning “apartness” or “separateness” and refers to a system of racial segregation practiced by the white minority against a black majority in the Republic of South Africa from 1948 to 1991. In the late twentieth and early twenty-first centuries the term has acquired a generic meaning, much like *holocaust* and *diaspora*, and is used to describe other situations around the world in which one group of people deny basic human and civil rights to another group based on gender, race, or sexual orientation. Thus, one hears of apartheid against women in Taliban-controlled Afghanistan, apartheid against Palestinians in areas controlled by Israel, and apartheid against homosexuals in various countries.

Early Years

The notions of white supremacy and racial segregation came to South Africa with the first European settlers. The Dutch East India Company imported slaves from East Africa and Malaysia soon after establishing a small colony at the Cape of Good Hope in 1652. Although the British abolished slavery shortly after annexing the Cape Colony in 1806, they maintained various institutions and practices that guaranteed

white political and economic control over the black majority. By the early twentieth century Britain controlled all of modern-day South Africa, with political power nearly entirely in the hands of people of European descent. With the Act of Union in 1910, South Africa gained dominion status within the British Empire and limited self-rule. Between 1910 and 1948 Union governments passed numerous laws that severely restricted black rights. Blacks were denied equal citizenship through such measures as pass laws (laws requiring blacks to carry identification pass books), job reservations, restricted voting rolls, and the right to form unions. The Native Areas Acts of 1913 and 1936 relegated the African majority to native reserves, forcing roughly 85 to 90 percent of the population in theory (although never in fact) to live on less than 14 percent of the land. The remaining 86 percent of the land was reserved for whites only.

Thus, when Daniel F. Malan (1874–1959) and his Afrikaner Nationalist Party won the 1948 general election on a platform that officially endorsed apartheid, the concept was not alien to either the white or black populations. Ironically, at a time when Europe and North America were ending legalized discrimination against racial minorities, white South Africans began to implement one of the harshest, most total systems of racial discrimination in world history.

Structure

The philosophy of apartheid was based on four major points: the “separate development” of the four official racial groups in the country; white control of every aspect of government and society; white interests overruling black interests, with no requirement to provide



An aerial photo taken in South Africa shows how apartheid looked in practice: the “white” town of Graaff-Reinet (center) and “colored” townships (upper left and upper right).

equal facilities for all groups; and the categorization of “whites” (people of European descent) as a single nation and Africans as members of several distinct nations or potential nations.

Under apartheid there were four official racial groups. The Africans (sometimes designated as Bantu) made up about 78 percent of the total population and, although of common ancestry, were divided into nine distinct nations: Zulu, Xhosa, Venda, Tsonga, Pedi, Tswana, Swazi, Ndebele, and Sotho. *Colored* was the name given to people of mixed black, Malayan, and white descent who traced their origins to the earliest days of European settlement. Asians, mainly of Indian ancestry, were a third official group. Coloreds and Asians made up roughly 10 percent of the population. The remaining 12 or 13 percent were whites, with about 60 percent of Dutch descent and 40 percent from the British Isles, although immigrants from nearly every European nation were represented in this single “nation.”

The apartheid system was sometimes described as having two aspects, so-called grand and petty apartheid. Grand apartheid refers to those racially discriminatory policies that related to land and politics. Petty apartheid refers to the everyday examples

of racial discrimination, such as marriage restrictions and segregated facilities and amenities, housing, jobs, transportation, and education. During the first decade following the 1948 elections, apartheid policies developed in a rather crude manner under the label of *baaskap*. This Afrikaans term roughly translates as “mastery,” or white supremacy, with a very explicit notion of a master (the “boss”) and servant relationship between white and black. The Afrikaners’ obsession with cultural survival and almost pathological fear of the *swart gevaar* (“black peril”) resulted in a series of laws enforcing strict segregation and white supremacy. These included the Prohibition of Mixed Marriages Act (1949); the Immorality Act (1950), which made sex between people of different racial groups illegal; the Population Registration Act (1950), requiring everyone to be registered in one of the official groups; the Group Areas Act (1950); the Suppression of Communism Act (1950), which effectively identified anyone who opposed the government as a Communist; the Reservation of Separate Amenities Act (1953); and the Bantu Education Act (1953). This last denied government support to private and church-run (often mission) schools and placed the entire national education system under the government’s direction, resulting in a significant decline in the quality of black education.

The Baaskap Period and Hendrik Verwoerd

During this *baaskap* period, the apartheid government set about enforcing a strict separation between the races in urban areas. Thousands of Africans, Asians, and coloreds were forcibly removed from so-called white areas and relocated to dreary, desolate townships outside the cities. These harsh measures are best exemplified by the forced removal of an entire colored community living in “District Six” in Cape Town, and the destruction of the African township of Sophiatown, near Johannesburg, which was then rebuilt as a white town, to be renamed Triomf (Afrikaans: “Triumph”). It is estimated that from the passage of the Group Areas Act in 1950 to

the end of forced removals in the late 1980s, more than 3.5 million people were forcibly relocated by the government.

In 1958 Hendrik Verwoerd (1901–1966) became prime minister. He is remembered as the chief architect of apartheid. Under Verwoerd, apartheid evolved away from *baaskap* and toward a more sophisticated racist policy called separate development. Under separate development, each of the nine African (or Bantu) groups was to have its own nation, or Bantustan, located roughly on the 14 percent of land set aside in the Native Land Acts of 1913 and 1936. The remaining 86 percent of the country was reserved for whites only; that land included the best farmland, the main urban areas, and major mineral deposits and mines. The underlying philosophy of separate development was that Africans should return to their independent homeland, and there develop socially, economically, culturally, and politically according to their own freely determined desires. The argument went that in this way, all South African nations—the white “nation” and the nine black “nations”—would have self-determination and not be forced to live under alien rule.

Self-determination only began, however, once the Africans entered their homeland. They were not given a choice of whether to move or not, though many of them had lived for generations in cities and never been near their designated homeland. Furthermore, many Africans came from diverse ancestries, with (for example) a Xhosa grandfather and a Sotho grandmother, or some other combination of the nine different groups. Now, however, they found themselves with a pass book that officially labeled them as belonging to one group or another and as citizens of that homeland. They were aliens in South Africa—a country that theoretically now had a white majority population.

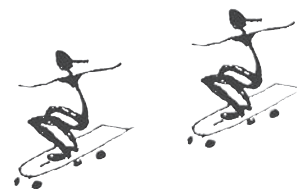
Verwoerd’s policy of “separate development” raised apartheid to a new level of systematized racism. This began the era of truly “grand” apartheid: not only did the petty racism of “whites only” park benches and beaches affect everyday life, now every moment of one’s life was determined by one’s racial



A Namibia monument commemorates fallen SWAPO soldiers who were killed by the South Africans at the beginning of the independence proceedings on 1 April 1989.

classification, from racially designated hospitals for one’s birth to racially designated cemeteries for one’s burial. Coloreds, Asians, and Africans could not move freely about the country, could not freely choose their place of residence or employment, and could not vote or own land. African workers in cities and on the mines were considered transients, and had to return regularly to their “homeland.” Only those with permits could live in “white” areas, and they were not allowed to bring with them their spouse or family, thus contributing to the breakdown of African family life. Blacks were forced to live in African, Asian, or colored townships on the perimeter of urban areas. Africans, coloreds, and Asians (but not whites) were required at all times to carry pass books, known as “Books of Life” because they contained all of a person’s identity, including marriage and driver’s licenses, birth certificate, and work permit.

In 1963 the apartheid regime granted the first of the Bantustans, the Transkei (a Xhosa “homeland”), limited self-government. Between 1976 and 1981, the Transkei, Bophuthatswana (Tswana), Venda (Venda), and Ciskei (Xhosa) were granted “independence” by the government, although no other government in the world ever recognized these “nations.” KwaZulu, KwaNdebele, Lebowa, KaNgwane, Gazankulu, and Qwa Qwa were declared “self-governing” in the 1970s. None of the homelands were ever economically viable. They consisted mostly of poor, eroded



land; few had any mineral deposits of note, urban areas, or industry. Families were left dependent on migrant laborers to send home their earnings from work in white areas. All of the homelands were abolished in 1994 and the land reincorporated into the Republic.

Opposition

Opposition to apartheid began immediately after the 1948 elections. Armed with the Suppression of Communism Act, which, despite its racist policies, earned South Africa support during the Cold War from the United States and Great Britain, the apartheid regime successfully crushed most resistance, however. The leading black opposition group was the African National Congress (ANC), whose members included Albert Luthuli (1898–1967; winner of the 1961 Nobel Peace Prize), Walter Sisulu (1912–2003), Oliver Tambo (1917–1993), and Nelson Mandela (b. 1918). In 1955 a Congress of the People adopted a Freedom Charter that called for a multiracial, democratic South Africa; the charter was adopted by the ANC.

By the early 1960s, as dozens of African nations gained their independence, South Africa faced increasing international condemnation. In 1961 South Africa left the British Commonwealth rather than abandon apartheid. In that same year the Dutch Reformed churches of South Africa left the World Council of Churches. South Africa also lost its vote in the United Nations and was banned from the Olympic Games as well as many international organizations. Under the leadership of Nelson Mandela, the ANC formed a military wing in 1961, Umkonto we Sizwe (“Spear of the Nation”) that resorted to violence in its resistance to apartheid. In 1963 Mandela and seven others were arrested and sentenced to life imprisonment.

The government now banned nearly all opposition organizations and placed many individuals either in prison or under house arrest. Verwoerd was assassinated in 1966, and under his successor, John Vorster (1915–1983), some aspects of petty apartheid were relaxed. The government’s decision in 1976 to require

mandatory instruction in Afrikaans in black schools, however, sparked off riots, first in the black township of Soweto and then across the country. The following year South African police murdered the Black Consciousness leader Steve Biko (1946–1977). In 1978, P. W. Botha (1916–2006) became prime minister and, while continuing to relax many apartheid policies, he took a tough stand against any opposition to the government. He also began to tinker with the apartheid system, giving coloreds and Asians limited political rights. He hoped thereby to co-opt these two groups, appease world opinion, and allow whites to remain in power.

Following Zimbabwe’s independence in 1981, South Africa and Namibia were the only remaining white-ruled countries in Africa, and tremendous pressures were building, both internally and externally, for change. South Africa faced increasingly strict international economic sanctions, which included U.S. corporations’ divestiture of their South African holdings. Internally, the need for more skilled labor led to the lifting of limits on black wages and the legalization of black labor unions with the right to strike. These and other factors required more than cosmetic changes to the apartheid system.

The End of Apartheid

In 1989 F. W. de Klerk (b. 1936) became prime minister and immediately announced the release of many black political prisoners. In February 1990 he declared in Parliament that apartheid had failed, that the bans on all political parties would be lifted, and that Nelson Mandela would be released after twenty-seven years of imprisonment. In 1991 all the remaining apartheid laws were repealed. After three years of intense negotiation, all sides agreed in 1993 to a framework for a multiracial, multiparty transitional government. Elections were held in April 1994, and Nelson Mandela became the first freely elected, majority president in South African history. In 1995 President Mandela formed a Truth and Reconciliation Commission, with Nobel Peace Prize winner Archbishop Desmond Tutu

Segregation is the adultery of an illicit intercourse between injustice and immorality. • **Martin Luther King Jr. (1929–1968)**

(b. 1931) as chair, to investigate human rights abuses suffered by the South African people under apartheid. The commission's stated purpose was not to punish but to help the country come to terms with its past, making it unique in human history. In 2003 President Thabo Mbeki (b. 1942, in office 1990–2008) announced that the South African government would pay 660 million rand (around \$85 million at the time) to about 22,000 people who had been detained or tortured, or who were surviving family members of those murdered during the apartheid era.

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See also Race and Racism; Tutu, Desmond

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Arab Caliphates

The leaders of the Sunni Muslims, or caliphs, were responsible for defending and expanding Islam, but their power extended to political, military, and financial policy as well. Each distinct series of caliphs—called the Pious caliphate, the Umayyad caliphate, or the Abbasid caliphate—was known for its policies and differing contributions to the Islamic world.

The word *caliphate* is derived from the Arabic word *khalif* (meaning “successor” to the Prophet Muhammad). Because Muhammad (570–632 CE) had not nominated anyone to succeed him as political and military leader of the growing Muslim community that he had established in Arabia, the question of who would succeed him divided his followers. One group of followers wanted to elect a man named Abū Bakr through majority allegiance. He was the father of ‘A’isha, one of Muhammad’s wives. Members of this group were called “Sunnis” because they followed the *sunnah* (the way of Muhammad). Muhammad himself used consultation and listened to majority views in temporal affairs. Another group of followers, who later became known as “Shi’as” (partisans), wanted a man named Alī to succeed Muhammad because Alī was a blood relative and the son-in-law of Muhammad. This rift was the first among Muslims and divided them into two major groups: Sunnis and Shi’as. The Sunni leaders were called “caliphs,” and the Shi’i leaders were called “imams” (religious guides).

Caliphate rule varied in the early Islamic world, which stretched from Spain to Syria. Although caliphs differed in style, they all were expected to keep Muslims united, repel threats to Islam, and continue the expansion of Islam in their respective areas. Despite

their expected championship of Islam, caliphates were characterized more by political, military, and financial administration than by religious fanaticism because most Islamic lands protected their religious minorities such as Jews and Christians.

Different caliphates became known for different achievements. Some became known for expanding the realms of Islam, others for achieving great artistic heights, revolutionizing natural sciences, and creating the first institutions of higher education.

Muslim scholars, scientists, and statesmen conceived new ideas and institutions. They also, however, improved upon their conquered subjects’ artistic and scientific achievements, which were the result of thousands of years of experience in different regions that now came under Islamic rule. Synthesis and syncretism (the combination of different forms of belief or practice) also changed Muslim rulers’ outlook in political, socio-economic, and military matters.

The Pious (or Orthodox) caliphate (632–656) was the collective rule of the first four caliphs: Abū Bakr, ‘Umar, Usman, and Alī. These “Pious” caliphs were the first companions and relatives of Muhammad. With the exception of Abū Bakr, they were assassinated, plunging Muslims into violent sectarianism and civil wars.

Abū Bakr established caliphal standards and expectations in a memorable speech that he delivered to Muslims immediately after receiving their trust and allegiance. He said, “O People! You have chosen me as your Chief, although I am not the best among you. I need all your advice and all your help. If I do well, support me; if I make a mistake, then set me right. To tell the ruler truly what you think of him is faithfulness; to conceal the truth is treachery. As long

as I obey God and His Prophet, obey me; wherein I disobey, obey me not.”

During the Pious caliphate Islam spread out of the Arabian Peninsula to Iraq, Syria, and Persia (Iran) in the east and to Palestine, Egypt, and northern Africa in the west. The fall of Sicily and Spain in western Europe and the fall of the Byzantine Empire in eastern Europe were coming soon. The Pious caliphate consolidated Islamic doctrines, compiled the Qur'an into one standard book (eliminating possible textual variations), created financial institutions that supported their welfare states, and set standards for future political and military rule.

The Umayyad caliphate, which was founded by the Banu Umayya family of Mecca, Saudi Arabia, ruled Syria (661–750) and Spain (756–1031). The Umayyads brought vast agricultural lands under their military control and created a fierce feudal aristocracy who trampled the rights of former landowners even though some of them had converted to Islam. To increase agricultural yield, the Umayyads extended irrigational networks, experimented with new and imported seeds, and regularized peasantry and tenancy. Expansion of the agricultural base further increased trade and business, leading to the rise of great cities such as Damascus. Muslim commercial links connected the Middle East with the Far East.

The same phenomenal rise in agricultural and commercial economy created towns in Islamic Spain such as Granada, Cordova, and Toledo, which became centers of advanced culture, higher education, and unprecedented religious tolerance among Muslims, Christians, and Jews. The Spanish caliphate ended in 1492 as the Catholic Reconquista (reconquest) ousted the last Spanish Muslims and Jews from Spain. The Syrian Umayyads lost their rule to a newly rising Muslim family, the Abbasids, their original rivals in Mecca.

The Abbasid caliphate (749/750–1258) ruled from its celebrated capital of Baghdad, Iraq. Its rule spread Islam into Persia (Iran), Central Asia, Afghanistan, and northwestern India. The Abbasids were known chiefly for intellectual, artistic, and scientific achievements. They were great patrons of scholarly research, most of which was the first of its kind in world history. Caliph al-Mamun (ruled 813–833) was one of the most distinguished Abbasid caliphs. From different parts of the region al-Mamun brought together scientists when he built Bait al-Hikma (House of Wisdom) in Baghdad. There Muhammad bin Musa al-Khwarizmi (780–850) produced the new sciences of algebra and algorithm. In the scientific and liberal culture of Baghdad, new areas were covered in astronomy, geography, philosophy, mathematics, natural sciences, anatomy, and medicine.

Under the Abbasids Muslim scholars and scientists translated into Arabic ancient Greek masterpieces of philosophy, arts, and sciences. These Arabic translations were further translated into the vernaculars of Europe, where this body of knowledge led to the rise of the Renaissance and rationalist thinking. Some Arab scholars dedicated their works to the Abbasid caliph al-Mamun, who had provided them with the best of libraries in world history.

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See also Islamic World; Muhammad

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Arab League

The Arab League is an organization of twenty-two countries whose purpose is to develop educational and economic policies and programs to benefit the Arab world. Although the Arab League was organized in 1945, its roots go back to the early 1900s. But a lack of unity and cooperation among its members has hindered the Arab League's success, and whether the league will be effective in the future remains questionable.

During the early 1900s most Arab countries were still under colonialism, but a growing number of Arab political leaders, especially those from Syria and Egypt, wanted more of a role in shaping the future of their countries. By 1932 leaders had made plans for the Pan-Arabian Conference, the purpose of which (according to a 1932 *New York Times* article) was to "combat imperialism and to free Arabian States from mandatory control." Calls for Arab unity increased, led by Egyptian diplomat Abdul Rahman Azzam and Iraqi prime minister Nuri Sa'id, who is credited by some historians with coining the name "Arab League." By 1944, at a conference in Alexandria, Egypt, the framework for the league was created, and on 22 March 1945, the official charter was signed. The Arab League's constitution declared that one of the Arab League's goals is "to promote cooperation among member states, particularly in matters of culture, trade, and communication" (*New York Times* 1945, 8). Seven countries were the founding members: Egypt, Jordan (then called "Trans-Jordan"), Saudi Arabia, Syria, Iraq, Lebanon, and Yemen. The league's first secretary-general was Abdul Rahman Azzam, whose previous experience included serving

as Egypt's minister of Arab affairs and undersecretary of foreign affairs. A strong proponent of Arab nationalism, Azzam would become the Arab League's liaison with Western governments as well as the league's spokesperson at the United Nations.

During its first year the league advocated for greater autonomy for those Arab countries still under colonial rule or occupied by foreign troops. The league expressed support for Libya (which had been under Italian rule until World War II), and it also spoke out on behalf of Syria, which, although an independent republic since 1941, still had French troops on its soil. The Arab League also wanted a solution to the problem of Palestine; members were opposed to further Jewish immigration into the region. They joined to mount an attack against the newly created state of Israel in 1948, but the attack was unsuccessful.

During the league's early years it did not have much actual power, but it was able to speak with a unified voice on issues that mattered to the Arab world. Secretary-General Azzam became well known for his diplomatic efforts at the United Nations; he served as secretary-general until he resigned in 1952. After Libya finally gained independence, it joined the Arab League in 1953. Next to join were Sudan in 1956, Tunisia and Morocco in 1958, and Kuwait in 1961. Other members include Algeria, Bahrain, Comoros, Djibouti, Mauritania, Oman, Qatar, Somalia, and the United Arab Emirates.

Lack of Unity

Although the idea of the Arab League showed promise, the organization's effectiveness has been hampered by members who at times refuse to work

together. Political divisions have often made consensus impossible. Since its inception the Arab League has acquired a reputation for inaction in the face of crisis. The Egyptian weekly newspaper *Al Ahram* observed in a 2002 retrospective that the Arab League had not been notable for success in handling inter-Arab disputes.

When problems arose in the Arab world, the league tended to react with anger or blame. For example, when Egypt's president, Anwar Sadat, decided to make a peace treaty with Israel during the late 1970s, the league members united and expelled Egypt from membership, moving meetings that had been held in Cairo to Tunis, Tunisia. A decade would pass before Egypt was reinstated. In addition to ongoing antipathy toward Israel (and the perception that U.S. foreign policy unjustly favors Israel), other issues led to feuds between member countries. During the late 1980s the league was unable to resolve a dispute over oil between Iraq and Kuwait. This dispute led Iraq's Saddam Hussein to order the invasion of Kuwait. The United States intervened, driving Iraq out of Kuwait during the first Gulf War.

U.N. Report

Although the Arab League has at times been an important voice for improvements in the Arab world, a United Nations report issued in 2002 showed how much needs to be done. Prepared by fifty Arab scholars, the report examined political, economic, and cultural problems in Arab countries and concluded that these countries were lagging behind other parts of the world. "Arab countries are the least free in terms of political participation, civil liberties and independent media," the report stated and also took Arab countries to task for their treatment of women. "More than half of Arab women are illiterate, and many suffer from legal and social discrimination. They also have the lowest levels of political participation; women have 3.5 percent of seats in Arab legislative bodies, compared with 11 percent in sub-Saharan Africa . . . [and] despite substantial investment in education, Arab schools are producing graduates ill-

suited to the global economy. Only 0.6 percent of Arabs use the Internet, compared with 54 percent of Americans" (*USA Today* 2002, 6A). And while several Arab nations, notably Dubai and Qatar, have embraced modernity and welcomed certain aspects of globalization, the majority of the member countries continue to have internal conflicts, usually between conservative forces that want theocratic rule and moderate forces that want some degree of secularization.

The rise of Islamic fundamentalism and the violent actions of the terrorist network al-Qaeda have intensified the divisions between moderate Muslims and those from more conservative countries. Whereas the league has issued policy papers that condemn terrorism, some member countries have actively supported it. And even when a Muslim despot mistreats his people, the Arab League still seems reticent to criticize a member country. Since 2002 members of the league have made a renewed effort to unite and develop new strategies, brought about by world events such as the U.S. invasion of Iraq, but the May 2004 summit, held in Tunis, showed that the league still has a long way to go: one leader walked out, and eight others didn't attend at all. Although a series of position papers emerged from the summit, including one that pledged to implement economic and social reforms and work toward peace in the Middle East, questions remained about how much would actually be implemented.

In 2007, several moderate Arab states tried to move the Arab League towards diplomatic solutions in the Middle East. The foreign ministers of Egypt and Jordan met with Israeli leaders in Jerusalem to discuss peace proposals, but although the meeting was historic, the subsequent reaction from many of the Arab League's member nations was not as positive. A majority still refuse to recognize Israel or engage in any talks, thus limiting what Egypt and Jordan could accomplish.

The Arab League has other unresolved issues, in addition to its relationship with Israel. Political disputes have persisted between Hamas and Fatah in the Palestinian Territories, and there has been civil unrest in countries like Lebanon, Iraq, and Sudan. It remains

My Palestinian intellectual friend tells me that he might be willing to admit that God in Hebrew said Jews could have Israel. But he said Allah did not speak it in Arabic to the Arabs. • **Arthur Hertzberg (1921–2006)**

to be seen what role, if any, the Arab League can play in solving the problems its member nations still face.

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See also Islamic World

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Archaeology

Archaeology, one of the four divisions of anthropology, studies artifacts left by past cultures in order to understand how groups and societies developed. Attempts at archaeology were made as long ago as the sixth century BCE, but the practice grew into a science during the late nineteenth century and has continued to evolve more holistically, seeking to explore past civilizations through ecology, environment, and culture.

Archaeology is a part of the anthropological four-field approach to studying past and present cultures. The biological, linguistic, sociocultural, and archaeological divisions of anthropology work together to research societies through areas such as diet, language, social structures, and kinships. Archaeology in particular attempts to understand, describe, and explain the construction and development of past cultures through the study of their material remains. In order to do this, archaeologists often incorporate interdisciplinary methodologies from other fields, as well as develop techniques to explore the numerous questions archaeological data may present.

It appears that people have always had an interest in groups that lived before them. Typically, most want to understand how previous cultures interpreted the world around them. For instance, during Egypt's eighteenth dynasty (1532–1305 BCE), a number of scribes wanted to know more about how those that lived before them constructed tombs, how people were interred, and how they interpreted the afterlife. To answer these questions they examined burials dating from centuries earlier and left graffiti to record their visits. During the sixth century BCE Nabonidus, a prominent king of the famous Babylonian empire,



The Temple of Warriors at Chichén Itzá, Mexico, an archeological site rich in material artifacts of the Maya culture (ninth–thirteenth centuries). Photo by Chris Howell.

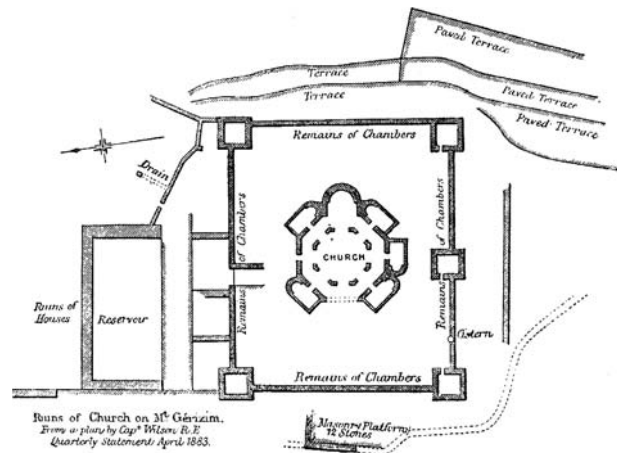
demonstrated his interest in the past by excavating at the city of Ur. He desired to know more about ancient Sumerian culture, a civilization then already 2,500 years old. Interestingly, the Babylonian king shared many of his finds with others by exhibiting them. His daughter, Bel-Shalti Nannar, continued her father's archaeological work following his death.

Archaeology has continued to play a part in how people investigate past cultures, but the discipline has undergone considerable developments. During the fifteenth century CE, for example, Cyriacus of Ancona, an Italian merchant, traveled the Mediterranean coast and Greece, drawing and gathering information about ancient monuments, copying inscriptions, and collecting objects from early civilizations. Because Cyriacus attempted to study ancient writings and material culture, some consider him to be one of the first archaeologists. Moreover, scholars began to challenge religious traditions through archaeology. For

instance, in 1655, Isaac de la Peyrere argued that stone tools found in Europe came from a culture that existed before the biblical Adam. The development of Assyriology and Egyptology during the nineteenth century CE also contributed to how scholars studied the civilizations of Assyria, Egypt, and others. Jean Francois Champollion's deciphering of the Rosetta stone in 1822 was a huge breakthrough in understanding ancient Egyptian languages and dialects.

Also during the nineteenth century, scholars and laypersons from Europe and other countries around the world sought to explore past civilizations through the study of material culture. Although most had sincere motives, some of the approaches to excavating were essentially treasure hunting. However, the growing study of evolution during this period influenced archaeology profoundly. Many scholars now began to investigate the origin and development of peoples and their cultures; digging at sites became more systematic. In the latter nineteenth century and into the twentieth, archaeologists began to focus on chronology, established the successive "three-age scheme" of stone, bronze, and iron, and searched more intensely for the beginnings of humankind. Anthropologists Charles Darwin (1809–1882), Lewis Henry Morgan, Edward B. Tylor, and others contributed greatly to this new direction. Although chronologies, the three-age scheme, and the quest for human origins would undergo numerous debates and controversies, the discipline of archaeology benefited and adopted more scientific approaches. Some significant contributions to the discipline must be credited to scholars such as Heinrich Schliemann (Troy), Flinders Petrie (the Near East), Leonard Woolley (Carchemish), Aurel Stein (Asia), Mortimer Wheeler (Britain), the Leakeys (Africa), and W. F. Albright (Israel/Palestine).

The 1960s and 1970s "New Archaeology," sometimes referred to as analytical or processual archaeology, brought a revolution to the field that is reflected in some fashion in the work of many archaeologists to this day. Lewis Binford, Fred Plog, William Longacre, and others took a more anthropological approach and sought to explore past civilizations holistically through ecology, environment, and culture. This



Detailed drawings of an excavated site are important tools in archaeological research. Here, a nineteenth-century sketch of the ruins of a church on Mt. Gerizim in Palestine.

"new" approach and philosophy has placed a permanent stamp on field and laboratory methodologies. Consequently, archaeological teams have grown to incorporate a blend of staff personnel that may include paleoethnozoologists, geologists, climatologists, and anatomists. Processual archaeology has also generated post-processual archaeology. This approach is similar to the New Archaeology, but also focuses on the inclusion of history and tries to interpret meaning in artifacts. Ian Hodder, Mark Leone, and others have contributed to the development of this methodology.

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See also Dating Methods, Archeological and Historical; Script Decipherment; Paleoanthropology

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Architecture

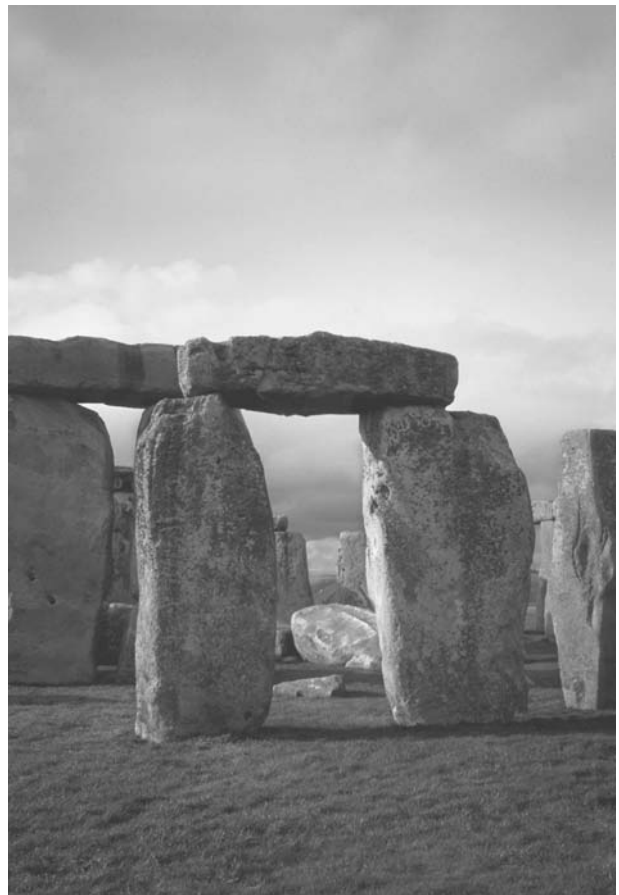
In the practice of architecture, the art and science of building environments for human needs, architects strive to design structures that are sound, useful to their inhabitants, and aesthetically pleasing to society—whether starkly monumental in structure (like ancient Stonehenge and the modern skyscraper) or elaborately embellished (like the Parthenon in Greece and Córdoba’s Great Mosque).

Since prehistoric times, people have created architecture to shelter their activities and to express societal or personal values. Usually the term *architecture* refers to a building or group of buildings, but the field overlaps with interior design and with landscape and urban design. Many architects agree with the ancient Roman architect Vitruvius (c. 90–c. 20 BCE), who wrote that architecture must be stable, useful, and beautiful. To accomplish this architects must understand (a) how to employ one or more structural systems to support the design, (b) how the design will be used once it is built, and (c) what a client or society will find visually pleasing. Therefore, architects are faced with choices regarding approaches to the building site, available materials, and building technologies.

Prehistoric and Nonurban Architecture

Nomadic humans of the foraging (Paleolithic) era (c. 35,000–8000 BCE) lived in caves and rock shelters, but they also created portable woven architecture—oval huts of vertical poles that were covered with hides or thatched reeds. In the Neolithic era (c. 8000–1500 BCE),

herders and farmers erected permanent settlements, including monumental buildings that merged with surrounding landscapes. They crudely quarried large stones (megaliths), moved them by barge and by sled on rollers, and raised them on earthen ramps to create



Stonehenge, the best-known monument of the Neolithic era, dramatically illustrates the concept of **trabeated architecture**—construction based on a post-and-lintel system. Photo by Carol Hermann.

trabeated (or post-and-lintel) structures (dolmens) of vertical columns supporting horizontal beams. The most famous example of such a structure, located on Salisbury Plain, England, is Stonehenge (c. 2750–1500 BCE), a series of concentric circles probably built to accommodate festivals held by related warrior tribes. The more common dolmen was a sepulchral chamber built of megaliths and buried within an artificial hill, called a cairn.

Little remains of more humble buildings, except their influence on the surviving vernacular architecture of villages around the world, rooted in the myths and traditions of the people. In African Cameroon each Bamileke village has a central open space, chosen as sacred by the ancestors. The adjacent chief's house, an aggrandized version of the others in the village, has bamboo walls fronted by a porch and sheltered by a thatched conical roof. In Cameroon's Fali culture, forms, orientation, and dimensions of the ideal human body inspire the design of residential compounds. The Dogon culture of Mali builds men's assembly houses, open-sided huts in which anthropomorphic wooden pillars, representing the ancestors, support a thick roof of dried vegetation that shades the interior but allows air to circulate.

A similar situation is found in North America, where the Anasazi people constructed "Great Houses," of which Pueblo Bonito in Chaco Canyon, New Mexico, is the largest known. Built in stages from the tenth to the mid-thirteenth century CE, the quarrying, timber cutting, and transport during the construction were done without metal tools, wheelbarrows, or draft animals. In its final form Pueblo Bonito resembled a "D" with a perimeter wall approximately 400 meters (about 1,300 feet) long. Sandstone walls defined adjacent living units accessed from openings in the wooden roofs. Hundreds of units encircled central plazas under which the Anasazi built subterranean sacred gathering places (kivas). Men entered a kiva—women were forbidden—through a hole in a domed ceiling of interlocking pine logs. Because the number of rooms at Pueblo Bonito far exceeds evidence of human habitation, and the desert locale made obtaining food a constant challenge, archaeologists believe that the Anasazi devoted many of the rooms to food storage. When threatened by

enemies, the Anasazi abandoned the Great Houses for dwellings built into the sides of easily defensible, south-facing cliffs, such as those at Mesa Verde, Colorado (twelfth–thirteenth centuries CE).

Ancient Temple Ziggurats, Tombs, and Palaces

Urban civilization—dependent on the development of writing, trade, diversified employment, and a centralized government—produced a variety of monumental building types, generally to glorify gods and god-kings. In the first cities of Mesopotamia, temples were raised heavenward on giant stepped platforms called ziggurats. Both temple and ziggurat were built of sun-dried mud brick using bearing-wall construction. The Ziggurat of Ur-Nammu (c. 2100 BCE) in Ur, Iraq, was faced in a more durable kiln-dried brick laid in a bitumen mortar. In Central America the stepped pyramids of the grand city of Teotihuacán (c. 250 BCE–650 CE), near present-day Mexico City, were faced with volcanic stone and stucco and probably painted bright colors. They formed the backdrop for the rituals and public events associated with the temples, which took place on the top platforms.

Of the monumental tombs, the most famous are the three Great Pyramids of Giza (c. 2551–2490 BCE) in Egypt, which exhibited ashlar masonry (carefully cut stone blocks), piled in tight rows and faced in polished limestone. Workers probably used wooden rollers and sleds on earthen ramps to elevate the heavy stone blocks, and levers to place them in their final locations. These tombs memorialized god-kings for eternity and were seen as ladders for royal spirits to reach the heavens. In Greece beehive-shaped tombs survive, such as the Treasury of Atreus (c. 1300–1200 BCE) at Mycenae, where a vault of corbelled stone (formed by laying each course of stone slightly inward and beyond the previous row until it forms a narrow arch) capped the subterranean main circular chamber. The tomb, half buried until excavated in 1878, remained the largest uninterrupted interior space in Europe for over a thousand years, until the Pantheon in Rome (built in the first century CE), exceeded it in size.

A third type of monument served rulers during their lives. The enormous Assyrian Palace of King Sargon II (c. 720–705 BCE) at Dur Sharrukin, modern Khorsabad, Iraq, represented his combined secular and sacred authority and intimidated his foes with the carved imaginary beasts and scenes of military prowess that decorated its mud-brick walls.

The Greek Temple

The ancient Greeks influenced later Western builders with their post-and-lintel building tradition. Their three types of orders—systems of columns supporting entablatures—were distinguished by proportion and decoration, Doric being the most simple, Ionic more elegant in proportion than the Doric, and the Corinthian the most elaborate. Stone blocks of limestone and marble were held in place by metal clamps and dowels, and terracotta tiles covered the sloping wooden roof rafters. The apex of Greek architecture, the Parthenon temple (448–32 BCE), designed by Kallikrates, redesigned by Iktinos, with construction supervised by the sculptor Pheidias, was meant to be the focal point of Athens's raised sacred precinct, the Acropolis. The Parthenon featured a

stepped platform and an exterior row of columns (or colonnade) that sheltered a central room housing a gigantic statue of Athena. The temple's proportions, determined by harmonious numerical ratios, were given life by the slight curvature of lines (called entasis), so components appeared to resist the weight imposed on them from above. (The entire temple was marble, even the roof.) Surfaces were stuccoed, painted, and embellished with colorful relief sculpture and friezes much admired for their graceful naturalism.

Roman Innovations and Their Eastern Progeny

Ancient Roman buildings, complexes, and new towns were regimented by simple geometric spaces related along clear axes and were often constructed using new materials and technologies. Voluminous interiors were created by using the semicircular arch, a method of spanning space with many small wedge-shaped elements that balanced against one another. Three-dimensional extrusions of the arch formed tunnels, rings, domes, and other types of spaces. The Romans employed concrete—a mixture of cement, water, and aggregate that can take on many



The architects who designed the Parthenon as the focal point of the Athenian Acropolis perfected an anthropometric approach to design, including its proportioning system and subtle optical refinements. Photo by David M. Breiner.

flowing shapes—and faced it in stone or coursed brick and tile. The best-known examples of Roman architecture, the Pantheon temple (117–126 CE) and the Colosseum amphitheater (c. 70–80 CE), both in Rome, had interiors that were spatially exciting, their concrete surfaces lavishly finished with multicolored marbles, gilding, and sculpted detailing. The Pantheon, the result of sophisticated engineering despite its apparently simple dome shape, is one of the most remarkable structures existing in Rome today; from the inside the eye is drawn by a circular pattern of coffers (recessed panels) toward the ceiling (about 43 meters, or 143 feet, high at the summit), where light flows through a 9-meter- (29-foot)-wide oculus (central opening).

During the waning years of the Roman Empire in Western Europe, Christians adopted the multipurpose basilica as the model for their churches, such as Old Saint Peter's (begun c. 320 CE) in Rome. This multi-aisled building featured parallel stone colonnades that supported the masonry walls above. Those in turn held up a roof structure of wooden trusses, rigid triangular frames that resulted in the typical gabled roof form. The glittering, glass mosaic surfaces of the interior were hidden by a bare brick exterior. Byzantine Christians in the eastern half of the empire chose Roman vaulted structures as their models, resulting in the Cathedral of Constantinople, Hagia Sophia (532–537 CE), by Anthemios of Tralles and Isidorus of Miletus. The enormous masonry dome, though it rested on four curved triangular surfaces (called pendentives) seemed to float unsupported above the interior, thanks to the ring of windows at the base of the dome and the light-reflecting surfaces of mosaic and marble throughout the vast interior. Also inspired by Rome, Islamic builders developed a new building type for communal worship, the mosque. The Great Mosque (eighth–tenth centuries CE) in Córdoba, Spain, exhibited the horseshoe-shaped arches of alternating stone and brick bands that became typically Islamic, while innovatively stacking the arches in two levels, thereby creating a limitless sense of space. Dazzling marble and mosaic decoration was limited to stylized vegetation and other nonrepresentational patterns, according to Muslim practice.

Beyond Rome's orbit, in the Buddhist monastery at Sanchi in India, the dome of the Great Stupa (first century BCE–first century CE) enshrined important relics. (Stupas, religious structures fundamental to the Buddhist world, were first constructed to house the cremated remains of the Buddha after his death in 483 BCE.) Protected within a wall featuring four elaborate gateways, the earth-and-rubble-filled dome of the Great Stupa represented the mountain of the world. Pilgrim worshippers circumambulated the building on walkways at two levels, reflecting the Buddhist belief in cyclical Earthly suffering that was only relieved upon reaching nirvana.

The Middle Ages

In the centuries after the Roman Empire, European Christians supported powerful monasteries, whose builders turned to bearing-wall construction in limestone, granite, and sandstone. Master builders maintained the basilican church form (a rectangular building with side aisles separated from the center nave by colonnades), but ultimately they replaced the simple plan and trussed roof with more complex solutions to the problems presented by increasing numbers of pilgrims and concerns over fire safety. During the Romanesque Era (c. 1050–1200), so called due to the revival of Roman (that is, semicircular) vaulting techniques, builders experimented with heavy stone-vaulted ceilings and extended side aisles around the church's perimeter to improve circulation for pilgrims. Extensive sculpted ornament in abstracted forms greeted visitors with Christian lessons of good versus evil. The French church of Saint-Sernin (c. 1070–1120) in Toulouse exemplified this movement.

Structural experiments coalesced in the later twelfth century and throughout the thirteenth, during the Gothic era, led by northern France, which dominated Europe at that time. Gothic verticality, aspiring to express divine loftiness, combined with great visual coherence at Chartres Cathedral (1194–1220), where the minimal stone skeleton supported walls of stained glass illustrating sacred and secular themes. This effect was made possible through the

combined use of the structurally efficient pointed arch, the framework of arched ribs (rib vaults) that allowed lighter vault panels, and the flying buttress that supported the vaults outside the building. Broad and steep roofs of innovative wood truss design protected the church vaults. A very high level of roofing technology was also evident in the contemporary wooden stave churches (using post-and-beam construction) of Norway.

Around the same time, builders in south and east Asia likewise developed impressively tall structures to house images of their gods and to visually connect Earth with heaven. Hindu Indians created the Visvanatha Temple to Siva (c. 1000) at Khajuraho, in the state of Madhya Pradesh. Inspired in design by a mandala (cosmic diagram), the temple's "grid plan" featured a sequence of increasingly important spaces, concluding at the inner sanctum with its image of Siva. Seemingly countless voluptuous sculptures covered the exterior surfaces that climaxed at the mountain-like tower over the inner sanctum. In China and Japan, Buddhist pagodas served similar uses but were characterized by their winged eaves and centralized plans.

In Europe continued insecurity encouraged the powerful to live in fortified castles. A moat and high walls with towers protected inner courts and the main

multistoried residence, called a keep or donjon (the word *dungeon* is a derivative). By the latter Middle Ages, improved security fostered the development of the less-fortified, but still grand, manor house; the main room, or great hall, a multifunctional entertainment space, required sturdy roof support in the form of various trussed solutions. The Islamic rulers of Spain produced luxurious, sprawling palace complexes, such as the Alhambra (thirteenth–fourteenth centuries) in Granada. The gardens interspersed throughout the complex provided refreshing water, fragrant plants, and soft, indirect lighting. Rooms had ethereal domes, whose structure was veiled by *muqarnas*, open, honeycomb-like cells made from stucco or wood.

Idealized Plans and the Renaissance

Beginning in the fifteenth-century Italian Renaissance, men with humanistic educations, not just practical building experience, aided by familiarity with classical antiquity, mathematics, and orthogonal drawing, won many architectural commissions. Their buildings and publications argued for the unity of architectural practice and theory. Filippo Brunelleschi's Cupola (1417–1434), or dome and lantern, for the Cathedral of Florence combined a Gothic pointed profile and a



The Villa Rotonda (or Villa Capra) merges religious and domestic symbols. Its domed central hall and four matching porticoes dominate the bucolic site and make it among the most memorable achievements of the Italian Renaissance. Photo by David M. Breiner.

Pantheon-like concentric grid with his original ideas of a double shell, interlocking brick pattern, and inventive construction mechanisms. Sophisticated uses of Roman ideas also characterized the work of Leon Battista Alberti, whose classically grand Church of Sant'Andrea (begun c. 1470) in Mantua, Italy, derived from ancient building types, proportional systems, and the classical orders. Its façade—a classical temple front and triumphal arch, with two sets of Corinthian pilasters on the porch—belies the grand interior: an immense barrel-vaulted nave flanked by tall chapels.

Efforts to supersede classical accomplishments were evident in the contemporary architecture of Rome. The first grand scheme by Donato Bramante (1505) for rebuilding the Basilica of St. Peter affirmed the humanist interest in the idealized centralized church plan. Under Michelangelo's guidance the design of the basilica's cupola (1546–1564) was largely resolved, producing a cohesive and influential scheme that was the last of the great purely masonry domes. Michelangelo also designed a monumental civic center, the Campidoglio (begun 1538), its complexity organized by a strong central axis, colossal pilasters on the building facades, and the view over the city.

Renaissance ideas spread from Florence and Rome. Near Venice, Andrea Palladio, an experienced stonemason and a humanist scholar, advanced his own influential architectural treatise; by the eighteenth century most educated people (including Thomas Jefferson in America) had his *Four Books of Architecture* in their libraries. In his design for a suburban residence near Vicenza, Italy, the Villa Rotonda (begun 1566), he appropriated the portico (four, actually, one on each side of the square structure) and central domed hall formerly associated with religious buildings. The building is famous for its idealized siting, harmonic proportions, simple geometries, and clear axial relationships. Venice's powerful nemesis, the Ottoman Empire, produced Palladio's counterpart, the architect Sinan, whose skillful designs for central-domed mosques with stunning tile work were represented by his Mosque of Selim II (1568–1575) in Edirne, Turkey.

Idealized masonry monuments of the West contrasted with the idealized wooden post-and-lintel

structures of the East, climaxing in Ming dynasty (1368–1644) China. The focal point of Beijing's monumental Forbidden City was the emperor's principal throne room, the Hall of Supreme Harmony (begun 1627). Though grander in size and ornament than other Chinese halls, its arrangement of standardized interchangeable parts was similar. A grid of wooden columns supported fingerlike brackets, which in turn held boxlike truss beams (or stepped roof trusses) that produced the characteristic curve of the tiled roof. Japanese builders transformed the Chinese architectural system by favoring more subtle asymmetrical arrangements and indirect paths of circulation, from Sen no Rikyu's intentionally rustic Tai-an tearoom, Myoki-an Temple (c. 1582) to the impressive Imperial Katsura Palace (largely c. 1615–1663), both in Kyoto.

Baroque Vitality

In the seventeenth-century West, Renaissance priorities blended with the dynamic growth of science, nationalism, and religious fervor. Designs, often structurally and spatially complex and characterized by illusionistic effects, were best appreciated by a person moving through them, for example, Gianlorenzo Bernini's Piazza (1656–1667) at St. Peter's in Rome. Intense ornamentation was common during the period and spread to Spanish and Portuguese colonies in Latin America. The monumental enlargement of the Château at Versailles (1667–1710), for France's autocratic "Sun-King" Louis XIV, had a network of axial pathways that led to the king's central bedchamber. In the château's Hall of Mirrors, innovative large mirrors created infinitely reflecting vistas of the vast gardens. Christopher Wren, who was a scientist before becoming an architect, reworked continental influences in his redesign for St. Paul's Cathedral (1675–1711) in London, where the cupola combined an inner masonry shell with a lightweight outer dome and lantern. In Bavaria structural experimentation, illusionism, and spatial complexity climaxed in works such as the Residence of the Prince-Bishops (1719–1753) in Würzburg, by Johann Balthasar Neumann.



Historical Revivals

Eighteenth-century architectural influences included the Enlightenment, which emphasized the individual person; increased historical scholarship, especially archaeology; and the Industrial Revolution. Giambattista Piranesi's widely disseminated, imaginative views and reconstructions of ancient Roman ruins aroused awe. In England, Robert Adam's renovation of Syon House (1760–1769) in Middlesex sought to authentically re-create the architecture of classical Rome. Yet with Horace Walpole, Adam also created the mysterious, picturesquely asymmetrical Gothic Revival Strawberry Hill (1749–1763) at Twickenham, its different parts appearing to be centuries-old accretions. French architect Jacques-Germain Soufflot combined Gothic structural lightness with classical spatial purity in his Church of Ste.-Geneviève (1755–1780) in Paris. Étienne-Louis Boullée drew unbildable projects, like the Cenotaph to Isaac Newton (1783–1784), a classical but sublime giant hollow sphere that celebrated the achievements of the great physicist. It connected use and form in a direct manner called “architecture *parlante*.” The mining of historical

styles for contemporary projects continued into the nineteenth century, highlighted by Karl Friedrich Schinkel's Greek Revival Altes Museum (1824–1830) in Berlin, and the Gothic Revival Houses of Parliament (begun 1835) in London, by Charles Barry and A. W. N. Pugin.

By the mid-eighteenth century, Europeans began to seek increasingly private and comfortable residences. Renovated (1732–1739) in the delicate Rococo style by Germain Boffrand, the Hôtel de Soubise in Paris incorporated intimate interiors that were easily heated by improved fireplace design and easily illuminated by large windows and mirrors. Residences of the wealthy incorporated dumbwaiters and corridors to allow greater separation between masters and their servants. The English aristocracy and North American colonists also turned to making more comfortable buildings, typically favoring a restrained neo-Palladian approach to design, such as Thomas Jefferson's Monticello (1768–1782) in Charlottesville, Virginia.

Early Modernism

In the nineteenth century, the Industrial Revolution expanded its impact on European architecture. France's



Frank Lloyd Wright's Robie House adapts horizontal lines of the prairie into long brick planes, continuous window bands, and deep overhangs. Photo by David M. Breiner.

Architecture is the art of how to waste space. • Philip Johnson (1906–2005)

official architectural school, the École des Beaux-Arts, emphasized “universal” architectural ideals found in primarily classical models, but the buildings of its alumni, including Charles Garnier’s exuberant Opéra (1860–1875) and Henri Labrouste’s Bibliothèque Ste.-Geneviève (1838–1850), both in Paris, united those lessons with contemporary technology. The Eiffel Tower (1887–1889), by Gustave Eiffel, epitomized the celebration of modern materials and their logical assembly. Conversely, William Morris, the most significant British voice at the time, protested against the social upheaval and shoddy craftsmanship associated with the Industrial Revolution. His own home, The Red House (1859–1860) in Bexleyheath, Kent, designed by Philip Webb, exemplified his Arts and Crafts Movement with informal, vernacularly derived forms and materials that hearkened back to a simpler time.

American architects adapted these British ideas to their own context. Balloon-frame construction (pre-cut timber studs connected by machine-made nails), which was sheathed with wooden shingles, allowed more informal, open interior layouts that were easy to heat with American central heating systems and easy to cool during the hot American summers. The epitome of the American Shingle Style was the Mrs. M. F. Stoughton House (1882–1883) in Cambridge, Massachusetts, by Henry H. Richardson. Americans continued to take the lead in residential design with the work of Frank Lloyd Wright, whose inspiration came from nature, simple geometries, and exotic cultures. Wright’s F. C. Robie House (1908–1910) in Chicago climaxed his search for the “Prairie House.” The building’s strong horizontality and locally inspired ornament harmonized with the prairie of the Midwest. Abstracting Japanese and other prototypes, he created transitional zones that wove together exterior and interior space and effortlessly connected interior spaces around the central hearth.

Modernism

Seeking to express contemporary life and technology, modern architects increasingly relied on modern



The Seagram Building relies on a limited palette of exquisite materials arranged according to a strict three-dimensional grid, thereby demonstrating Mies van der Rohe’s maxim “less is more.” Photo by David M. Breiner.

materials, exposed structure, and undecorated compositions that were open and asymmetrical. Many designers searched for schemes that would be universally valid in a world made more homogeneous by technology. The results spanned from a machine-like precision to an organic expression of use and/or place.

Iron and steel structural frames increasingly transformed architecture beginning in the late nineteenth century. European Art Nouveau designers copied natural forms and exposed the sinuous iron structure in their glass-filled buildings, such as Victor Horta’s Tassel House (1892–1893) in Brussels,

Belgium. In American cities the demand for space, the need to cluster offices, and the desire to create bold symbols of business set the stage for modern skyscraper construction. Tall buildings depended on the passenger elevator and the development of metallic cage construction that was fireproofed, insulated, and ornamented in brick, stone, or terracotta. Louis Sullivan's Guaranty Building (1894–1895) in Buffalo, New York, exemplified early attempts to devise a visually coherent solution to a new building type. Ludwig Mies van der Rohe, the master of the steel and glass skyscraper, pared away visual clutter to express the purity and careful proportions of the steel skeletons, as exhibited in his Seagram Building (1954–1958) in New York City. Other building types were similarly transformed by metal construction, for example Kenzo Tange's steel tensile suspension design for the National Gymnasium (1961–1964) in Tokyo, Japan.

The rediscovery of concrete as a primary building material and the innovative addition of metal bars to create reinforced concrete structures expanded the scope of modern architecture. Le Corbusier (born Charles-Edouard Jeanneret) established his international reputation with machine-age designs like the pristine concrete box of the Villa Savoye (1928–1929), near Paris; and later he led the expressionistic Brutalist movement with the aggressive, roughly finished concrete forms of the Capitol Complex (1950–1965) in Chandigarh, India. The contours and textures of subsequent reinforced concrete buildings ranged from the soaring openness of Jørn Utzon's Opera House (1956–1973) in Sydney, Australia, to the contemplative enclosure of Tadao Ando's Koshino House (1979–1981) in Hyogo, Japan.

Over time architects increased their use of glass from the exterior "curtain" (non-load-bearing) walls of Walter Gropius's Bauhaus Building (1925–1926) in Dessau, Germany, to the strut- and mullion-free glazed exterior of Norman Foster's Willis Faber Dumas Office Building (1975) in Ipswich, United Kingdom.

Some highly successful twentieth-century architects gained respect by adapting modern, universal

themes to local conditions and cultures in their work. Among the most noteworthy were Alvar Aalto's Civic Center (1949–1952) in Säynätsalo, Finland; Louis Kahn's National Assembly Building (1962–1974) in Dacca, Bangladesh; and Renzo Piano's Jean-Marie Tjibaou Cultural Center (1991–1998) in Nouméa, New Caledonia.

Architecture Enters the Twenty-First Century

Contemporary architectural trends continue to respond to the issues of culture and technology. Like



An example of tensile architecture: the Elrey Jeppesen Terminal at Denver's International Airport uses steel cables and Teflon-coated fiberglass to create an airy interior, while the exterior mimics nearby peaks of the Rockies. Photo by David M. Breiner.



The Jean-Marie Tjibaou Cultural Center is an exemplar of contemporary hybrid solutions, combining diverse perspectives of design and the shell-like vernacular huts of local villages.
Photo by Susan I. Frostén.

many leading architects, Rem Koolhaas has questioned societal beliefs and institutions in his Netherlands Dance Theater (1987), The Hague. Innovative solutions for structure and interior illumination aided the design of Norman Foster Associates giant Hong Kong Bank (1986) in Hong Kong, China. Tensile membrane structure, such as the Denver (Colorado) International Airport (1994) by C. W. Fentress, J. H. Bradburn & Associates, allows large spaces to be enclosed, while the curving structural steel columns of Beijing's National Stadium (the Bird's Nest)—designed for the 2008 Olympics by the Swiss firm Herzog & de Meuron in collaboration with Chinese artist and architect Ai Weiwei—weave a permeable outer layer that can be crossed or even climbed, allowing people to feel absorbed rather than smothered by the enormous structure. Digitized imaging software facilitated the titanium-clad design of Frank Gehry's Guggenheim Museum (1997) in Bilbao, Spain.

In the growing trend of “green” or ecologically sustainable design, designers conserve materials and energy, provide occupants with abundant fresh air and

natural light, and carefully manage waste. Among the best-known examples is William McDonough & Associates Offices for Gap, Inc. (1997) in San Bruno, California, with its careful siting, vegetated roof, and other “green” elements. Kenneth Yeang's Menara Mesiniaga Building (1991) in Kuala Lumpur, Malaysia, connects sustainable design with the local traditions of Southeast Asia.

A third trend is the revival in vernacular traditions that has been building since at least Hassan Fathy's design for the Village of New Gourni (1945–1948) at Luxor, Egypt. In the United States vernacularism has inspired the pedestrian-friendly “new urbanism” movement publicized by the design of Seaside, Florida (begun 1981), by Andres Duany and Elizabeth Plater-Zyberk.

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See also Architecture, Vernacular; Art—Ancient Greece and Rome; Art—European; Art—Japan; Art—Pre-Columbian Central and South America



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Architecture, Vernacular

The term *vernacular architecture* applies to structures built based on local traditions and skills passed down through generations, not on the designs of professional architects. Building techniques vary widely depending on function, location, and available materials. Although historians and educators have largely overlooked vernacular architecture, its practice today continues to shape most of the world's built environment.

Vernacular architecture is the term now internationally applied to buildings that are constructed according to indigenous traditions rather than a professional design. Most of the world's buildings fall into this category; people of innumerable cultures have built structures to meet their physical, social, economic, and spiritual needs. Because many cultures have not been literate, or literacy has been confined to the elites, vernacular traditions have often remained unrecorded and their history is difficult to ascertain. Archaeological excavations have frequently concentrated on religious, palatial, and military sites, but at Sumer for example, the ancient Mesopotamian region of southern Iraq, archaeologists have uncovered dwellings dating back to the fifth millennium BCE, revealing plans, structures, and spatial organization that are similar to settlements extant today.

Certain examples of early art, such as tomb paintings of Middle Egypt or Roman mosaics in Carthage, on the gulf of Tunis, depict the materials indigenous peoples used in their buildings, including reed thatch, earthen bricks, and clay tiles. Ancient artifacts may also illustrate vernacular building styles; a third-century-CE bronze mirror from Nara, Japan, bears

images of house and granary types that are still built in Southeast Asia. Clay models of houses placed in graves in Greece, Mesopotamia, and China, some including figurines, show their structure and indicate how they were used. While unbroken sequences of the history of buildings have sometimes been hard to establish, dendrochronology (tree-ring dating) and carbon dating have been applied in European vernacular studies to give a record spanning two millennia. In some countries, wills, inventories, and other documents have disclosed details that relate to property. Inevitably however, the history of vernacular building in much of the world is undocumented, and there is much room for research in the field.

Built to Meet Needs

Building traditions differ widely across the globe, but some requirements are common, mainly the provision of shelter for families. It is not known how many dwellings currently exist in the world; estimates range between 800 million and 1 billion to accommodate the 2009 population of more than 6 billion people. Of these, over three-fourths are vernacular, built by the owners or by skilled members of their communities, whose traditions in building have been passed from generation to generation.

Caves may have provided the earliest dwellings; evidence of cave occupancy in Spain and France dates from Paleolithic times. (In 2009, some 50 million people live in caves, particularly in China, but also in Europe, North Africa, and the Middle East.) Other peoples who hunted game and gathered fruits lived in the forests where they made temporary shelters of branches and leaves, as the Orang Asli of Malaysia

or the East African Hadza still do. Adapting to local conditions, peoples such as the Evenki of Siberia made their huts of wood from the taiga, or in the case of the seal-hunting Inuit of northern Canada, built domes of snow blocks.

Traveling in more arid regions, many tribes camped under tents made from strips of woven goat's hair; such "black tents" are still used by the Bedouin of Arabia. Desert nomads move with flocks of camels or goats, often by prearranged routes so that the sparse vegetation is not overgrazed and may recover. In more fertile regions such as the grasslands of Central Asia, the Kyrgyz and Mongols live in the yurt or *ger*, a dome raised on a cylinder of lattices covered with large felts that are tied in place. After a stay of weeks they dismantle the domes and move to new pastures where the women, who make all the components, rapidly re-erect them. As the examples of nomads indicate, the kind of dwelling used by a culture is partly conditioned by the economy in which its makers subsist.

Mankind cannot survive without water, and many cultures live close to rivers, often in the valleys or near the sea. Fishing peoples may construct dwellings on stilts or piles over the water, enabling them to protect their fishing grounds. Some, like sea nomads of the Philippines, live on boats as much as on land. The majority of vernacular buildings, however, are built by sedentary peoples who live in one place and who may be engaged in agriculture, livestock-raising, and the marketing of produce, or in craft occupations such as pottery or weaving, that meet material needs.

Although some vernacular buildings, including farmhouses, are found in relative isolation, most are located in hamlets and villages or in small towns and urban neighborhoods. They may house nuclear families of parents and children, common in North America or Western Europe. In much of the world, however, extended families of three generations, or the spouses and children of siblings, all live together. Suitably large houses may be built for them, as in



Nomadic tribes in fertile regions live in dwellings such as yurts, with easy-to-assemble components that allow for quick moves to new pastures.

Kashmir or western Anatolia, or several single-cell huts may be enclosed in compounds, as is common in West Africa.

Within the farmyard or compound, economic functions are accommodated in special structures. Among the most frequent are granaries, raised above ground to repel damp and rodents. Stables for horses and barns for draft animals or for wintering cattle are customary, though recently many have been adapted to take mechanical equipment. Among vernacular buildings that functioned until the early twentieth century were blacksmith's workshops and outdoor baking ovens, while watermills and windmills were widely used in Europe to provide the power for grinding corn or pigments, draining wetlands, and sawing timber. Many of these functional buildings were lost with industrialization, but others, such as potteries and carpenters' workshops, continue to be productive in many parts of the world.

Numerous vernacular buildings are constructed for social functions that relate to status, power, or belief. A special residence may be constructed by some cultures in honor of a chief, a prince, or a spiritual leader, perhaps as a larger version of the customary dwelling. In some instances, such as the Dyak peoples of Borneo or the indigenous forest cultures of western Amazonia, whole villages are accommodated in single buildings, usually called longhouses, in which all the families occupy spaces beneath one roof. Often the families belong to one clan, and the spaces may be arranged in hierarchical order.

Some buildings may have a ceremonial function, and in settlements the world over prominence is given to buildings that relate to religious beliefs. Temples, mosques, and churches house worshippers, while shrines protect votive objects or mark sacred sites. Priests from such religions may officiate at the selection of a site, bless the stages in the building of a house, and preside at a ceremony to mark its completion. Often the dwelling is itself symbolic, being perceived as having cosmic or anthropomorphic associations, as is the case in Hindu tradition. This serves the important function of reaffirming for the occupants the spiritual values of the culture to which they belong.

The great variety in the size, forms, and construction of houses and related buildings throughout the world is largely due to the diverse nature of specific cultures. Some require communal rooms in which whole families live together, while others have separate entrances to distinct living areas for males and females. The differences are also attributable to respective economies: Chinese hill farmers require accommodation for their livestock and their families, and the structures they build are quite different from the narrow frontages of shophouses—usually two stories high, and built in rows connected by deep courtyards—that are typical of Chinese urban neighborhoods. But whatever the culture and its people's needs, buildings are strongly conditioned by the environments in which they are situated.

Responding to the Environment

Vernacular buildings reflect the peculiarities of their locations, from grassland steppes, deserts, and plains to forests, valleys, lakesides, or mountains. Where land is freely available compounds may spread, but where sites are constricted houses of two or three stories may be constructed, some having stepped levels where gradients are steep. While the majority of circular-plan buildings have a conical roof of poles converging at the apex, the roofs of rectangular and square-plan buildings are pitched to a central ridge. With modifications in plan, such as a T, an L, a square, or a rectangle defining a courtyard, the majority of pitched-roof vernacular buildings take forms that are found with many variants worldwide. In tropical Sumatra (in Southeast Asia), for example, upswept roof ridges on the houses of the Minangkabau end in finials or small spires (a symbol of the horns of the sacred water buffalo). These roofs are effective in expelling warm air and keeping the interiors cool.

Climate is an important environmental factor in the design of vernacular buildings, but extremes of climate and natural hazards can do structural damage, with high winds lifting off roof cladding in the Caribbean and flood waters reducing clay walls in

Houses are built to live in, not to look on; therefore, let use be preferred before uniformity, except where both may be had. • Francis Bacon (1561–1626)

Bangladesh. Volcanic eruptions threaten Central America and earthquakes reduce literally thousands of buildings to rubble in Turkey and other seismic regions, though frequently it is the vernacular buildings rather than the concrete ones that enable people to survive a major disaster. In Kashmir and Peru, technologies have been developed that permit buildings to be flexible in earthquakes, but as natural disasters are unpredictable and may not recur, the main concern of most builders is to cope with the vagaries of the seasons and the weather.

In humid tropical climates, houses are constructed so as to encourage air circulation, while those in arid climates may be sited to reduce exposure to the sun; buildings placed around courtyards, for instance, offer continual shade during the day. In temperate and cold regions thick earth walls retain solar heat and warm the interiors; deep layers of insulating thatch are also used. Passive cooling devices such as wind scoops are used in the Middle East, while radiant stoves keep houses warm in the extreme winters of Central Europe. By such means builders have been able to create comfortable internal conditions. Even so, they are dependent on the material resources available to them, and these also exert their influence on the forms of the building.

Perhaps the most widely used material in vernacular building is earth. Whether it is molded to shape, rammed between wooden planked molds, mixed with straw and compressed in adobe blocks, or fired in kilns and made into bricks, earth is ubiquitous and employed in every continent. Factors such as particle size affect its suitability but in some regions, such as Yemen or southern Morocco, multistoried buildings of rammed earth have lasted centuries and are still being constructed. Clay is also used in combination with interwoven panels of willow or hazel wood in the technique, common in Britain, known as wattle-and-daub. Although techniques of molded mud can be used to make vaults, flat roofs on clay buildings are usually constructed with log poles, such as in the pueblos of the southwestern United States. In regions such as Tunisia or Egypt, where there is little wood, palm trunks are used.

Stone is strong and suitable for constructing walls when pieces of manageable size can be found, but it is less widely employed than clay. Time-consuming to quarry and heavy to transport, stone has been principally used in elite architecture rather than in the vernacular. Brick is an economic alternative to stone, with standardized sizes and techniques for laying courses, and the use of mortar to ensure stability. Brick building came to England from the Netherlands, and later the British introduced the technique to Africa. Brick and tile traditions were developed independently in China, where the weight of roofs was often borne by internal wood frames rather than by brick walls.

Although a material may be accessible another may take preference over it for economic reasons, or on account of its relative suitability. Finland, for instance, has immense resources of granite but its vernacular buildings were built of wood from the vast forests. Japanese builders constructed their traditional *minka* houses in timber, even though stone was available; for adherents of the Japanese Shinto religion the choice of a living material was a spiritual matter.

Timber has been extensively used and is renewable over time, though the destruction of the forests makes building wood structures unfeasible in many countries. Log construction, with round or squared timber notched to provide secure and interlocking corner joints, is basic to the vernacular traditions of Scandinavia, eastern Europe, and the Alps, from where it was brought by migrants to the United States. An alternative system is timber framing, in which a box-like skeleton is made of jointed wood, the panels being filled with wattle-and-daub, or with bricks laid in patterns as they are in northern Germany.

In some tropical regions timber is less readily obtainable, so bamboo, which is technically a grass, is grown and used for building. Fast growing and flexible, it is employed as a structural material in Southeast Asia and Indonesia, but it is also stripped and made into matting for lightweight walls and roof covering. Palm leaves are often used for wall cladding and for thatching roofs in the Pacific islands, but the principal thatching materials in much of the world are grass

or reed. Bundled and secured in overlapping layers, thatch provides a water-resistant cover as effectively for a rectangular plan as for a circular one. Vernacular builders have employed natural materials for centuries, but by replanting and recycling them, and by passing on their practices to succeeding generations, they have been able to remain in the same locations without depleting the resources of their environments.

Vernacular architecture has shaped the buildings of the world's peoples throughout history, but it has been largely overlooked by architectural historians and educators who may dismiss it as primitive. Though most traditions could benefit from improved servicing with electricity, piped water, and modern sanitation, vernacular architecture still has a major part to play in the development of a built environment that is both responsive and responsible in an era of rapid population growth.

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See also Architecture

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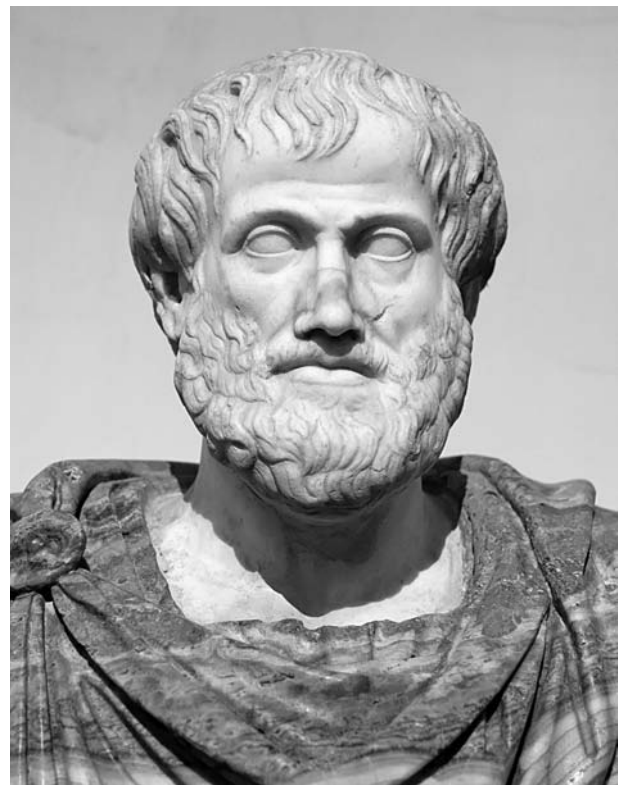
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Since the fourth century BCE, the works of Aristotle—student to Plato, tutor to Alexander the Great, and founder of the Lyceum—have profoundly influenced a variety of fields, including the natural sciences, logic, and political science. His method of combining rigorous observation with a carefully crafted theoretical framework laid the foundation upon which future thinkers and scientists would build.

Aristotle was one of the most important and prolific of all ancient philosophers. Born in the town of Stageira in northern Greece, Aristotle had an immediate environment of intellectual inquiry. His father, Nicomachus, was physician at the court of Macedonian King Amyntas II. At the age of eighteen Aristotle traveled to Athens to study at the Academy of the Greek philosopher Plato. He remained there for twenty years, until Plato's death. Afterward, perhaps disappointed at the choice of the philosopher Speusippus as Plato's successor, Aristotle accepted an invitation from Hermias, ruler of Assos (in modern Turkey). While at the court of Hermias, he pursued both academic and private interests, beginning an extensive period of field research in the natural environment and marrying Hermias's daughter, Pythias.

After the fall of Hermias in 345, Aristotle accepted an invitation from King Philip II of Macedon to come to his court in Pella to tutor the young prince, Alexander of Macedon (popularly known as Alexander the Great). The influence of Aristotle over the young Alexander has been much overstated, and their relationship seems to have been formal rather than warm. Nevertheless, Alexander did take Callisthenes,



This marble bust of Aristotle is a Roman copy after a Greek bronze by Lysippus, circa 330 BCE. The alabaster mantle is a more recent addition. Ludovisi Collection.

Aristotle's nephew and collaborator, with him on his expedition to Asia to act as court historian.

Shortly after Alexander's departure for Asia, Aristotle returned to Athens, where he set up his own philosophical school known as the "Lyceum" in an area outside the city walls. The philosophical style of thinking that he founded there was known in antiquity as "peripatetic," from a colonnade (*peripatos*)



An 1885 illustration depicts Aristotle and his pupil, Alexander the Great. New York Public Library.

at the Lyceum. Aristotle remained in Athens until after the death of Alexander, when an outburst of anti-Macedonian sentiment made it unsafe for him. During this time in Athens, his wife died. Aristotle preferred not to remarry, living instead with a slave, Herpyllis, who bore him a son, Nicomachus. Aristotle died soon after his retirement from Athens, and his successor, both as the head of the Lyceum and as the heir to his papers, was Theophrastus, his longtime student, collaborator, and colleague.

Aristotle was a prolific writer on an enormous range of subjects. Like Plato, he wrote dialogues, although these survive only in fragments and quotations. The greater part of his published work is summaries and notes of his teaching. Aristotle's principal concern was, as with the pre-Socratics (a group of fifth-century Greek philosophers), the description, analysis, and understanding of the natural world. He was an acute and precise observer, and he applied his scientific acumen in an astonishing variety of fields. He was an especially skilled biological taxonomist, identifying literally hundreds of species of animals. He also

brought geological, chemical, and meteorological observations to his study of the weather. This combination in itself is representative of his underlying methodology, which was to marry rigorous empirical observations in the field with a carefully crafted analytical and theoretic framework. This marriage was not always possible. His contributions to physics, although naturalistic in their conception, are highly theoretical.

Aristotle was not interested only in the natural world. He also took the human world as a subject for study. He was, perhaps, the first political scientist, seeking to catalogue and examine a range of constitutional arrangements. This examination led to the construction of his highly influential work, *The Politics*, which provides both a taxonomy (system of classification) and an explanation of political behavior based on theories of self-interest. It remains a core text of political theory. He also sought to collect constitutional histories of Greek city-states, and 158 constitutions were so described. For the most part, these works do not survive except as fragmentary

All human actions have one or more of these seven causes: chance, nature, compulsion, habit, reason, passion, and desire. • Aristotle (384–322 BCE)

quotations embedded in later works. The exception is the *Constitution of Athens* (*Athenaion Politeia*), which was not written by Aristotle himself but probably by one of his students.

Another enormous philosophical contribution was in his employment of formal logic. Rather than examine arguments by their capacity to persuade, Aristotle preferred to test their internal consistency. In order to do this, he devised a kind of algebra of logic, which formal logicians still employ in their deliberations.

Aristotle was a genuine polymath (a person of encyclopedic learning). As such, he asserted the interconnectedness of knowledge (what the U.S. biologist Edward O. Wilson has called “consilience”) as well as its underlying coherence. Although Aristotle was not exclusively and obsessively empirical, he preferred not to engage in explicit speculation about the nature of broad concepts. Here, later generations saw his sharpest contrast with Plato. Plato’s theory of forms, in particular, and the idealism that emerges from it, have been seen as a clear and sharp contrast with Aristotle’s acute and rigorous empiricism.

Much of Aristotle’s work survived antiquity by translation into Arabic. His approach influenced generations of Arab thinkers as well as the scientific and, through the Italian religious philosopher Thomas Aquinas, theological traditions of medieval Europe. By then, however, Aristotle’s conclusions had been turned into dogma and were overturned only by a more rigorous application of his own methodology.

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See also Greece, Ancient; Plato; Philosophy, Greek and Roman; Political Thought

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Art—Africa

Since ancient times trade routes from Europe, the Middle East, and Asia disseminated ideas, objects, and cultures—as well as Christianity and Islam—to the African continent. African art, which reflects all of these influences and exchanges, is an important lens through which to view world history, and an important field of study in its own right.

Africa, a participant in the global spread of objects, ideas, and people that characterizes the world today, has produced some of the world's earliest preserved works of art and some of its most exciting contemporary ones. The study of African art began in the early twentieth century, and for much of its development focused solely on the area south of the Sahara and on art forms rooted in precolonial culture, which was seen as static and timeless. Egypt and northern Africa were seen as separate entities. The colonial and postcolonial eras were viewed as periods of decline in African art, due to what were seen as negative outside influences in materials, techniques, subject matter, style, and patronage. In contrast, recent scholarship takes a more inclusive and historically dynamic view. The continent is treated as an integrated whole and the changes of the past century are seen as continuing the evolution that African art has experienced throughout its history. Research today focuses on the artistic interconnections between geographic regions, ethnic groups, and time periods, and contemporary art is given equal footing with so-called traditional forms.

Ancient African Art

The earliest known works of art from Africa are the paintings of animals found on rocks in the Apollo

11 cave in southern Namibia (so-named because they were discovered in July 1969 when the spacecraft landed on the moon). These have been dated 26,500–24,300 BCE, making them as old or older than the Paleolithic cave paintings of western Europe. Rock paintings and engravings are also found in East Africa and North Africa, particularly in what is now the Sahara; these depictions of animals and humans document the change from the lush, well-watered grasslands of around 8000 BCE to the arid conditions we know today. As the Sahara became drier, its human inhabitants were forced to move, and many of them settled in the Nile Valley, where they contributed to the development of ancient Egyptian and Nubian culture and art.

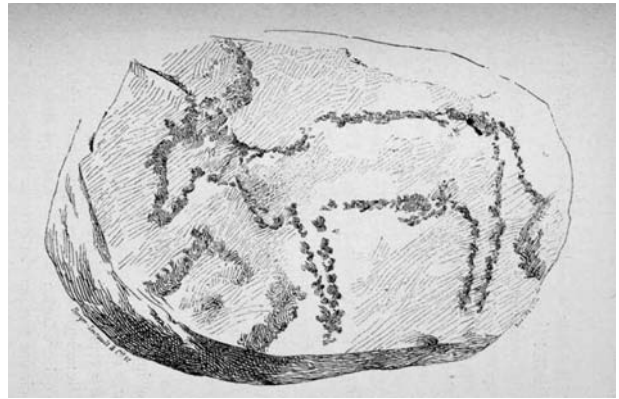
The earliest known sculptures from Africa south of the Sahara are those from the Nok culture of northern Nigeria, dated 800 BCE to 200 CE. Despite their early date, the Nok sculptures already show visual elements characteristic of African art from later periods. They depict facial features and body parts as abstract geometric shapes, and they alter the natural proportions of the body to emphasize the head. They portray the elaborate hairstyles and beaded body ornaments that are also an important part of the dress of many later African peoples.

During the first millennium CE the cultural features that characterized sub-Saharan African societies until the late nineteenth century were established, such as states based on sacred kingship, long-distance trade, urbanism (especially in west Africa), and various forms of social and religious organization. All of these contributed to the evolution of African visual arts.

West Africa's first city, Jenne-Jeno, was well established by 800 CE in the inland delta region of the

Niger River in present-day Mali. Sophisticated and expressive terracotta sculptures were produced there, primarily between the thirteenth and sixteenth centuries. Some depict figures with the trappings of leadership, others are possibly in positions of prayer, and still others appears tormented by diseases or snakes. Little is known about the function of these figures, since the majority of them have been illicitly excavated. Archaeologists believe they were used in domestic rituals, perhaps to ensure the solid foundation of a house and the family within it. Jenne-Jeno was part of a vast trading network that stretched north across the Sahara and south to the forests along the coast of west Africa. There, the site of Igbo-Ukwu in southeastern Nigeria produced lavishly decorated bronze objects using an indigenously developed lost-wax technique. (The technique involves coating a wax model in plaster and clay, leaving a small hole in the bottom; when the model is heated, the clay and plaster harden, and the wax melts (i.e., gets “lost” through the hole. Then the sculptor pours molten bronze into the cavity, and when the bronze cools, chips away the outer layer of plaster and clay.) Made in the ninth or tenth century, these were the regalia of a local priest-king. The city of Ile-Ife in southwestern Nigeria, still a political and spiritual center today, had its artistic flowering between 1000 and 1400. During that period the city’s artists created sculptures whose pronounced naturalism stands out from most other African art, past or present. Most of these idealized portraits were made of clay, but others were made of brass and copper (which is not found naturally in Nigeria), demonstrating Ile-Ife’s long-distance trading connections.

Christianity and Islam were introduced into Africa soon after their inception and quickly found expression in African art and architecture. At first African Christianity was limited to Egypt and Ethiopia, where the rock-cut churches of Lalibela (in Ethiopia) and boldly colored illuminated manuscripts and icons constitute important contributions to Christian art. The Great Mosque at Kairouan in Tunisia, built of stone in the ninth century, is one of the oldest mosques in existence. The Great



Frédéric Christol, *Animal Engraved on a Stone* (an early twentieth-century drawing of an artifact in the Museum of Cape Town). From *South Africa. With 150 Drawings and Sketches by the Author*.

Mosque at Jenne, the Muslim city that arose next to Jenne-Jeno, is typical of west African Islamic architecture in its use of sun-dried mud bricks and strongly projecting engaged pillars and towers along its facade.

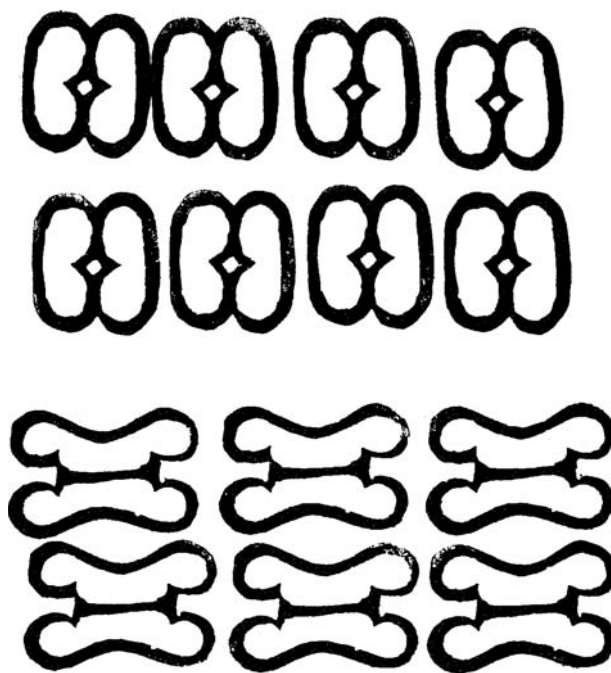
When the earliest European explorers arrived in Africa in the fifteenth and sixteenth centuries, they found several thriving kingdoms as well as smaller social units producing notable works of art. In the Kingdom of Benin in Nigeria, ivory carvers and brass casters produced thousands of works of art for use in court rituals that strengthened the spiritual power, authority, and grandeur of the Oba, or divine king. Notable among these were brass heads representing ancestors, ivory tusks carved in relief with figures from Benin history, and brass palace plaques that depicted the panoply of the Benin court hierarchy. In the Kongo Kingdom luxurious textiles of raffia fiber and fly whisks made of ivory distinguished the rulers and other wealthy and powerful people. Brass crucifixes modeled after European prototypes testified to the adaptation to local styles and ideology of objects introduced by Christian missionaries. At Great Zimbabwe, monumental stone buildings, rare elsewhere in sub-Saharan Africa, were created as the residences and ritual centers for rulers from 1300 to 1450.

The Modern Era

Most of the African art known today through museum collections and publications was made in the nineteenth and twentieth centuries. This was a period of great change in Africa, as political, religious, and cultural practices were forced to adapt to new conditions brought about by colonialism and, later, independence. Nevertheless, the art made at this time, and the context in which it was used, have formed the image of “traditional” African art that has dominated the study of the field. The following examples provide only a brief glimpse of the variety and complexity of African art in this period. Many of these art forms still thrive, although they continue to change, as they always have, in response to new circumstances.

The Bamana people of Mali are primarily subsistence farmers who live in independent villages led by male elders. Their art consists of wooden masks and sculptures made for the performances and rituals of men’s initiation associations. These associations embody spiritual powers, and their members wield social and political authority within Bamana villages. One such association, Komo, utilizes large wooden helmet masks depicting fantastic animals with projecting jaws and domed heads. Komo masks are covered with a thick crust of sacrificial materials, such as animal blood, plant matter, and sacred earths. These materials, along with added animal parts such as horns, tusks, feathers, and quills, imbue Komo masks with spiritual force and refer to secret knowledge used to keep the village safe from physical or spiritual harm. In contrast to the mask’s intimidating appearance and serious function, the wooden headdresses of the Chi Wara association are intricate and elegant, and the performances in which they are worn entertaining. They represent stylized antelopes that honor the mythical being that brought agriculture to the Bamana.

Unlike the Bamana, the Akan people of Ghana are organized into highly centralized and hierarchical states headed by hereditary chiefs who have maintained their status and authority, although much of



Ancient stamp-pattern designs from Ghana lend themselves for use in both fabric and paper printmaking.

their power has been taken over by Ghana’s national government. Akan arts reflect the wealth derived from the region’s vast gold deposits and the multifaceted concepts of power associated with Akan chiefs. Prominent among Akan art forms intended for use by chiefs: cast-gold ornaments and staffs, and other regalia covered with gold leaf—all of which depict animals, humans, and objects that illustrate proverbs concerning the nature and responsibilities of leadership. Brilliantly colored and elaborately woven silk and, more recently, rayon textiles called *kente* are also worn by Akan elite to signify their power, wealth, and status.

The arts of the Kuba people of the Democratic Republic of the Congo are similarly focused on leadership and power. Kuba kings are depicted in idealized portraits carved of wood that are believed to house their spiritual essence. Titleholders wear elaborate garments made of woven, appliquéd, and embroidered raffia fiber textiles along with accessories and regalia covered with cowrie shells, glass beads, and



feathers. Kuba wood masks, worn at initiations and funerals, are similarly covered with a dazzling profusion of colors, patterns, and textures. It should be noted that versions of all the art forms mentioned in this article—including the regalia intended only for Kuba titleholders—are made for the foreign market.

Works made by the Zulu people of South Africa, pastoralists who rose to power in the early nineteenth century on the basis of their military strength, reflect yet another aspect of African art. The Zulu rarely make masks or sculptures; utilitarian objects, such as wooden headrests, milk pails, meat plates, and ceramic beer vessels, predominate. These are often decorated with chevron patterns or raised bumps that refer to the ancestors and to herds of cattle that confer wealth and status. Garments and ornaments decorated with colorful glass beads in geometric patterns express the wearer's prestige, gender, and marital status. During the struggle against apartheid, some black South Africans wore beaded garments and ornaments to express their opposition to the white government's ethnic and racial policies. More recently beaded objects have been made as part of the effort to promote awareness of the problem of HIV/AIDS in South Africa.

At the beginning of the twentieth century European avant-garde artists, such as Pablo Picasso and Henri Matisse in France and Ernst Ludwig Kirchner and Max Pechstein in Germany, discovered works of African art in ethnographic museums and curio shops. The geometric forms, freedom from naturalistic representations, and vibrant colors of the African objects corresponded to artistic concerns in their own work, and provided a source of inspiration for European art movements such as Cubism and German Expressionism.

During the colonial period, government policies, the spread of Christianity and Islam, and new forms of education, employment, and health care often undermined the structures of political, economic, religious, and family life that had been the context for creating and using art in Africa. Art forms and cultural practices adapted to the new circumstances.



Helmet Mask, "Mulwalwa." Democratic Republic of Kongo, Southern Kuba, nineteenth or early twentieth century. Wood, paint, raffia, brass nails. Collection of the Ethnological Museum, Berlin-Dahlem.

Artists began to incorporate newly available materials (such as oil-based enamel paints, factory-woven cloth, and chemical dyes) and newly observed imagery (such as Western-style clothing and automobiles). These innovations demonstrate the vitality and resilience of African art and exemplify its long history of adapting to changing circumstances.

Trends and New Expressions

These developments intensified after World War II as the movement for liberation from colonial rule gained

strength and finally culminated in independence for most African nations around 1960. As more and more Africans were exposed to European modes of education and art production in the second half of the twentieth century, distinctive new forms of (and contexts for) African art emerged. Expatriate Europeans in the 1960s established artist workshops in several parts of Africa. The Mbari Mbayo workshop in Oshogbo, Nigeria, and a workshop founded at the National Gallery of Salisbury, Rhodesia (now Harare, Zimbabwe), are prime examples. Participants were provided with materials and studio space, but training was deliberately minimal to allow the artists' innate creativity to emerge. The results, by artists such as Twins Seven Seven of Nigeria (b. 1944) and Thomas Mukarobgwa of Zimbabwe (1924–1999), emphasize abstraction, expressive color or form, and mythic subject matter.

Another trend in modern African art developed out of the painted shop signs ubiquitous in African towns and cities. In the genre known as "urban popular painting," works are often mass-produced and sold to African patrons as home decorations. They share the flat colors, emphasis on consumer goods, and incorporation of text seen in advertising art, and the intuitive perspective and inconsistent shading and scale of artists without formal art education. Tshibumba Kanda Matulu (b. mid-1940s; missing since early 1980s) of the Democratic Republic of Congo is one of the most accomplished of the urban popular artists. In addition to landscapes and other idealized subjects, he produced a moving series of paintings on the history of his country.

An increasing number of African artists have studied art in colleges or art schools either in Africa or abroad; their work reflects trends in art that are international in scope. In the 1960s, Bruce Onobrakpeya (b. 1932), Uche Okeke (b. 1933), and other Nigerian artists developed a philosophy of art called "natural synthesis" that was based on the fusion of indigenous African and modern European art styles. Their works expressed both the modernity of their newly independent nation and the traditions of African culture. Similar movements arose across Africa.

Since the 1990s, African artists have questioned the relevance of ethnic or national labels and even the relevance of African origin itself. Artists such as Yinka Shonibare (b. 1962 in London, to Nigerian parents), Ghada Amer (b. 1963 in Cairo, Egypt), and Berni Searle (b. 1964 in South Africa) investigate these and other concerns of the postcolonial and postmodern world through the means of conceptual art, using installation, performance, video, photography, and other worldwide contemporary art practices. When seen in its entirety, African art at the beginning of the twenty-first century is a complex mixture of local and global concerns, and ancient and innovative forms.

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See also Africa

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Art—Ancient Greece and Rome

Concepts of strength and dignity—and of ideal human beauty—inspired the sculptors who shaped early Greek monumental architecture and sculpture from marble. Romans, heavily influenced by the Etruscans (who themselves had borrowed from the Greeks), evoked traditional characteristics of the republic—economical, practical, structural—using concrete. Thus the art of both cultures embodies their age-old values.

The earliest monumental creations of classical Greece are the eighth-century BCE grave markers found in the Dipylon cemetery on the outskirts of ancient Athens. Their forms were familiar to everyone and had been for centuries as ordinary household pots used for storing food or mixing and decanting wine and water. Yet in their new context and in the hand of a truly inspired designer the experience created by them was of the very highest drama: these are not normal kitchen pots. They stand as tall as a man and as broad as a temple column. The drama of these monuments is generated by an unbelievable transformation in scale and is delivered to the viewer by a shocking disconnection between the expected and the experienced. The great Dipylon pots are uniquely valuable for understanding the most basic principles of Greek monumentality, because they represent first attempts. First attempts are significant because they represent conscious choices, not simply the repetition of tradition. And wherever conscious choice can be isolated there is the opportunity of uncovering meaning, for the question can be profitably asked, “Why did they solve the problem in this particular manner?”

The master of the first giant Dipylon pot might have asked himself the question, “How can I best design a monument that is suitable for marking and acknowledging the most profound of human transitions and transformations, from life to death, from flesh and blood to spiritual, from ephemeral to everlasting?” His answer was to create a monument that embodied a similarly incomprehensible transformation, both physical and functional, whose drama disorients the viewer, takes the viewer out of any normal, everyday frame of reference—transforms the viewer, and speaks through unambiguous metaphor of the passage from one state of being to the next. The transformation in scale and function of these great Dipylon pots lifts them out of the realm of everyday utility and into a higher, more symbolic, more universal realm. Their common reference to Homeric heroes in their painted decoration further monumentalizes these pots, further elevates them beyond the everyday.

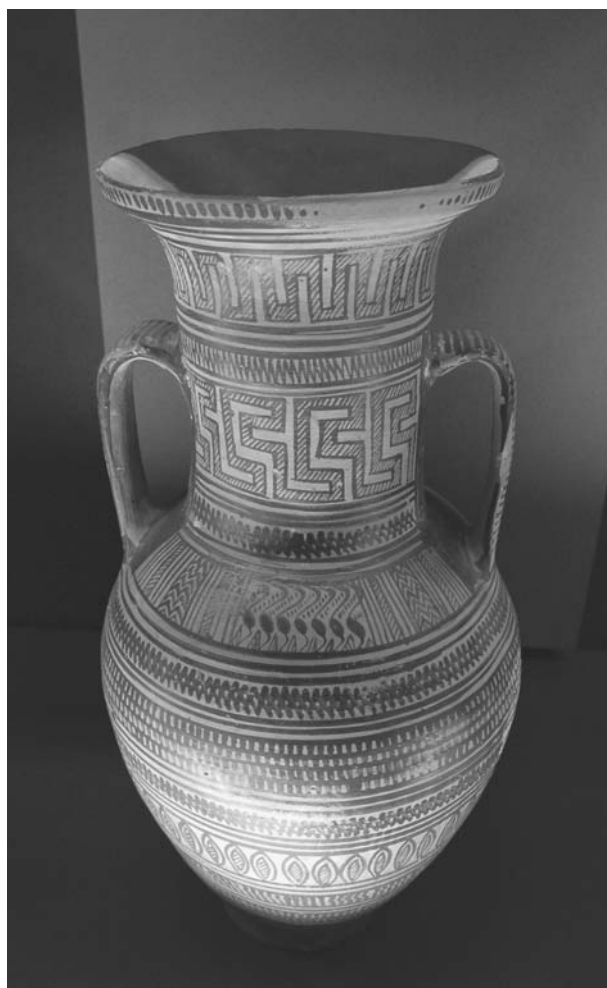
Transformative Power: The Greek Temple

A similar conception of monumentality is expressed in Greek temple architecture, through the monumental transformation of the temple in the early seventh century BCE from a thatched and mud hut to a solid stone and terracotta colossus. This transformation first takes place in Corinth, which develops a distinctive style of pre-Doric monumental architecture that gradually evolves into the first full-fledged representative of the Doric order, the Temple of Artemis at Corfu (c. 580 BCE), a colony and dependency of Corinth. The transformative nature of Greek monumental architecture is enhanced by the innovation of the sculpted pediment,

an invention attributed to the Corinthians by the poet Pindar (522–443 BCE) and seemingly confirmed by its earliest appearance on Corfu, a Corinthian colony and dependency. More than any other feature the early sculpted pediments with their great frontal monsters condition the spirit of approach to the temple: if the approach to the temple was intended to reflect the approach to divinity, the purpose of the monsters was to transform any pilgrims who dared approach, to transport them beyond the protective boundaries of everyday life and into the contemplation of the terrifying nature of divinity and their relationship to it. The purpose of the great emblematic sculptural groups in the pediments was—like religious ritual—the spiritual transformation of the worshipper. Over the course of the sixth century BCE the pedimental instruments of engagement and confrontation become diluted, metamorphose from monsters to more familiar, less intimidating, human-shaped figures, indicating a change in the conception of temple divinity, from abstract, nonanthropomorphic, and chthonic (relating to the underworld) to anthropomorphic Olympian sky gods. This gradual humanization of divinity and consequent divinization of humanity is a theme that unites much of Greek art.

Egyptian Influences

The nature of monumental Greek art and architecture was profoundly affected by the opening of the trading colony Naukratis in Egypt in the later seventh century BCE. From this new and intense contact with Egypt came the inspiration for the peristyle (the continuous colonnade) in Greek temple architecture. The peristyle gave architectural expression to one of the most basic rituals of Ionian cult activity, religious procession: like pedimental sculpture, religious procession serves as a transforming ritual that prepares the worshipper for the approach to divinity. Emulating the processional function of Egyptian colonnades, the colossal peristyles of Ionia led through their formal arrangement to the front of the temple, then to the axis, then to the interior. Peristyles were also adopted on the Doric mainland,

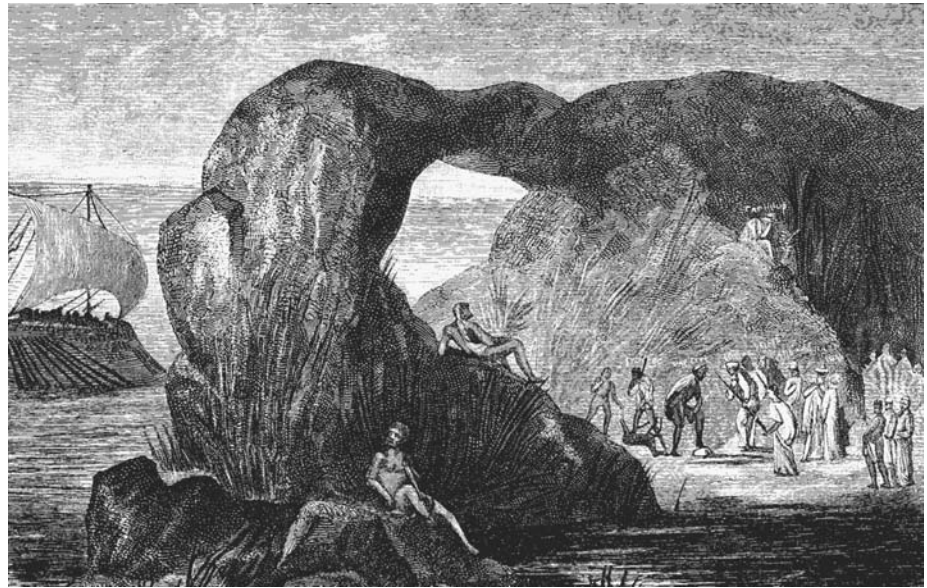


A late Attic amphora, or wine jug, dating to the eighth century BCE, exhibits geometric designs. Louvre, Sully Wing, Campagna Gallery. Photo by Marie-Lan Nguyen.

but in that context their nature was not processional. Instead, a sense of hieratic direction and procession was lent to early Doric architecture by its pedimental sculpture, which followed and further established the early Greek hierarchy of narrative and emblem in religious art: storytelling is associated with a secondary position, the more human realm, at the back of the temple, while the more abstract convention, the emblem, is appropriate for the suggestion of divinity at the front of the temple.

It was also through Naukratis that the Egyptian conception and technique of monumental freestanding

An ancient mural depicting a scene from Homer's *Odyssey*, one of many such Hellenistic works found on the Esquiline Hill, Rome.



sculpture was introduced to Greece. Beginning in the late seventh century, *kouroi* (male) and *korai* (female) appear as votives and grave markers and, perhaps, as cult images. There is probably a causal relationship between the appearance of this sculpture and the coincidental relegation of pottery to an almost exclusively non-monumental realm. The physical nature of *kouroi* and *korai* makes them particularly appropriate as indicators and inspirers of spiritual transition. Like the religious sculpture of Egypt, they are represented as highly formalized compositions, more religious emblem or hieroglyph than naturalistic representation of humans. Their tight symmetry and stylization intentionally and effectively separates them from the strictly human realm, removes them from the everyday, and places them in a mediating position between human and divine. On the other hand, as in vase painting and pedimental sculpture, an increasing interest in the examination of things human is witnessed in sixth-century freestanding sculpture in the increasingly naturalistic modeling of the body. This parallels the change to the more human conception of temple divinity as represented in pedimental sculpture, and reflects the increasingly central role humans play in the Greek conception of the cosmos.

The Classical Period

The increasingly detailed examination in art of the human condition, physical and emotional, continued unbroken into the classical period (beginning in 480 BCE with the Persian sack of the Athenian Acropolis). This movement toward naturalism, however, was potentially inimical to the goals of monumentality, as the goals of monumental art and architecture had always been to lift viewers out of the ordinary, beyond the everyday, and into the contemplation of forces greater than themselves: how could increasingly human representations lift humans beyond their own environment, inspire in them the contemplation and understanding of something superhuman, of the divine realm? This seems to have been recognized by the mid-fifth-century sculptor Polykleitos, who reintroduced the formal symmetry of *kouroi* to his compositions, though along diagonal axes rather than in the strictly vertical and horizontal framework of sixth-century sculpture. The decision of Phidias, the sculptor of the Parthenon, to ignore the developing techniques of representing individual characteristics of age, emotion, and character in favor of uniformly abstracted, ageless, “idealized” figures similarly indicates an analytical



appreciation of the traditional character and techniques of monumental Greek art.

The Periclean building program on the Athenian Acropolis, undertaken in the aftermath of the Persian destruction of Athens, is perhaps the most elaborate expression of monumental art and architecture ever created in Greece. Its religious roots and purpose are evident in the detailed expression of religious procession through the organization of building types, the organization of their pedimental sculpture, and the incorporation of the processional language of Ionic temple architecture into the Doric tradition of the Acropolis. Its political and historical context and tradition are expressed through the many references to the Persian War, both metaphorical and literal, through the cults of legendary heroes, and through the use of the Ionic order as a reflection of Athens's ancient genetic and linguistic connections with Ionia and of its present position at the head of an Ionian alliance against the Persians. The explicit celebration of the accomplishments and traditions of the Athenians in the religious monuments of their central sanctuary is a remarkable deviation from canon and represents an extreme evolution of the humanization of divinity and divinization of humanity in Greek art and architecture.

After the hiatus of Phidian sculpture, the examination of the human condition in ever-increasing detail recommenced with renewed energy in the fourth century BCE and soon resulted in the monumental representation of generalized but, nevertheless, individual human beings. In the Hellenistic Age (the period beginning with the death of Alexander III of Macedon [Alexander the Great] in 323 BCE and ending with the Battle of Actium in 31 BCE) the gradual humanization of divinity in Greek art culminated in the worship and monumental representation of

Hellenistic rulers as gods. Similarly, while mythical or divine representation or reference served as an elevating agent of monumentality in earlier Greek art, reference to, or even quotation of, the buildings and sculpture of the Periclean Acropolis became a common agent of monumentality in the official art and architecture of the Hellenistic kingdoms of Greece, particularly of Pergamon.

Corinth and the Etruscans: Greek Influence on Rome

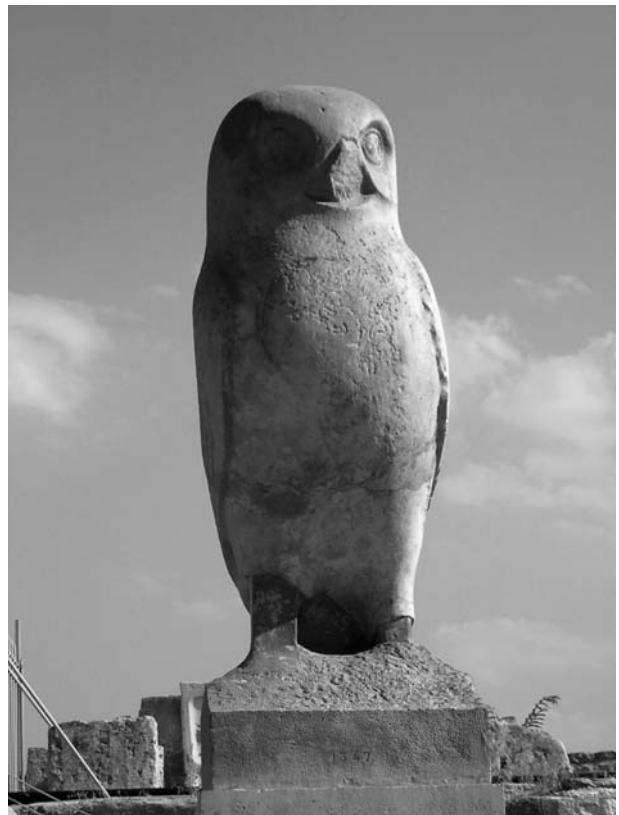
The connections between Greece and Rome are almost as old as the cultures themselves, and the Romans themselves traced the origins of monumental temple architecture in Rome back to mid-seventh-century Corinth. Around the time that the Corinthians were designing and building the first truly monumental temple in Greece, the old ruling oligarchy was overthrown and expelled from Corinth. When one of the deposed oligarchs, Damaratus, fled by ship from Corinth he carried with him a host of artisans, including terracotta workers, craftsmen we now know were most responsible for the monumental character of that temple—through their invention of the tiled roof. Damaratus sailed with them to the west coast of Italy and settled in the Etruscan town of Tarquinia, where Damaratus's artisans introduced the Etruscans—who became the greatest terracotta sculptors of the Mediterranean—to the art of molding terracotta. So, in addition to developing the first tradition of monumental architecture in Greece, Corinth was also a crucial source for the origins of monumental sculpture and architecture in Etruria. Damaratus then extended Corinth's artistic and cultural influence to Rome itself through his half-Etruscan son



The Gorgon medusa from the Temple of Artemis, Corfu. Early, sculpted pediments were adorned with frontal views of mythological monsters.

Lucumo, who later took the name Lucius Tarquinius Priscus and became the first Etruscan king of Rome. On the heights of the Capitoline Hill in Rome, the central peak and religious center of Etruscan and Latin Rome, Tarquinius initiated the construction of the first monumental temple in Rome, dedicated to Jupiter, Juno, and Minerva, the same three divinities that in their Greek guise of Zeus, Hera, and Athena dominated the central height and religious center of Corinth. This cult of the Capitoline Triad became the central cult of the Roman republic and empire, and the triple-chambered plan of their temple, completed after the Etruscans were expelled from Rome at the end of the sixth century BCE, formed the template for all subsequent Capitolia.

From the Etruscans the Romans inherited the tradition of monumental wood and terracotta temple architecture. They were also deeply influenced by Etruscan sculpture, painting, and religious and political institutions. The tradition of Roman portraiture, a paradigmatic manifestation of an innate Roman fascination with the literal details of history, finds its roots in Etruscan funerary sculpture that goes back to the seventh century BCE. As much as any other art form, the super-realistic, warts-and-all portraiture of republican Rome (509–27 BCE) embodies the traditional Roman dedication to history, family, and age-old values. And as much as any other art form, the conception and appearance of Roman republican portraiture stands in opposition to the traditional Greek conception of monumental art. Through generalization and stylization monumental Greek art was intended to lift the viewer out of the everyday and into the consideration of superhuman forms and forces; Roman republican portraiture encouraged the contemplation of the thoughts and actions of specific, individual human beings through the reproduction of their most individualized, idiosyncratic physical attributes. A similar dichotomy is expressed in the contrast between the native tradition of Roman historical relief sculpture, which depicts the literal details of actual historical events, and the more generalized, emblematic references to history made in the monuments of the Greeks.



The owl, signifying strength and wisdom, is the symbol of Athena, the patron goddess of Athens. Photo taken in 2003.

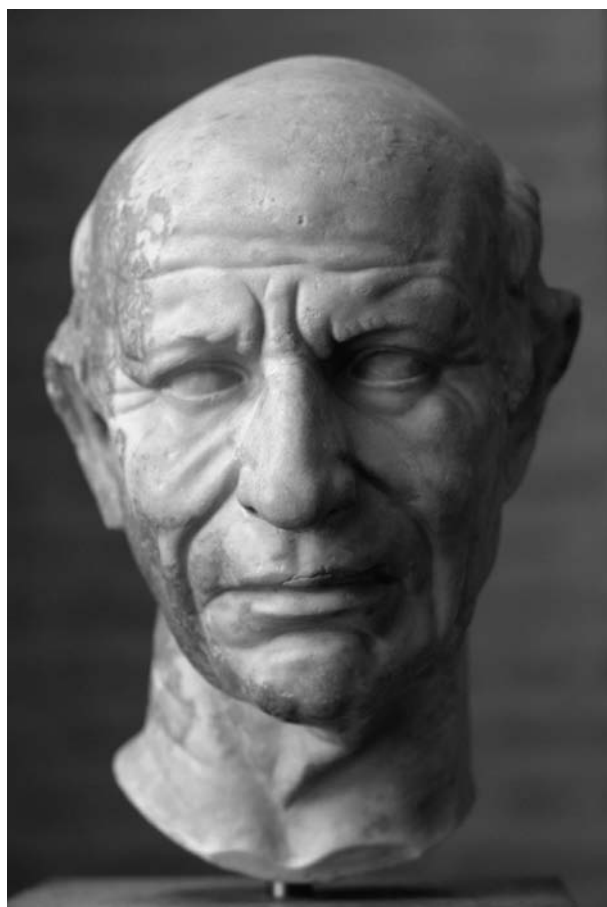
An Evolving Balance

The most profound wave of Greek influence on the Romans came with the Roman sack of Corinth in 146 BCE. The city was stripped of its sculpture and painting and almost any movable object of value, and it was all shipped to Rome, where it kindled a mighty taste for things Greek and antique and injected a permanent and powerful strain of Hellenism into the art and architecture of Rome. From the second century BCE Roman art and architecture can be read as a constant and intentional shifting—depending upon the specific purpose of the monument—of the balance of native Italic elements and those adopted from classical Greece. The Romans continue to build their temples according to their own traditional Tuscan plan (adopted from the Etruscans), but they consistently

monumentalize those temples by veneering them with the materials and decorative orders of the Greeks.

A century later the emperor Augustus (reigned 27 BCE–14 CE) claimed to have found Rome a city of brick and left it a city of marble. Augustus's statue at Prima Porta illustrates well the early integration of Hellenic and Italic forms and spirit in the service of the official message of the state. It combines a recognizable portrait head of Augustus with the body of the famous Doryphoros, the "Spearbearer" of the fifth-century BCE Greek sculptor Polykleitos. The Doryphoros is presented in the armor of a Roman general, the commander in chief, and wears a cuirass that carries the representation in relief of a historical event, a military accomplishment significant to the official image of Augustus. A recognizable, individual human being and a specific historical event are magnified, elevated to the realm of the superhuman through their association with fifth-century Greece, with Periclean Athens and its own remarkable cultural and military accomplishments, the apex, in the Roman mind, of human achievement. The same mixture and purpose is found in Augustus's Altar of Peace (the *Ara pacis*), which presents a historical procession of individually recognizable Romans in the guise of the religious procession depicted on the Ionic frieze of the fifth-century Parthenon in Athens.

Augustus and his Julio-Claudian successors (reigned 14–68 CE) continued to present themselves in official art and architecture in the guise of fifth-century Greece. Even their portrait heads, while recognizable as individual emperors, were generalized and idealized in the manner of classical Greek art. When, however, their grotesque excesses and abuses of power led to the overthrow of Nero (reigned 54–68 CE) and the ruling dynasty, the first Flavian emperor, Vespasian (reigned 69–79 CE), openly distanced himself from the policies and character of his predecessors by changing the balance in the language of official state art. Instead of representing him as Doryphoros, Vespasian's official images returned to the style of the old republican portraits—straightforward, literal, unpretentious, uniquely Roman—and proclaimed a return to the traditional values of the republic. In



The realistic rendering of an elderly Roman man, circa 60 BCE, embodies the traditional Roman dedication to history, family, and age-old values.
Bevilacqua Palace, Verona.

architecture he encouraged the use of concrete, a purely Roman building material and the most important Roman architectural contribution to posterity. The Amphitheatrum Flavium, the Colosseum, was not only the largest and most elaborate concrete structure in Rome, but it also denied the divine pretensions of the Julio-Claudian emperors and their profligate abuse of the Roman treasury for their own individual desires through its function as an entertainment center for the common people and through the site of its construction, on the newly filled-in lake in the center of Nero's notorious Golden House, or Domus Aurea. This structure was built with state funds in the center of Rome as Nero's personal pleasure villa; he

appropriated over three hundred acres in the center of the city for its construction. Paradoxically, Nero's architects had also made great use of concrete, but in the private context of Nero's Golden House, where they experimented with the possibilities of concrete for molding interior space in new and fantastic ways. Their discoveries were profoundly influential in creating a Roman architecture of interiors.

The ways in which concrete and marble are used in Roman architecture can serve as a metaphor for the Roman character. In general, concrete formed the structure of the building, marble its veneer: carefully carved marble revetment could make a concrete building look as elegant as the Parthenon. Like the traditional characteristics of the republic—economical, practical, structural—concrete is purely Roman. Marble, on the other hand, as employed in Roman buildings, is expensive, luxurious, superficial, and foreign. While concrete reflects the native character of the Romans, marble reflects the aspirations of the Romans to the cultural heights of Pericles and fifth-century Athens.

Not until the reign of the emperor Trajan (reigned 98–117 CE) is concrete and its protective brick facing presented in unveneered reality as an appropriate surface for monumental architecture. The great curved façade of the Markets of Trajan reflects the molded nature of concrete, and the unstuccoed, unveneered brick surface reveals the fabric and techniques of its structure and initiates a new aesthetic in Roman architecture. Appropriately, this vast concrete building is dedicated to the practical pursuit of business; immediately next door, the contemporary Forum of Trajan, whose function is the symbolic representation of the aspirations and accomplishments of the Roman state under Trajan, is presented in the full glory of the classical Greek marble architectural orders.

Perhaps the most remarkable integration of traditional Roman and classical Greek architectural forms and symbols is found in the Pantheon of Trajan's successor Hadrian (reigned 117–138 CE). Here the façade of a Greek temple is wedded to a completely un-Greek and purely Roman structure, a concrete, domed cylinder. In addition, the most elaborate

architectural symbol of religious transition ever created in Greece, the Propylaia (the great gateway of the Periclean Acropolis), is directly referenced in the stacked pediments of the façade, which, in turn, are combined with the uniquely Roman symbol of transition, the triumphal arch, to form the most explicitly processional temple entrance ever created in the classical world. The entrance leads into an immense open interior whose dome (representing the vault of the heavens) is the culmination of decades of experimentation and mastery of the techniques and design of concrete architecture. Here, rather than emphasizing the distinct natures of Greek and Roman architecture, the expressive potential of both is consciously synthesized to create a temple uniquely appropriate to the inclusive, international worship of "all gods," (pan-theon) and consequently to promote Hadrian's own inclusive, international conception of the Roman Empire.

Succeeding emperors continued to create monumental art and architecture in the tradition of Hadrian and his predecessors, and continued to explore the possibilities of concrete as a monumental architectural medium. Classical Greek and native Italic elements continued to be used to express specific official messages and attitudes, though on the whole that balance shifted toward the Italic over the next two centuries. In sculpture this shift expressed itself in part in the increasing interest in frontal representation and in simple, clearly outlined figures. That, coupled with a new spirituality that increasingly expressed itself in an emphasis on the eyes, gradually led to the more emblematic, iconic relief sculpture and portraits of the late empire. Constantine the Great (Constantine I, reigned 306–337) employed the tools of official art and architecture to great advantage, and as the first of the Roman emperors to convert to Christianity, began to direct those tools toward the glorification and propagation of his new religion.

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See also Greece, Ancient; Roman Empire

Pictures should not be given approbation which are not likenesses of reality, even if they are refined creations executed with artistic skill. • **Vitruvius (80/70–25 BCE)**

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The art of Central Asia is critically important to world historians because it provides evidence of the extraordinary synthesis of cultural influences that so typify the history of the region. This blending of Mediterranean, Iranian, Indian, Chinese, steppe nomadic, and local techniques and motifs that occurred at the “crossroads of Eurasia” resulted in the emergence of several major syncretistic schools of art.

Central Asian art needs to be clearly distinguished from the other artistic traditions of Inner Eurasia. Geographically, the term denotes the arts of modern-day Afghanistan, Pakistan, northern India, Nepal, Xinjiang Province in northwestern China, Tajikistan, Kyrgyzstan, Uzbekistan, and Turkmenistan, whereas Inner Eurasia also includes Mongolia, the Gobi, and central Siberia. It is culturally and stylistically different from Islamic, Indian, Chinese, and Russian arts, although these styles have all been practiced within the region. Historically, Central Asian art dates from prehistoric times to the present, with the ancient Silk Roads era being the most significant. Media have included sculpture and engraving in a variety of stone and stucco, as well as wall paintings, coin engravings, and textiles.

In the oasis towns of Central Asia, artists from a variety of cultures worked together to produce both sacred and secular art, which was then transported along the trade routes to profoundly influence the subsequent art of East Asia in particular. This essay offers a brief survey of Central Asian art in a chronological framework.

Pre-Achaemenid

The history of Central Asia from the late Neolithic period (c. 6000–3000 BCE) until quite recently has been characterized by the interaction between sedentary agrarian and nomadic pastoralist communities. The original inhabitants of the region lived in small semi-sedentary settlements. More substantial colonization followed as a direct result of the migration of Indo-European- and Indo-Iranian-speaking pastoralists into the region in three waves from approximately 4000 BCE. An important urban civilization emerged in the valleys of the Amu Dar'ya and Zeravshan rivers late in the third millennium BCE, originally known as the Bactrian-Margiana archaeological complex (BMAC), but “Oxus Civilization” is the term now more commonly used. Oxus Civilization oasis sites were probably agricultural communities developed to facilitate trade and exchange between the indigenous sedentary agriculturists and the neighboring steppe-nomadic pastoralists, evidence of the early emergence of a tradition of cultural exchange.

Artifacts discovered in Oxus Civilization sites—particularly battle-axes with cross-guards, mirrors, pins, bracelets, and rings—demonstrate high levels of craftsmanship and the borrowing of styles. Oxus Civilization potters used the wheel from as early as the third millennium BCE and decorated their works with geometric designs or stylized renderings of large animals and goats. The iconography of seals, cylinders, and metal ornaments is clearly of steppe-nomadic tradition—which includes both

realistic and fantastic animal images (particularly horses), mythical raptor-headed creatures, hunting and riding images, and some abstract symbol—while later artifacts are more Iranian in appearance, featuring human figures in full-frontal or profile poses, often sacrificing before a small fire altar. The Oxus Civilization declined late in the second millennium, although soon after 1000 BCE there is evidence of renewed urbanization and the construction of extensive irrigation systems. These settlements were extensively fortified, providing evidence of increased levels of conflict during what is known as the Scythian era (c. 1000–200 BCE).

The militarized Scythian tribes, who were active in Central Asia from the seventh century BCE, were responsible for the production of superbly decorative objects, particularly jewelry and trappings on horses, tents, and wagons. Scythic representations of real or imagined beasts were worked into a wide range of materials, including wood, leather, bone, appliqué felt, bronze, iron, silver, gold, and electrum. Outstanding examples are gold belt buckles, often with turquoise inlay, and 30-centimeter-long gold stags with their legs tucked under them, which may have been used as central ornaments on shields. The 1979 discovery at Tillya Tepe in Afghanistan of six royal graves replete with magnificent gold and lapis lazuli jewelry and weapons demonstrates the extraordinary artistic achievements of (probably) Scythian craftsmanship. The easternmost outpost of Scythian culture was the Ili River valley (in present-day southeastern Kazakhstan and northwestern Xinjiang Province, China), where they may have influenced the artistic tastes of the Xiongnu tribal confederation. A range of personal ornaments discovered at the major Xiongnu site of Noin-Ula depict fantastic animals with raptor-headed appendages, similar to those created by steppe-nomadic peoples from further west.

An important sedentary civilization also emerged in the Indus Valley during the third millennium BCE. The excavation of large cities such as Mohenjo Daro and Harappa provides evidence of a tightly organized, architecturally sophisticated urban society with straight streets intersecting at right angles,



This gold ram, a headdress ornament, displays the extraordinary craftsmanship of the Scythians. From Tillya Tepe, Tomb IV (first century BCE–first century CE). National Museum of Afghanistan ©Thierry Ollivier / Musée Guimet (www.nga.gov).

sophisticated drainage systems, and high standards of pottery production. Venus fertility figurines have been found at various sites, demonstrating extensive levels of cultural exchange with the civilizations of southwestern Asia. Stamps and seals from the Indus civilization depict naturalistic animals, but also horned humans, unicorns, and other large figures that might be gods, indicating possible steppe-nomadic influence upon artists.

Further north in the Indus Valley some 35,000 petroglyphs and inscriptions have been discovered, and others are known in Afghanistan, Uzbekistan,



A terracotta fertility figure from the Indus Valley civilization (c. 2200 BCE) provides evidence of cultural exchange with southwestern Asia. The National Fund for Cultural Heritage.

and Tajikistan. The oldest carvings, which are pecked or chiseled into the surface of boulders scattered on the riverbanks and terraces, are prehistoric, mostly depicting animals, hunting scenes, and demon-like creatures. The petroglyphs continued to be cut until the early modern era and provide evidence of the

changing religious practices of travelers (notably of Buddhism and Islam) along this branch of the Silk Roads. They depict an astonishing array of stupas (burial mounds and reliquaries) with the Buddha in various poses, and bodhisattva figures; later petroglyphs feature Indian and Iranian iconography, including some Zoroastrian and later Islamic symbols.

Achaemenids and Greeks

The relative isolation of small, fortified city-states in Central Asia made them vulnerable to attacks from the armies of major agrarian civilizations to the west. By the mid-sixth century BCE the Achaemenids (an Iranian dynasty that held power from the seventh century BCE through 330 BCE) had incorporated Bactria (ancient Afghanistan) and Sogdia (ancient Turkmenistan and Uzbekistan) into their empire. These regions were thus exposed to the artistic traditions and belief systems of Iran until the arrival of Alexander III of Macedon (Alexander the Great) in 329 BCE. This long period of incorporation into the durable and tightly organized Persian Empire helped establish the region as part of a Eurasia-wide cultural exchange network. Central Asia was exposed to Zoroastrian iconography, and small votive figurines produced by potters in Bactria and Sogdia were designed to be used in fire-worshipping ceremonies. The Achaemenids also introduced the first coins into Central Asia, establishing a tradition that would culminate under the Greco-Bactrians in arguably the finest example of the coin engravers' art known in the ancient world.

Alexander campaigned in Bactria and Sogdia for two years, establishing a number of cities, including Alexandria-Kapisu (Begram in Afghanistan), which the Kushans later made their summer capital. Alexander's campaign reinforced the process begun by the Achaemenids and further linked Central Asia to the civilizations of southwestern Asia and the Mediterranean. Greek populations flooded into the region during the subsequent Seleucid (Macedonian Greek) era (312–64 BCE), founding a string of Greek towns such as Ay Khanum on the southern banks of the



A rock petroglyph in Kazakhstan, approximately 4,000 years old, partially defaced by scratches.
Photo by Jeff Frame.

Amu Dar'ya, complete with classical Greek temples and theaters. The Seleucids also issued tetradrachms that are masterpieces in the Greek tradition of coinage, with superb portraits of kings on the reverse that are sometimes realistic enough to reveal symptoms of disease, such as goiter.

Around 250 BCE Diodotus, the Seleucid satrap of Bactria, revolted and declared Bactria an independent state. During the subsequent Greco-Bactrian era a series of kings expanded their realms into Sogdia and Fergana to the north, Parthia to the west, and Kabul and the Indus Valley to the south. Soon after 190 BCE, Demetrius extended Greek interests into northern India, forging a link between the Hellenistic and Indian cultures that was strengthened under his successors Eucratides and Menander.

As well as establishing a link between Hellenic and Indian culture, the most significant artistic legacy of the Greco-Bactrians is their superb coinage, which was issued in silver and bronze. The royal portraits are masterpieces of coin engraving; facial features are

so realistically and individually realized as to surpass even the Seleucids. Euthydemus is depicted with a thick neck, full cheeks and chin, and a determined mouth; Eucratides wears a helmet with bull's horns above his naked torso; Demetrius wears an elephant-scalp headdress and formidable expression; and Antimachus has unique facial features reflecting his mixed Greek and Sogdian blood. The coins strongly influenced the subsequent issues of the Kushans, under whom Central Asian art reached the heights of syncretistic achievement.

The Kushans: Gandharan and Mathuran Art

The invasion of Bactria by the Yuezhi confederation in 130 BCE ushered in a period often described as the Golden Age of ancient Central Asia. By around 45 CE the Yuezhi had transformed themselves into the imperial Kushans, and for much of the subsequent two centuries the stability of their regime facilitated astonishing levels of trans-Eurasian cultural exchange along the various Silk Roads, which linked the Mediterranean, Parthian, Indian, Chinese, and steppe-nomadic worlds into a single world system for the first time in history. Central Asian art was transformed by this interaction, and although a number



This view of the Kazakhstan petroglyph shows a male figure shooting at a wild horse with a bow and arrow. Photo by Jeff Frame.



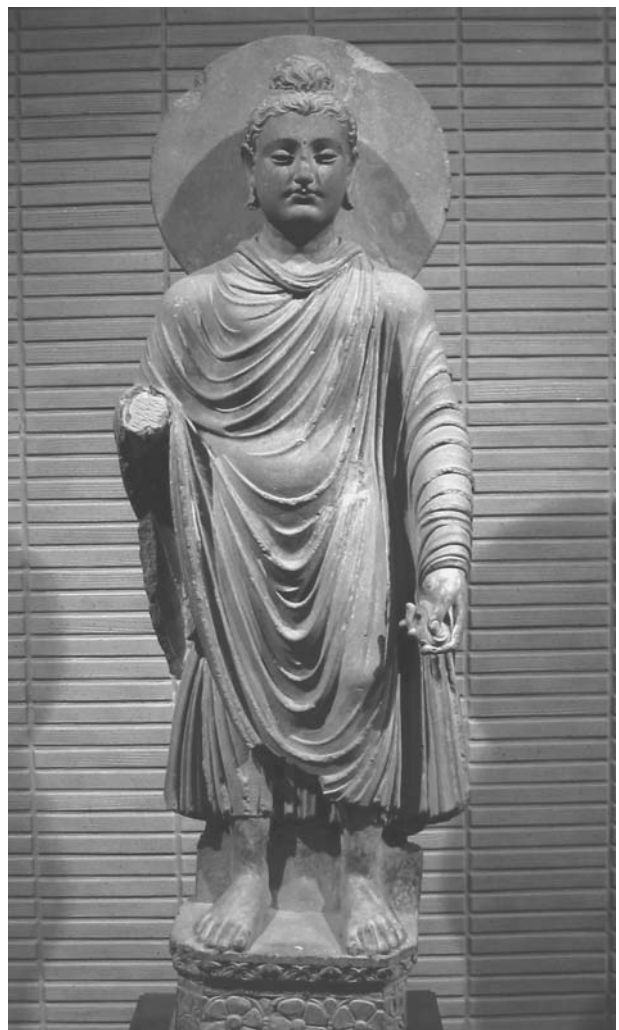
A Cybele plate from Ai Khanum, Afghanistan, shows the Phrygian goddess in her lion-drawn chariot, the Greek sun god Helios, and an Iranian fire altar. Photo by Marco Prins, © Jona Lendering for Livius.Org, 2006.

of distinctive Kushan styles are known, the most significant are those that emerged at Gandhara and Mathura.

Gandhara (located near Peshawar in Pakistan) had been incorporated into the Greco-Bactrian kingdom, and the art that evolved there owed much to Mediterranean, Indian, and local traditions. Gandharan sculpture (along with Kushan coinage) has long been associated with the earliest depictions of the Buddha, who had previously been represented only by symbols such as footprints or an umbrella. In an attempt to express for the first time the idea of his divinity in human form, Gandharan sculptors (who worked in hard, gray schist) turned to statues of Greek and Roman gods. The earliest Buddhas feature drapery that hangs in loose folds but still outlines the form and movement of the body beneath. Many are similar to the contemporary statues of deified Roman emperors, and the head recalls the Greek god Apollo. Also remarkable in Gandharan art are flat sculptures worked on slabs of schist (often used as

stair-riser reliefs) depicting both religious and secular scenes. These pieces abound in details from everyday life—comfortable beds, food and wine, dancers and musicians, and realistic portraiture—and their extraordinary mixture of Indian symbolism, Romano-Hellenistic architectural details, and steppe-nomadic costumes are a quintessential example of Central Asian artistic synthesis.

In later phases (Gandharan art continued until the sixth century CE) the remarkable blending of local,



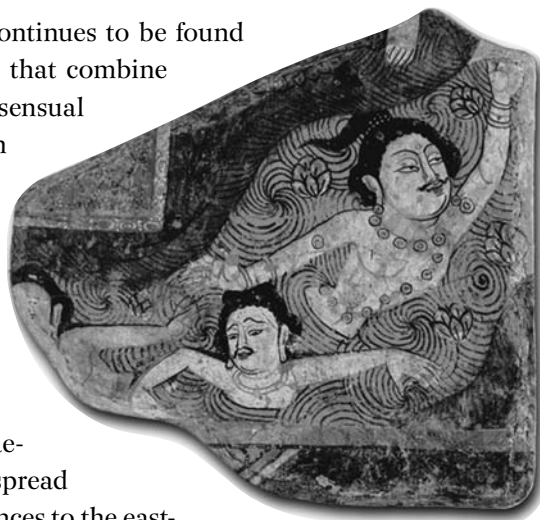
The standing Buddha of Gandharan style, circa first-second century CE, features characteristic loose drapery revealing the form of the body underneath. Tokyo National Museum.

Eastern, and Western styles continues to be found in Buddhas and bodhisattvas that combine Greek symmetry with Indian sensual spirituality and serenity. In turn, these syncretistic images went on to profoundly influence later East Asian images of the Buddha, particularly the Chinese. So stylistically unmistakable is the sculpture of Gandhara that early-twentieth-century archaeologists were able to map the spread of Kushano-Gandharan influences to the eastern edge of the Tarim Basin, based primarily on the continuing Greek and Roman stylistic influences observed in Buddhist sculpture they had unearthed.

Mathuran artists (based on the Jamuna River, a tributary of the Ganges) worked mainly in white-spotted red sandstone and were clearly influenced by the Gandharan synthesis. Whether standing or seated, the Buddha is depicted with broad shoulders and a large chest, and with legs apart and feet firmly planted, conveying a sense of power and energy. Mathuran secular art is notable for its sensual depictions of women and also for a superb series of portraits of the Kushan kings. Particularly impressive is a low-relief (unfortunately headless) sculpture of Kanishka (reigned c. 129–152 CE) in which he is depicted with sword and mace, and with his feet planted in a masterful manner. The king wears nomadic dress, and although the work was undertaken in Mathura (the Kushan winter capital), the style and concept seem to stem more from a Scythic-Parthian tradition than an Indian one. However, the arts of both Gandhara and Mathura did contribute profoundly to the formation of the classic style of Indian art, which reached its maturity during the three-century-long Gupta period.

First Millennium of the Common Era

Following the death of the Kushan ruler Vasudeva around 228, the Kushans were rapidly replaced in



This fragment from the “Swimmers” wall fresco in Kizil, Cave of the Seafarers (c. 500 CE), was pillaged, like many other “portable” works, by nineteenth-century European archaeologists. Collection of the Museum of Asian Art, Berlin.

Central Asia by the Iranian Sasanians, who later established strong trade contacts with Tang-dynasty China (the Tang were in power from

618 to 907) that ensured the continuation of the tradition of artistic synthesis. Tang art—including flasks and pottery figurines—was clearly influenced by Central Asian and Western prototypes brought to China by pilgrims and traders. Mahayana Buddhism was by now firmly entrenched in Central Asia, and much of the art created during the first millennium CE was produced in monasteries across the Tarim Basin. Many of the more portable pieces were pillaged by European archaeologists in the nineteenth and twentieth centuries and now reside in institutions all over the globe. Notable are the superb wall frescoes produced around 500 to 800 at Kizil, which demonstrate Sasanian, Indian, and Chinese influences; Buddhist wall paintings from Kuqa (from around 900 to 1000) in west central Xinjiang and Uygur frescoes from Bezeklik and Sorcuk (both displaying Sogdian, Persian, and Indian influences); and the astonishing library of illustrated scrolls discovered by the archaeologist Aurel Stein in the Monastery of a Thousand Buddhas near Dunhuang in north central China. Included among the latter was the oldest block-printed book so far known, a copy of the Diamond Sutra dating from approximately 860 CE. Cultural and stylistic influences continued to move in both directions. The sculpture and painting produced in monasteries in Turpan in Xinjiang, for example, influenced the subsequent Buddhist art



The archaeological remains of the Bamiyan Valley represent rich artistic and religious exchanges among cultures. The Buddha pictured here in 1976 was one of two destroyed by the Taliban in 2001. Photo by Marco Bonavoglia.

of Tibet, while the funeral art of the Uygurs deeply affected Mongolian painting. Many superb examples of Manichaean art are also known throughout Central Asia, documenting the spread of the “religion of light” eastward from the Sasanian realm as far as the Tang capital of Xi’an.

Not all the art of Central Asia was so easily transportable. In the high Bamiyan valley in northern Afghanistan, at a crossroads of two Silk Roads routes, a large monastic complex was responsible for the carving of monumental figures of the Buddha. Until just prior to its destruction in 2001 by the Taliban

regime, the tallest of the colossal statues (52.5 meters) was the single largest Buddha known in the world. The Bamiyan Buddhas were massive reliefs set deep in the side of a cliff, inspired by the Indian rock-cut architecture of Ajanta in south central India. They were completed in a naturalistic, post-Gandharan style strongly influenced by both Parthian and local traditions, and in turn inspired the carving of another group of colossal Buddhas at Yungang in the Chinese province of Shanxi (northeastern China), completed late in the fifth century.

Modern Era

Outside of the scope of this brief outline is a consideration of the splendid cultural legacy of Islam that has been such a dominant influence upon Central Asian art from late in the first millennium CE until today. The textile arts of the region also deserve an essay to themselves, particularly as the great trade routes were named after silk. Textiles are of paramount importance to world historians because of the role they have played as mediums of exchange and as indicators of social position, ethnicity, and religion. Textiles were used as currency, to pay taxes, and as symbols of imperial patronage, and yet the fragile nature of the medium has meant that only a fraction of those produced have survived. One of the largest collections of ancient Central Asian textiles so far discovered are those associated with the desiccated mummies found at sites all over Xinjiang, analysis of which has been tentatively used to suggest a historical connection between the Tarim Basin mummies and the Bronze Age migration of Indo-European-speaking migrants into the region.

The richness of color, pattern, and texture that so distinguishes the region’s textiles is a product of the intense transfer and blending of ideas, motifs, techniques, and materials between nomadic and sedentary peoples, a tradition that continues in the twenty-first century. In the contemporary nations of post-Soviet Central Asia, weavers, potters, ceramic masters, jewelers, and painters from both

Thus shall ye think of all this fleeting world: A star at dawn, a bubble in a stream, A flash of lightning in a summer cloud, A flickering lamp, a phantom, and a dream. • **Diamond Sutra (868 BCE)**



A Tarim Basin mummy photographed by the archaeologist Aurel Stein circa 1910.

sedentary and seminomadic traditions continue to practice their art. But the Soviet policy of forcing artists and craftspeople to work in collective factories and prohibiting the production of individual work had a devastating effect on many of the traditional arts of Uzbekistan, Turkmenistan, Kyrgyzstan, and Tajikistan. In some cases, archaeologists of the era also destroyed later layers of artistic artifacts in the process of excavating older periods. As a result, the few masters who remain in the region today carry a precious living legacy of tradition and technique.

Since the Central Asian republics gained independence in the 1990s, nongovernmental organizations such as UNESCO have played an important role in the renaissance of traditional arts and crafts through grants to artists and assistance in the international marketing of their works. One result of this well-intentioned strategy has been that many artists now concentrate on producing commercial works for foreign buyers as they adjust to market realities, and the creative process, particularly in terms of original modern art, has suffered. Of course, Central Asia has always been a region characterized by the tensions between local ethnic traditions on the one hand and a diverse range of foreign influences on the other, as a result of its geographical location as a hub for trans-Eurasian cultural exchange. It remains to be seen how Central Asian artists of the twenty-first century will balance the seemingly opposing forces of tradition and foreign influence, although it has been this very dynamic that for over five thousand years has resulted in the production of some of the most profoundly influential art in world history.

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Art—China

The breathtaking scope of Chinese art—highly decorated Bronze Age vessels, exquisitely executed calligraphy, monumental Buddhas carved from rock cliffs, landscape paintings brushed in ink on silk scrolls, the Socialist Realism of the Mao years, and even the fireworks display at the 2008 Beijing Olympics (designed by a renowned Chinese artist)—comprise a remarkable several-millennia-old body of Chinese art that developed both in response to, and isolated from, other cultures.

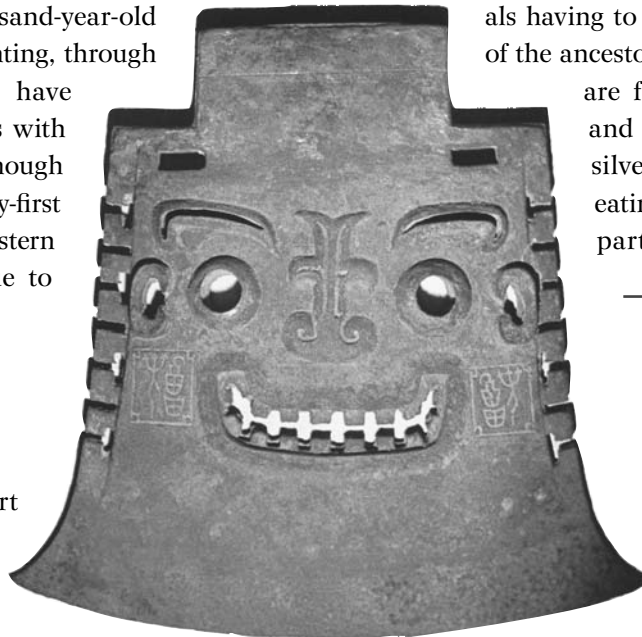
Chinese art, as part of China's culture, can claim to be one of the world's oldest and continuous traditions—existing in relative isolation at times, at other times heavily influenced by outside elements. It deserves respect for extraordinary achievements, especially in calligraphy and pictorial art, and for a more than one-thousand-year-old tradition of landscape painting, through which Chinese painters have used art to come to terms with human life and nature. Although Chinese artists in the twenty-first century have absorbed Western ideas, many still continue to draw upon their tradition.

Pre-Imperial Era: circa 3000–221 BCE

The origins of Chinese art date to the third millennium BCE with the emergence of settled

agricultural communities, mainly in the North China plain. Since early in the twentieth century archeologists have unearthed many pieces of finely built, wedged and coiled ceramic pottery in a variety of regional, cultural styles. Early artisans embellished their bowls and flasks with brushwork in abstract designs or with depictions of fish and other creatures. This tension between stylized and more naturalistic representations remains an enduring feature of Chinese art throughout history, from the Neolithic period on.

With the emergence of cities and dynasties by the second millennium BCE (Shang dynasty, 1766–1045 BCE; Zhou dynasty, 1045–256 BCE), a highly stratified society appeared in which the royal house and nobility patronized artisans who produced luxury goods, some for personal consumption and many for ceremonial purposes, especially rituals having to do with the emerging cult of the ancestors. Tombs from the period are full of items—jade, ivory, and lacquer objects; gold and silver ornaments; and bronze eating and drinking vessels in particular—made by highly



Bronze ax head. Late Shang dynasty (1766–1045 BCE). Imperial Palace, Beijing. The strange combination of features in the monster face of this ax head is characteristic of Shang design. Photo by Joan Lebold Cohen.

skilled craftspeople to serve the deceased in the afterworld (and perhaps to appease vengeful spirits who might harm the living). During the Shang dynasty large-scale human and animal sacrifices were included in these burial treasure troves, but under the influence of Confucian humanism by the late first millennium BCE, this practice was replaced by the use of substitute figures (*ming qi*) fashioned in clay, metal, or wood.

The utilitarian but highly decorated bronze vessels, the most admired and studied of these artifacts, signified the wealth and power of the families who owned (and were buried with) them. The vessels evolved in a basic repertoire of about thirty shapes, with the three-legged bowl (*ding*) being the favored form. Some vessels were very large, weighing over 100 kilograms (about 225 pounds); some derived from earlier pottery forms; others were sculptural and took the shape of composite animals. The artistry and technical virtuosity that went into these ritual bronzes has seldom been equaled and never surpassed in bronze casting anywhere. The outside surfaces were highly decorated with rigid bands of semi-abstract relief sculpture—some suggesting feathers and scroll patterns, and others depicting birds, dragons, animals, and mythical figures, many of which reflect Shang attitudes to the supernatural world. Most famous is the “monster face” (*taotie*), a mask-like, double-profile motif with eyes and curlicue brows but no lower jaw.

The image evokes the shaman’s costumed face in pre-Confucian religion; even in the twenty-first century shamans wear animal skins that are missing the lower jaw.

The ceremonial and burial use of bronzes continued throughout this period but by the late Zhou, especially after 600 BCE, styles reflected changes in Chinese society and culture. Warring states and disunity brought social unrest; the era of China’s great

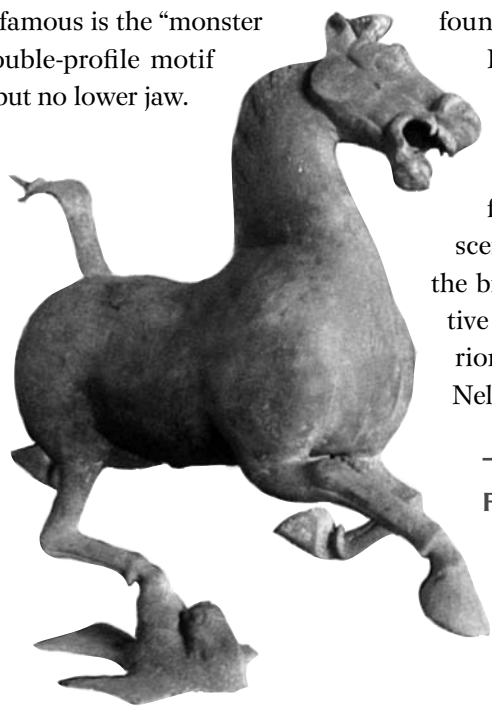
philosophers—Confucius, the legendary Laozi, and Mozi—arose. Thus the intricate scroll patterns and monster faces of earlier times lost the energy and mystery of the old shaman rituals. Bronze vessels still used in burial sites were adorned with a looser, decorative elegance, and they have become treasured collector’s items in the twenty-first century.

Early Imperial China: 221 BCE–220 CE

Archaeological finds, mainly from tombs, remain the best source for studying the development of art in the era beginning with the Qin (221–206 BCE) and Han (206 BCE–220 CE) dynasties. The most spectacular find in recent years was the huge, 2,200-year-old army of terracotta soldiers buried to guard the tomb of the Qin emperor Shi Huangdi, the “First Emperor” to unify China. In 1974, a farmer digging a well near the modern city of Xi’an stumbled upon some of these slightly larger-than-life-sized statues. Subsequent excavations showed not only the highly developed skill in clay sculpture of the time but amazingly realistic detail and individual facial features.

This realism also appears in miniature clay figures, notably of dancers and entertainers,

found in less grandiose tombs from the Han period. Han funerary traditions also included burying clay models of houses, some with realistic details such as penned enclosures for pigs and hutches for chickens. A scene depicting two crows perched on the branches of a tree, part of the decorative embellishments painted on the exterior walls of such a model (now at the Nelson-Atkins Museum of Art in Kansas



Flying horse from Wuwei, Gansu Province. Eastern Han dynasty (25–220 CE). This sculpted bronze steed suggests mythically divine qualities attributed to the horse. Photo by Joan Lebold Cohen.

City, Missouri) is a precursor to tenth-century flower and bird painting—the first extant example, in fact, of what would become in the tenth century an important and independent genre in Chinese art.

More luxurious tomb items forged from precious and semiprecious metals (gold and silver as well as bronze) further attest to the high skill of workmanship and the tendency toward realistic representation. A highly detailed bronze—a miniature horse and chariot, complete with driver, umbrella, and reins, which was found in Gansu Province along the ancient Silk Roads route—is very different from the massive, symbolically decorated bronze vessels of the previous era. Even more striking is the bronze “Flying Horse of Gansu,” in which the horse, depicted in full gallop, is poised on just one hoof. Here, spirit as well as naturalism animates the creation of this long-dead anonymous sculptor.

Archaeologists have uncovered an example of one of China’s unique contributions to world art and commerce—silk fabric art—in a burial site at Mawangdui, on the outskirts of present-day Changsha. Bog-like conditions helped preserved artifacts in the tomb of the Marquise of Dai (Lady Dai), including the noblewoman’s clothing and body (found in a semi-mummified state), and a large T-shaped silk banner. Painted scenes on the banner, dating to the second century BCE and now in the Hunan Provincial Museum, represent hierarchical levels of the cosmos—heaven, Earth, and underworld—and reflect the early Han belief in the close relationship between the human and supernatural worlds.

Departing from traditional views that interpret the banner based on three sections of equal proportion in the composition, Wu Hung (1992), in his study “Art in a Ritual Context: Rethinking Mawangdui,” sees the scene comprising four parts. Heaven, predictably occupying the top (i.e., the “crossbar” of the T), contains a sun (superimposed with the image of a crow) in the right corner, a crescent-shaped moon with a perching toad on the left, and the Han imagining of the Great Ancestor (a primordial deity depicted as a man with a serpent’s tail) in the middle. Among the constellations immediately below swarm dragons and fantastic



The T-shaped banner from Lady Dai’s tomb is covered with images that reflect the early Han belief in the close relationship between the human and supernatural worlds.

snakes. Positioned at the place where this horizontal heaven is connected to the T’s stem, two doorkeepers eagerly wait to admit Lady Dai. All the figures are painted energetically, in an almost cartoon-like

style, combining human and capricious animal forms floating in the ether.

In the two “earthly” sections below heaven, which occupy more than a third of the banner’s total space, Lady Dai prepares for entry to the afterlife—underneath a high ceiling that signifies the difficulty of entering heaven, and above the section where family members offer sacrifices to her. In the lowest and fourth part of the composition an underworld creature holds up the world like a Hercules. Coiling snake-like dragons enclose each of these four sections. At the dramatic center they crisscross threading through a circular jade *bi* disc (a symbol of heaven). The artist’s skill in organizing such a complex story in a series of space cells reveals an early mastery of a narrative form and an approach to image making that moves toward “realism.”

Painting and Calligraphy: 220–589 CE

Relics such as Lady Dai’s banner provide tantalizing glimpses not only into the society and belief system of the age but also into the early development of two-dimensional Chinese art—painting. The Chinese invention of paper and ink is of enormous significance to the world as papermaking techniques and brush writing also moved west along the Silk Roads. (At the same time outside influences, specifically Buddhism and its art, moved eastward along the same route.) Paper and the writing brush hugely influenced the development of China’s centralized bureaucratic form of government and the high culture of its literati class. Painting and calligraphy would develop in China as “high art” forms.

Abundant Chinese literary sources and histories state that the post-Han era—a period of disunity before the Sui dynasty began in 589 CE—was an important one for painting. But because works of art were destroyed in periods of social unrest and political upheaval, few paintings of the period survive. One of the most important that does, a silk handscroll called *Admonitions of the Instructress to the Ladies of the Palace* and attributed to Gu Kaishi (c. 344–c. 406), illustrates the already centuries-old Confucian view

of art as didactic and morally enriching; the narrative defines wifely virtues, filial piety, and rules for proper behavior. In one scene an empress resolutely places herself between her frightened emperor husband, his frantic courtiers, and a charging bear; in another, servants groom and dress royal children while their indulgent parents look on. The figures, outlined in even brushstrokes with only a few areas of color filled in, show detailed facial expressions, especially on the men. Handscrolls (this one some 3.5 meters (11 feet long), were meant for intimate viewing, with three or four people looking on as the person holding the scroll revealed small sections at a time.

For Daoists of the period, whose ancient traditions fostered connections to nature, art had spiritual value; thus landscape, later a major theme in Chinese painting, emerged as a subject. The quality of brushstrokes, as vehicles of expression and as the “bones” giving a work its primary structure, became the benchmark by which the Chinese judged a painting. This combination had already found its purest embodiment in calligraphy, a form of expressive handwriting in a variety of styles that would carry on pedigrees of famous scholars. Wang Xichi (c. 303–361 CE), one of the most renowned practitioners of his day, became the model for many later calligraphers and literati elite.

Buddhism and Chinese Art

The arrival of Buddhism, which started as a trickle of monks with sutras and images in the late Han dynasty and built to a flood by the sixth century CE, was the major foreign influence on Chinese art before the global reach of European culture and power in recent times. Buddhism, brought by Indian monks traders, entered China by two routes: maritime via the Indian Ocean and Southeast Asia, and overland by the Silk Roads into northwestern China, which was still the center of the empire. The visual stimuli initially arrived through illustrated scriptures and small portable images and shrines, but soon Chinese created their own larger Buddhist sculpture and mural painting.



Attributed to Gu Kaishi (c. 344–406), *Admonitions of the Instructress to the Ladies of the Palace* (detail). Scroll, ink on silk. In this scene nannies groom royal children as parents look on indulgently. Collection of the British Museum.

After the fall of the Han dynasty, the disintegration of central political authority, ensuing social chaos, and invasions from the north greatly facilitated the acceptance of this otherworldly religion in both the North China plain and the Yangzi (Chang) Valley; Buddhism offered consolation in life and the promise of salvation after death. The carving of huge caves and monumental statues from solid rock cliffs, an art form established in India, migrated with Buddhism to China and punctuated the landscape en route. (The huge standing statue of the Buddha in Afghanistan, destroyed in 2001 by the Taliban, is such an example.)

The rulers of the Northern Wei dynasty (386–535 CE), who made Buddhism a state religion in the large part of northern China they ruled, became important patrons of Buddhist sculpture. In the first Northern Wei capital at Datong (Shanxi Province), in the shadow of the Great Wall, they sponsored the construction of cave temples with large stone statues and brightly painted murals inspired by the Gandharian

style of northwestern India and Afghanistan, which itself had borrowed heavily from Greco-Roman sculpture. In the great cave complex at Yungang masterly images of the Buddha and his pantheon still exist; some, over thirty feet high, depict stories of his lives drawn from the *Jataka Tales*. Originally painted with gold and vivid colors on living rock, they now stand largely intact but weathered into a more austere, colorless appearance not unlike that of the once-painted classical architecture and statuary of ancient Greece.

Images of the Buddha (and the practices of Buddhism) changed as they traveled east. Already at Yungang, Chinese aesthetic and social values made their mark on the foreign religion and its art. Here the full bodied, curvaceous Indian Buddhist images assumed a newly sinicized form and were flattened and hidden under robes, according to Chinese Confucian propriety, to avoid any corporeal impropriety. When the Northern Wei emperor moved his capital south to Luoyang in 494 CE, a former co-capital with



Li Zhaodao (c. 675–730), *Emperor Ming Huang's Journey to Shu*. Colors and ink on silk. Although attributed to Li, the silk hanging scroll is almost certainly a Song-dynasty copy.

Xi'an, he decreed that evermore magnificent caves be carved out of the living rock at nearby Longmen Grottoes on the bank of the Yi River; they were also painted with scenes from the Buddha's lives. The stone at Longmen—a hard, closely grained, and dense limestone, quite different from the sandstone at Yungang—allowed for more detailed carving.

After the reunification of the Chinese Empire under the Sui (589–618 CE) and Tang (618–907 CE) dynasties, Chinese rulers continued imperial patronage by building additional cave temples at Longmen. (With more than 2,300 caves, and 100,000 statues and relief sculptures carved over a 250-year period, Longmen contains some of the finest examples of large-scale Buddhist carvings in China.) The style of Buddhist imagery was transformed again by a new wave of Indian influence, as the Buddha and his heavenly host had lost their stiff, disembodied poses and were refigured with softer, rounder, even sensuous bodies, sometimes in other materials such as wood and bronze.

Cave-temple paintings created from the fifth through the twelfth centuries, with their Indian and Central Asian inspirations, trace the evolution of Chinese religious painting over this long period. The largest and best preserved cover the walls and ceilings of 492 caves at the Mogao complex (at the oasis of Dunhuang in the Gobi Desert in Gansu Province). Many murals feature radiant polychrome frontal images of a

seated Buddha with his huge bejeweled pantheon hierarchically arranged in paradise. Others draw on the *Jataka Tales*, chronicling the former lives of the Buddha. An exotic motif used in these murals—and, in the context of Confucian morality, an erotic one—are the Flying Apsaras, heavenly (female) beings without wings who nevertheless soar through the sky wearing scanty Indian-style clothing and long diaphanous scarves that help them fly. Mural artists painted the Apsaras in deeply hued colors using some shading to suggest volume.

Two other aspects of these desert-air-preserved paintings deserve mention, not just for the subjects they address but for the backgrounds they place their subjects against. First, such paintings often show the Buddha seated in front of a Chinese-style palace, and these representations are the oldest visual record of Chinese palace-style architecture of wooden construction—more horizontal than vertical, with series of courtyards and distinctively upturned golden tile roofs. The form of architecture persisted, the surviving Qing Imperial Palace in Beijing being its latest reincarnation. Second, more relevant to the development of Chinese painting, Dunhuang paintings sometimes use natural scenery in the background. The color choice is noteworthy, especially in view of later Chinese landscape painting's general preference for monochrome ink or muted color. In the Tang period (618–907 CE), artists painted

mountains, valleys, and rivers in brilliant blue and green hues, a color pattern that would predominate as landscape painting, treating nature itself as the main subject, emerged in the late Tang and subsequent dynasties.

The most famous example of this use of blue and green mineral colors in a non-religious context is a silk hanging scroll, *Emperor Ming Huang's Journey to Shu*. Although the painting is attributed to Li Zhaodao (c. 675–730), it is almost certainly a Song dynasty copy. (Chinese reverence for the past made copying artworks a common practice, sometimes as forgery but more often to preserve valued cultural artifacts whose material substance, silk or paper, was prone to decay and disintegration.)

The painting recounts a famous incident in Tang dynasty history, the story of the emperor forced to flee from the capital when a rebel general, who'd had an illicit liaison with the emperor's favorite concubine, Yang Guifei, defeated imperial troops and seized the throne. Accompanying the emperor in exile is a procession of black-hatted courtiers riding through passes between three steep mountains. Women in wide, brimmed hats with veils move in single file along the narrow paths. In the glorious composition, with the picture plane tilted skyward to convey spatial depth, the verdant, pointy peaks poke through layers of clouds.

Emergence of Literati Art: Song–Yuan Period

Chinese society underwent profound changes in this so-called Middle Period of Chinese history. For art, the most important change consolidated social eminence and cultural hegemony with the emergence of the literati (*wen ren*). The term refers to those literate in the classical language who aspired to pass the imperial government's civil-service examination, a system of recruiting officials on merit rather than on family or political connections. Only a small minority of the millions of men who took these rigorous exams actually passed with a score high enough to win them a government post. (Women were not eligible



Fan Kuan (active c. 1023–1031), *Travelers by Streams and Mountains*. Fan's use of perspective in this 7-foot-long hanging scroll suggests humankind's small role in the universe.

to apply for court positions, and thus to take the exams, but they nevertheless studied classical language and parallel subjects in the Confucian spirit to make themselves more worthy to be chosen as wives and mothers.) As a consequence the large pool of male



Xia Gui (c. 1180–1230), *Twelve Views from a Thatched Hut* (detail). Handscroll, ink on silk. Just a few deft brushstrokes capture the details of the scene.

examination “failures” constituted a landowning rural gentry class that preserved largely Confucian values and imperial peace throughout the vast empire. Literati were profoundly “civil” rather than militaristic in their outlook, a sensibility reflected in the art they patronized and produced themselves. Although these trends started in the Han period and continued in the Tang, Confucian ideals of ruling through the pen (“writing brush” in China) were only fully realized in the Song period; there too they remained in dynamic tension with imperial power and the military might behind it.

Literati art is remarkable, almost unique in world history, because the individuals who produced it also consumed or patronized it. Most importantly it was, at least for a time, independent of court influence. The cultural prestige of these gentleman artists became part of their social status. Literati art forms were almost all “arts of the brush”—calligraphy, poetry, and ultimately painting.

During the tenth century a number of subsequently famous landscape masters began to treat “scenery” as more than a background to human activity. Landscape’s emergence as the most prestigious genre of painting, often linked to the veneration of nature in

Chinese Daoist philosophy, has also been correlated to the Confucian self-esteem of artists who expressed their own feelings rather than cater to the wishes of rich and powerful patrons. Many centuries would pass before anything comparable developed in Europe; thus some art historians acknowledge a precursor to “modernity” in Chinese painting by the end of this period.

The first half of the Song dynasty, noted for large hanging landscape scrolls, is also the earliest period from which survive a reasonable number of original works, although their subsequent prestige and market value has made forgery a thriving industry right down to the twenty-first century. One famous work from the eleventh century, *Travelers by Streams and Mountains* by Fan Kuan (active c. 1023–1031), now at the National Palace Museum, Taipei, Taiwan, is monumental in size (206.3 x 103.3 centimeters, almost seven feet high) and heroic in concept. The three planes of the painting, the smallest in the foreground giving way to immense scale and space beyond, illustrate a particularly Chinese expression of perspective. Inky, textured strokes in the bottom eighth of the picture depict a low-lying group of rocks. In the next section two tiny figures driving a mule team enter

from the right; craggy hillsides spanned by a bridge rise above them, on which leafy gnarled trees grow, their trunks outlined in black; a temple roof appears at the timber line of the hill on the right. In the third section, which fills nearly two-thirds of the scroll, a giant mountain looms, rendered with dry-brushed ink strokes pressed closely together to create the illusion of a towering monolith. A waterfall drops from a cleft in the mountain like a decorative ribbon and dances its rhythmic course over rocks at the mountain's base, which is partly obscured by mist. The scene embodies a kind of naturalism—one could imagine standing in this landscape and experiencing the feeling the artist so clearly conveys: the glory of nature within the universe and the small role that humans play in this celestial plan.

A number of talented artists of the period, such as Guo Xi (c.1020–1090) and Li Tang (c.1050–c.1130) practiced this new form of monumental realism in landscape painting. Emperor Huizong (r. 1101–1126) was a talented painter himself who led the Song dynasty academy. Perhaps his preoccupation with the arts was so intense that he neglected the threat to his empire when the Northern Jin state invaded his capital Bianliang (present-day Kaifeng). Some of the court fled south to Hangzhou, where his son established a temporary capital as the Southern Song (1127–1279).

The Southern Song emperor Gaozong (reigned 1127–1162) reestablished the academy in this milder clime. Living next to the beautiful West Lake surrounded by mountains, lush flora, and trailing mists, artists confronted a new imperial mood and a new way to convey an atmospheric landscape. Song rulers were no longer lords of the “Middle Kingdom,” as the Chinese named their country. They were a military failure in flight from the northern conquerors. Having lost their confidence as masters of their world they turned inward, living for the pleasures of the moment, day and night. Moreover, “form likeness,” what they called copying from nature, was considered an unworthy goal.

Southern Song paintings were smaller in concept and scale; handscrolls designed for intimate viewing

unwound with a cinematic effect, and album leaves (pages) provided yet a smaller scale. Artists no longer attempted to paint towering landscapes that conveyed the precise wonders of a scene; instead they focused on compositions that expressed a lyrical mood, something the art historian James Cahill, a Chinese specialist, calls “a blend of dream and reality.” Two outstanding academy artists, Ma Yuan (flourished c. 1190–c. 1225) and Xia Gui (c. 1180–1230) used simplified forms—contrasts of light and dark, and great expanses of blank space—to suggest a fleeting world captured only in glimpses. The extant portions of Xia Gui's *Twelve Views from a Thatched Hut* (handscroll, ink on silk, 28 centimeters [11 inches] high; 2.31 meters [about 7.5 feet] long) show subtly and perfectly modulated ink washes that evoke a landscape veiled in mist; just a few deft brushstrokes indicate details of the scene—grasses, trees, fisherman, and two bent-over human figures carrying heavy pails.

The “Ma-Xia one-cornered style,” an innovation named after these Southern Song masters, conveyed a sense of space by using asymmetrical compositions. Ma's *Viewing Plum Blossoms by Moonlight* (Metropolitan Museum of Art), a silk fan mounted on an album leaf, exemplifies this charmingly off-center configuration; an angular landscape of cliff and mountains occupies the space on the lower left, from which white-robed gentlemen gaze at plum branches reaching toward the moon—a small, pale circle counterbalanced and floating in the sense of limitless space on the upper right.

Although the Mongol conquest of China during the Yuan dynasty (1279–1368) devastated the Chinese in many respects, the arts continued to flourish. Many Song scholars refused to serve their new “barbarian” rulers and devoted themselves to literati pursuits of painting, poetry, and calligraphy. One such scholar, Ni Zan (1301–1374), who had grown up in effete luxury but then withdrew from official society, ignored the traditional spatial convention of near, middle, and far distances as they spanned from the bottom of the picture to the top. Scholars interpret Ni Zan's un-peopled compositions—with



Shen Zhou (1427–1509), *Watching the Mid-Autumn Moon*. Ink and colors on paper. Shen was the first to use the motif of a poet dominating the nature he observes instead of being dwarfed by it.

standard-issue trees, rocks and mountains—as an expression of the artist’s isolation from his foreign-occupied world, and a longing for a simpler time. James Cahill calls Ni Zan’s dry-brushed compositions “unimpassioned, subdued, and static.”

The range of landscape styles during the late Yuan dynasty increased as literati pursued and developed painting outside the influence of the court. Wang Meng (ca.1308–1385), another painter whose work conveys an aura of detachment, seemed to fill every square inch of silk with trees, rocks, streams, architecture, animals, and people. Fang Congyi (c.1301–c.1393) paints in a powerful, individual, and more emotional style, with inky trees and flowing ink lines. His hillside mushrooms up in a powerful explosion of black strokes to an umbrella crest of vegetation, while shadowy mountains rise in the distance.

The restoration of Chinese rule with the Ming dynasty (1368–1644) reinforced literati dominance of high Chinese culture, but such tastes did not totally predominate. The Ming saw a resurgence of popular culture and art with accelerating economic growth and urbanization; like Europe in this period, China too was developing a middle-class culture rather different from rural-based folk culture, itself given a boost by the availability of cheap, popular prints. (Most of the vernacular painting and printmaking for popular or middle-class consumption, however, has been lost.) Yet the history of the period remains associated with upper-class art and, as many art historians agree, that art is one of the most sophisticated traditions in global art history.

The Ming’s conscious attempt at summoning leading artists to court resulted in the group informally called the Ming Academy. These artists produced colorful bird-and-flower paintings in dramatically decorative styles as well as portraits, history, and genre paintings. At the same time the rise of amateur literati artists, who had gained recognition in the Southern Song and Yuan, became a more important part of Chinese art. Shen Zhou (1427–1509), a shining example of a literati painter born into a family of scholars-painters, learned many styles by copying. Thus with a mastery of ancient styles he created his own compositions—Shen was the first to use the motif of a poet dominating the nature he observes, not being dwarfed by it—and included poems in a finely wrought calligraphic hand to reinforce the painting’s meaning. In *Watching the Mid-Autumn Moon*, (ink and colors on paper, Museum of Fine Arts, Boston), the artist and his friends sit drinking wine in a grass shack across from an expanse of still water, while the harvest moon shines. His heart-felt poem extols enduring friendship and the evanescence of life.

Later in the Ming, Dong Qichang (1555–1636) dominated the scene as scholar-official, painter, and theorist. His view of Chinese art history divided painters into two schools: a northern (conservative) school dominated by professional painters whose often-decorative style emphasized technical skill (something he categorized as “sweet vulgarity”), and a southern (progressive) school whose painters aimed for free, expressive brushstrokes and the development of personal style. (Neither school depended on any



Dong Qichang (1555–1636), *Traveler in the Mountains*. Dong—a Ming court scholar-official, painter, and theorist—advocated preserving the values and traditions of the cultivated scholar.
National Palace Museum, Taipei, Taiwan.

geographic significance.) Dong introduced ideas used to discuss calligraphy, such as “opening and closing,” and “rising and falling,” into dialogues about painting. He advocated learning from ancient masters before attempting to paint from nature, cautioning that the excellence of a painting should not be judged by how closely the work resembles nature, but by its evocative power.

Dong’s landscapes show deliberate dissonances in the relationship between foreground, middle ground,

and background; he effectively flattened space so that mountains, trees, and rocks functioned less as representational forms than as semi-abstractions. In *Autumn Mountains* Dong Qichang shows his innovative spirit by arranging his landscape arbitrarily; curving mountains hug the earth and trees march into the distance like soldiers at the painter’s command.

The Last Emperors: 1644–1911/12

The Manchu conquerors of China, who ruled as the Qing dynasty (1644–1911/12), went to great lengths to conciliate the Confucian literati class, and they became avid patrons of Chinese high culture. Eventually most Chinese scholar painters were reconciled to Manchu rule, but several “loyalist painters”—because of their creativity, but also perhaps due to their blood ties to the Ming, which appealed to modern Chinese nationalism—have been highly esteemed since the twentieth century. Two worthy of mention are Zhu Da (1626–1705) and Zhu Ruoji (1642–1707), better known by their respective assumed names, Bada Shanren and Shi Tao.

Zhu Da lived in luxury as a Ming prince until the age of eighteen, when the dynasty fell. He joined a Buddhist monastery where, according to some historians, he affected “crazy” behavior to escape Qing persecution. He took the name Bada Shanren (Dweller of Eight Great Mountains) and channeled his despair into painting flowers and birds (the latter usually rendered with angry expressions and only one leg), fish and other creatures, and simple landscapes with powerful inky black strokes that course across the paper in surprising directions. His work falls well within the Chan (Zen) Buddhist tradition of seeking essential truth within a tiny piece of nature. Shi Tao, another relative of the Ming, was only two when the Qing came to power. His principled eremitism earned the respect of Confucian literati and his emphasis on originality has made him an icon for modern Chinese ink painters. At times some of his landscapes approach abstraction; in one, an album leaf simply called *Landscape*, a monk sits in a small hut enveloped by heavily outlined, mountainous terrain dotted with



Lin Fengmian (1900–1991), *Portrait of a Woman Reading*. Chinese painters in the 1930s who stressed the realism rather than the abstraction of Western art got more support from the Nationalist government. Photo by Joan Lebold Cohen.

vegetation that seems, literally, to swallow him up. Dots, traditionally used to suggest diminutive vegetation on rocks, assume a much more dominant place in this composition; Shi Tao's use of them clearly influenced Wu Guanzhong (b. 1919), whose *Pine Spirit* (1984), with its links to abstract expressionism, still pays homage to Chinese tradition.

The Manchus, who had already adopted many Chinese practices before ruling as the Qing, continued to show respect for Chinese art that was based on the study of old styles and masters. Literati painting in the Qing thus became orthodox and stereotyped, especially as represented by the prestigious "Four Wangs" of the late seventeenth and early eighteenth centuries: Wang Shimin (1592–1680), Wang Jian (1598–1677), Wang Hui (1632–1717), and Wang Yuanqi (1642–1715). But painting was still infused with a current of individualism and the idea that the art represented the moral character of the artist. In

the eighteenth century a group known as the "Eight Eccentrics of Yangzhou," named for the prosperous commercial center in the lower Yangzi Valley where they worked, continued in this direction, appealing to the tastes of an audience beyond the court with figural subjects (and more flowers and birds) that were less ponderous and more commercially viable than landscapes.

Many have claimed that, after the trauma of Mongol Yuan, Chinese culture adopted an inward, "Great Wall" mentality. This is only partly true, although "foreign" Buddhist art, long since sinicized, had indeed lost much of its creative force. Systematic contact with maritime Europe started in the sixteenth century and had some influence on some aspects of Chinese art, largely through European prints brought by Jesuit missionaries; such traces can be found in portrait painting from the late 1600s onward, and in efforts at fixed-point perspective in early seventeenth-century landscapes. In general, literati artists regarded European painting as a curiosity rather than serious art, but Qing emperors were enamored of Western representational techniques and the effects of *chiaroscuro*. The Jesuit missionary Giuseppe Castiglione (1688–1766), who became a court painter for the Qing sometime after 1716 (under the Chinese name Lang Shining), worked to some extent with Chinese assistants to synthesize European methods and traditional Chinese media.

Chinese ceramics, however, made a very significant impact on the rest of the world, including Europe. China's long history of advanced ceramic technique culminated in the perfection of smooth white and green celadon in the Song and true porcelain in the Ming. Appreciated as an object d'art by both court and literati, porcelain was nevertheless a tradesman art. There were famous kilns, like Jingdezhen in Jiangxi Province under imperial control, but no famous potters. Porcelain was a major Chinese contribution to world trade and world culture, but in China it was not an art form in which a gentleman could express his command of high culture.

Art historians have generally regarded the nineteenth century in Chinese art as a period of stasis, if

not decline, but this characterization may be oversimplified. The cultural changes that slowly began to influence Chinese artists at the end of the Qing dynasty can best be understood by reviewing the dark period that began with foreign invasions and civil wars in the mid-nineteenth century. After Britain's victory in the First Opium War of 1839–1842 (a second war would follow from 1856 to 1860), the defeated Chinese conceded five treaty ports where foreigners could live and trade. The opening of treaty ports brought new visions of the world through books, magazines, technologies, and materials. Photography and various printing techniques, including Japanese-style woodblock printing, all of which were quite different from methods previously practiced in China, helped to disseminate new views.

In 1864, after the Taiping Rebellion, a prolonged and devastating civil war conducted under the ominous presence of Western troops, Qing imperial forces finally triumphed over peasant forces. Chinese felt increasing pressure after the French conquest of neighboring Vietnam and when Japan defeated China in 1895. The final blow came in 1900 when legions of foreign soldiers defeated the imperial troops in the Boxer Rebellion. At the same time many intellectuals did indeed find nineteenth-century ink painting on silk and paper stagnant. Paintings of idealized mountain landscapes, thought to be without energy and originality, had little relationship to the multiple realities of China—from the increasingly international cities to the decreasingly pristine countryside. But the changes to Chinese traditional painting were subtle in the beginning, introduced one small step at a time. In the second half of the century, a resurgence of calligraphic styles that had been used in ancient “metal and stone” inscriptions revitalized painting in the modern urban center of Shanghai, where the grand literati genre of landscape painting was eclipsed by new vigor in flower-and-bird and some figure painting. It is by no means clear that Chinese art had lost all its creative vitality. In particular, the “Four Rens” in Shanghai (Ren Bonian, Ren Xiong, Ren Yu, and Ren Xun) looked both backward to the grand tradition of ink



Huang Binhong, landscape painting (1982). Even after the end of imperial China, landscape painting continued to develop as artists expressed the new and engaged the old. Photo by Joan Lebold Cohen.

painting and forward to the challenges posed by the coming of the West.

Post-Imperial, Modern China

The movement of reform in Chinese art, connected to the introduction of modern science in China, started before the end of the Qing dynasty with the emergence of the first Western-style schools and the inclusion of Western-style drawing as part of the curriculum. After the establishment of the Republic of China in 1912, a weak government prevented the state from leading this educational reform effectively, although the Minister of Education, Cai Yuanpei, considered art to be an essential part of modern culture and spiritual values. But within several years Liu Haisu (1896–1994), a precocious teenager who would go on to be a leading oil painter and art educator in the



Qi Baishi (1864–1957). A painting of fish and crabs. Qi favored mundane subjects ignored by the elite.
Photo by Joan Lebold Cohen.

Republican era, founded the first private art school in Shanghai. By the 1920s a number of art schools appeared in other major cities such as Guangzhou (Canton) and Beijing, with young artists who had studied in Europe or Japan taking the lead in teaching the new Western art—oil painting, sculpture, design—to an iconoclastic generation eager to rejuvenate Chinese culture.

Their efforts remained a very small part of total Chinese art, confined to major cities and with more effective state support after the establishment of the Nationalist (Guomindang) government in Nanjing in 1927. The next ten years were the most productive period for introducing Western art, both formal academic styles (as represented by the L'Ecole des Beaux Arts-trained oil painter Xu Beihong at the new National University in Nanjing), and by more modernist painters such as Lin Fengmian in Hangzhou and

Pang Xunqin in Shanghai. All Western styles were, of course, new and “modern” to China. But there was a sharp difference between two factions: on one side the putative avant-garde who saw the latest styles of Western modernism—post-Impressionism, Expressionism, Surrealism—as the shock treatment needed to stimulate a progressive modern consciousness in China; and on the other side, those who stressed the scientific realism of more conventional Western art as the key to building national strength. The latter would eventually get more support from the Nationalist government and their Communist successors.

Ink painters remained far more numerous and claimed a far larger share of a growing urban art market. Many clung to tradition but others tried to use modern innovations such as galleries and exhibitions to keep the tradition alive and develop it further. Two of the most famous landscape artists, Huang Binhong (1864–1955) and Zhang Daqian (1899–1983), both called on ink painters to be inventive and display a new energy within the old parameters. Huang explored a deeper level of intensity in black ink; Zhang used color with inventive boldness, especially after he toured the Mogao caves in Dunhuang during the 1940s. There he copied the Buddhist cave murals, using the past as inspiration to rejuvenate the present.

Probably the most famous twentieth century artist, however, was the carpenter-turned-literati-painter Qi Baishi. He reinvigorated the literati tradition by painting humble subjects—garden vegetables, fish, shrimp, and baskets—often with splashes of brilliant color. But his calligraphy, poetic inscriptions, and seal carving (an artist’s insignia stamped on a painting) were all continuations of that cultural milieu—and his venerable appearance fit the role perfectly. He was lionized in both the Nationalist and Communist eras.

The Japanese invasion in 1937 politicized much of Chinese art, but this trend was apparent even earlier in the left-wing woodcut movement supported by modern China’s most famous writer, Lu Xun. The woodcut print was an old medium in China but new movement—its strong and distorted styles inspired by Western artists such as the German Expressionist



Dong Xiwen, *Founding of the Nation* (1954). Oil on canvas. This iconic example of Chinese Socialist Realism depicts Mao on the balcony of Tiananmen Square on 1 October 1949.

Kathe Kollowitz and modernist Russian print makers—introduced themes of social criticism and patriotic resistance against the Japanese. During the War Against Japan (1937–1945) many of these young artists joined the Communist Party in its rural base in the far northwest and shifted their artistic focus to appeal more to peasant tastes. This trend foreshadowed the fate of most Western modernist styles under the People's Republic. Art, in Mao Zedong's words, must “serve the people.”

“Serving the people” meant that art and artists had to follow the revolutionary agenda of the Communist Party in a prescribed style called Socialist Realism, a term borrowed from Stalin's Soviet Union. Perhaps the most iconic example of the style was Dong Xiwen's (1914–1973) *Founding of the Nation* (1954), which depicts Mao atop the balcony of Tiananmen Square on 1 October 1949 as he announced the establishment of the People's Republic. The dramatically arranged composition, with the new leadership lined up at Mao's side, inferred infinite control and a great future. The Communist Party distributed reproductions of the painting as a form of propaganda over a period of years, but the copies (and the painting itself)

had to be doctored several times as figures present on that historic occasion disappeared when they were removed from power.

Traditional ink painting, linked to feudalism, was condemned as part of the old society in 1949. Not surprisingly, many ink painters fought passionately to restore its status, and it resonated with Chinese cultural nationalism especially after the split with the Soviet Union in 1960. The new compositions retained the Socialist Realist formulae but used ink and watercolor as the media. In one prominent example of this “new red wine in old Chinese bottles,” the talented revolutionary woodcut-artist-turned-ink-painter, Shi Lu (1919–1982), created *Fighting in Northern Shaanxi* (1959) in a reprogrammed ink and watercolor style. A small but empathic figure of Mao stands triumphantly peering over the steep drop of rocky mountain dramatically bathed in a revolutionary red-washed landscape.

The politicization of art reached its peak during the Cultural Revolution (1966–1976), the last ten years of Mao's life. For instance, Dong Xiwen had to paint the disgraced president of the People's Republic, Liu Shaoqi, out of *Founding of the Nation*, and Shi Lu was



Liu Haisu (1896–1994), a leading oil painter and art educator in the Republican era, founded the first private art school in Shanghai. Photo by Joan Lebold Cohen.

denounced for making Chairman Mao so small in his *Fighting in Northern Shaanxi*.

For a time Cultural Revolution populism demanded that art be for and by the people, with famous artists denounced either for reactionary feudal thought, bourgeois influences, or both. But by the end of the Cultural Revolution and the beginning of Deng Xiaoping's reform policies both traditional ink painting and less political art came back in all fields.

The first somewhat premature assault on Socialist Realism as a style and doctrine came from a group of young artists in Beijing who took the name "Star Stars." In late September 1979, they created works in previously taboo modernist styles with even more

taboo political and sexual content. They hung an unauthorized exhibition outside the National Art Gallery for two days before police removed it.

Though temporarily stalled, the new generation of artists' impulse to explore modern Western styles could no longer be held back as China opened to the world economically and culturally. By the mid-1980s a "New Art Tide" (*xin meishu chao*) was rising, particularly among students at the state's most prestigious art academies. It crested and broke with a privately sponsored exhibition, "China Avant-Garde," at the National art Gallery in 1989.

This large-scale exhibition drawing younger artists from all over China featured Western-inspired art forms—conceptual art, installation art, mixed media, performance art—as well as all manner of twentieth-century Western modernist styles in painting and sculpture. *Dialog* epitomized the confrontational nature of performance art and prompted authorities to close the show. *Dialog's* two young artists fired pistol shots into a pair of telephone booths they had set up with dummies of a woman and a man connected in their telephone conversation. Five months later the avant-garde's dialog with authorities broke down completely when the more lethal gunfire in Tiananmen Square marked the crushing of the student-led democracy movement.

Democracy may have been stopped in Tiananmen, but new art was not as China became increasingly integrated with the rest of the world at the end of the twentieth century. The 1990s saw the rise of genres popular with foreign buyers, such as "Cynical Realism" and "Political Pop," which turned some younger artists into market superstars. Several who combine painting with installation and/or performance art have become international art celebrities with critical acclaim and exhibitions in the West and subsequent fame in China, especially Gu Wenda and Xu Bing, who both have lived in the United States for long periods. Their deconstruction of the Chinese written language by producing meaningless Chinese characters, either calligraphically or by woodblock printing, has struck a responsive postmodernist cord in the West for toying with the pillars of the

There is in fact no such thing as art for art's sake, art that stands above classes, art that is detached from or independent of politics. Proletarian literature and art are part of the whole proletarian revolutionary cause. • **Mao Zedong (1893–1976)**

established culture, suggesting its impotence and irrelevance. Another émigré, Cai Guo-Qiang, has become famous for his exploitation of gunpowder, another Chinese discovery, in large-scale pyrotechnic displays. He orchestrated the fireworks for the 2008 Beijing Olympics.

The speed of this leap from domestic to global in the early years of the new millennium is an affirmation of China's creativity and innovation. Even if belated, this recognition in the art world has been welcomed by the Chinese, as they achieve a difficult feat: to create new art that is both international and Chinese.

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Art—East Asian and European Connections

East Asian and European art intersected around 100 CE, when trade brought Chinese silk to Roman weavers. From 1200 to 1500, Europeans imported Chinese porcelains and founded potteries to create Chinoiserie ceramics. In the 1800s, European artists developed Japonisme, a style mixing Japanese woodblock print and European imagery. The West's further focus on traditional East Asian art and religion during the twentieth century influenced modern Western art.

By the first century CE, imperial Rome was connected to China by a tenuous filament of silk that stretched more than 11,000 kilometers from Luoyang, the capital of the Han dynasty (206 BCE–220 CE), to Rome. Roman weavers, lacking the coveted silkworm, depended on the import of Chinese raw materials to produce the luxury fabric Roman high society so craved. The enormous distances between the two cultural centers inhibited the flow of bulky goods, however, and though the exchange of commodities, medicinal herbs, gemstones, and gold for silk thread flourished, Chinese art had little influence on the arts of Rome or the lands in between.

By the ninth century CE, heavier items, such as Chinese porcelain, were traveling west along maritime trade routes. The Arab traveler Ibn Battuta (1304–1368/69) remarked on the “green pots” shipped from southern China’s ports to the homes of affluent merchants on Africa’s east coast. Ibn Battuta’s description perfectly characterized the gray to yellow-green ware known in later years in the West as celadon. Known simply as *qingci* (green ware) in China, this

ancient ceramic was perfected in the third and fourth centuries CE. As the backbone of the Chinese porcelain industry, *qingci* was mass-produced in such huge numbers that the Venetian traveler Marco Polo (1254–1324) marveled over ordinary Chinese eating rice from *porcella* bowls—that is, dishes with the hard, lustrous surface of a cowrie shell (*porcella*). In Europe, celadon’s exquisite finish and elusive color promoted this fine ceramic from dinner table to a place of honor in the curio cabinet. Interestingly, these cherished imports were often modified to suit European taste in ways that would have shocked their Chinese makers. Thus, a bowl of “grene pursselyne,” reportedly given by the British archbishop of Canterbury William Warham (c. 1504–1532) to New College, Oxford University, was set in silver gilt, signifying its acceptance as an objet d’art fit for display with similar ceramics that had also been privileged with grandiose mounts.

In Asia, fine ceramics for everyday use were the stock-in-trade of massive export programs; as many as forty thousand pieces of various sorts have been recovered from a single shipwreck. Although choice examples may have graced an imperial table as testimony to wealth and good taste, ceramics retained a functional character in Asia until the late nineteenth century, when the collapsing Qing dynasty cut off the flow of patronage that supported the manufacture of the finest wares.

Chinese Blue and White

At the time of Marco Polo’s sojourn in Cathay between 1275 and 1292, the domain of the Mongol

ruler Khubilai Khan stretched from the Pacific Ocean to the Danube River, from the Himalaya to the Siberian forests. (Cathay, the Anglicized name for China, or Catai, gained currency in Europe when Marco Polo's journals were published.) The Mongol Empire encompassed within its boundaries Beijing, Samarqand, Karakorum, Moscow, all of Korea, parts of Southeast Asia, and Baghdad, the gem in the crown of Islam. This vast empire was one great trading zone where paper money (backed by precious metals and silk) facilitated the exchange of goods, none of which the Mongols made. A new kind of porcelain appeared during the reign of the Khans, one destined to become the most successful invention in ceramic history—Chinese blue and white porcelain.

The cobalt used to paint the vibrant blue designs on the white porcelain ground was originally imported from Persia (Iran). It may be that Persian merchants, residing in the port cities of southern China, were the original market for this ware; the enormous size of some early blue-and-white platters points to clients accustomed to eating off large, common plates, as the Persians did. Regardless, the demand for blue and white porcelain soon spread throughout the world, spawning speculation about the secret of its manufacture. Augustus the Strong (1670–1733), the elector of Saxony and king of Poland, sponsored Johann Friedrich Böttger (1682–1719) in experiments to produce porcelain, efforts that led to the establishment of the works at Meissen, Saxony, in 1710. European manufacture of porcelain did not interrupt the flow from China and Japan. The trade continued through the eighteenth century, with more than a million pieces entering northern Europe in 1774 alone.

Chinoiserie

Painted designs on Chinese porcelain provided an indirect model for the “Anglo-Chinese” gardens that were the rage in England in the early eighteenth century. The small pictures on the porcelain items

inspired actual European and American replicas: in England, the pagoda erected in Kew Gardens, the arched fretwork bridge at Hampton Court (now destroyed, but known through an engraving by the Venetian painter Canaletto), and the fretwork arms of a Chippendale chair; and in America, the fence Thomas Jefferson designed for the University of Virginia campus. Views of merchant houses painted on export porcelains were like illustrated postcards providing a glimpse of Chinese interiors and their furnishings. These miniature views, occasionally buttressed by the reports of travelers to Asia, provided the underpinning for the style known as Chinoiserie. The painter and designer François Boucher (1703–1770) was a master of that hybrid manner. Boucher's romantic *Chinese Fishing Party* (1741) melds Asian-looking actors with an ethereal French setting perfectly attuned to the tastes of his patrons, the French king Louis XV and the Marquise de Pompadour.

Chinoiserie does not exclusively depict Chinese subjects. Japanese themes were included in these Rococo fantasies, reflecting the long-standing trade in Japanese goods. By 1639, the Dutch were established at Deshima Island in Nagasaki Harbor, exporting the Arita and Imari porcelain, which Dutch factories sometimes imitated. Deshima remained the exclusive port of call for foreign trade and the only place where enterprising Japanese could gain knowledge of European art, science, and technology.

The arrival of the American admiral Matthew Calbraith Perry (1794–1858) and his sail- and steam-powered ships in Shimoda Harbor in 1853, followed by the successful negotiation of the Kanagawa and Shimoda treaties, guaranteed trade between Japan and the United States. Because of treaties like these, the world became one great trading zone connected by wind and steam, the telegraph, newspapers, and international expositions (really trade shows) advertising a nation's most-prized products. The Asian exhibits included various kinds of porcelain, svelte lacquer boxes, refined metalwork, wonderful fabrics,



The pagoda at London's Kew Gardens. In the nineteenth-century "Anglo-Chinese" gardens were all the rage.

and in some instances replicas of teahouses, gardens, and even miniature villages that gave life to the paper images sold to be viewed with the newly invented stereopticon. The citizens of the world were getting to know one another and to share their finest products as never before.

Japonisme

Japanese woodblock prints were sometimes part of the trade show inventory. Though not valued as fine art in Japan, the colorful pictures of actors, courtesans, and landscapes filtering into Europe had great appeal for artists such as Claude Monet (French; 1840–1926), who found in these prints

both inspiration and confirmation of his own efforts to forge a modern style. Monet covered his dining room wall with Japanese prints, built a Japanese garden with an arched wooden bridge, and posed his wife in a bright kimono against a background accented with Japanese fans. That picture, *La Japonaise: Madame Monet in Japanese Costume* (1876), was exhibited alongside other Japonisme-style works by Mary Cassatt (American; 1844–1926) and Paul Gauguin (French; 1848–1903). Some artists drew directly from the print sources. Gauguin incorporated a sketch of wrestling figures, copied from the Manga (Sketchbooks) of Hokusai (1760–1849), into his *Vision after the Sermon* (1888). Vincent van Gogh (Dutch; 1853–1890) made a close copy of

“Evening Shower at Atake and the Great Bridge,” number fifty-two in the print series *One Hundred Famous Views of Edo* (c. 1856–1858) by Hiroshige (1797–1858). *Nocturne in Black and Gold: The Falling Rocket* (c. 1875), by James McNeill Whistler (American; 1834–1903), is indebted to Hiroshige’s prints of the same subject.

The popularity of the prints among these artists was not solely because of their availability, flat color, lack of modeling, or the choice of unusual points of view. Part of their appeal was on the social level. Their treatment of “low-life” themes in Edo (present-day Tokyo) was in sympathy with depictions of the demimonde in Paris, such as those by Henri Toulouse-Lautrec (French; 1864–1901). The exotic sexuality of the Japanese prints in the *ukiyo-e* style (drawings of Edo’s “floating world,” or pleasure quarters) found a match in the eroticized novels of the French naval officer Louis-Marie-Julien Viaud (under the pseudonym Pierre Loti; 1850–1923) and the opera *Madame Butterfly* (1904), by the Italian composer Giacomo Puccini (1858–1924). And the fascination of the urban citizen of Edo with landscape was in harmony with the *plein air* (outdoor) movement in European painting.

Curiously, the earlier influence of Western art on these same Japanese printmakers is less well publicized. The most famous of all Japanese prints, Hokusai’s “In the Trough of the Great Wave at Kanagawa” (first in the series *Thirty-Six Views of Mt. Fuji*, c. 1827) was derived from earlier studies that Hokusai called the “Great Wave in the Western Manner.” And both Hokusai and Hiroshige designed prints illustrating one-point perspective, a Western technique. East and West, artists were looking at one another’s work for inspiration and guidance.

Influential Role of Museums

In the latter part of the nineteenth century, adventurous Westerners began to report directly from Asia. The American writer Lafcadio Hearn (1850–1904), fleeing Western materialism, published *Japan, An Attempt at Interpretation*. The Harvard-educated Ernest



Claude Monet, *La Japonaise: Madame Monet in Japanese Costume* (1876). Oil on canvas. Museum of Fine Arts, Boston. Monet, inspired by all things Japanese, also built a Japanese garden with an arched wooden bridge.

Fenollosa (1853–1908) received a professorship in philosophy at Tokyo Imperial Normal School (precursor of Tokyo University), where he lectured (with little effect) on the value of Japanese art, which was depreciated in its homeland in the rush toward all things Western. In this climate of fevered modernization, Fenollosa purchased treasures that became the core of the Japanese collections in the Museum of Fine Arts, Boston. In 1912, Fenollosa published his influential *Epochs of Chinese and Japanese Art*.

Sitting on the floor of a room in Japan, looking out on a small garden with flowers blooming and dragonflies hovering in space, I suddenly felt as if I had been too long above my boots. • **Mark Tobey (1890–1976)**



James McNeill Whistler, *Nocturne in Black and Gold: The Falling Rocket* (c. 1875). Oil on panel. Japanese printmakers, such as Hokusai and Hiroshige, influenced the work of nineteenth-century European and American painters.

The public museum emerged as the ultimate market for works of art by the end of the nineteenth century and the beginning of the twentieth. In 1923, the American financier Charles Lang Freer (1856–1919) established a self-named gallery of Asian art in Washington, D.C., the first art museum in the Smithsonian system. And in 1936, the Chinese government staged the first “blockbuster” exhibition of Chinese art at Burlington House in London, giving Western audiences an opportunity to sample the full range of Chinese art.

Influence of Asian Spiritual Systems

The collections of Asian art amassed in the great museums in Europe and North America encouraged the public to pick and choose between the various

arts of different cultures. The painter Mark Tobey (American; 1890–1976) worked in the Seattle Art Museum and became interested in Chinese calligraphy, resulting in his “white writing,” exhibited in New York in 1944. Tobey lived for a brief period in a temple on the outskirts of Kyoto, Japan. Morris Graves (American; 1910–2001), famous for his mystical “bird” paintings, visited East Asia several times between 1928 and 1930. Tobey and Graves both had an interest in Eastern religions, Tobey in Baha’i and Graves in Daoism and Zen Buddhism. Each would avow the influence of these spiritual systems on their works, though neither was imitating religious icons. What these artists sought was not just the form of Asian art but the essence of its spirit.

The master potter Bernard Leach (British; 1887–1979) was on the same spiritual quest. Together with Shoji Hamada (1894–1978), Leach brought Japanese ceramic practices, especially raku techniques, into the studio arts tradition. The rough-hewn ordinariness of raku ware and its spontaneous expressionism was the perfect complement to the intuitive experience essential to much mid-twentieth-century Action Painting and compatible with the spiritual intent of painters like Tobey and Graves. With the interest in raku came the tea aesthetic and an appreciation of Korean ceramics, celadon in particular, but also pieces displaying an accidental effect.

The influence of Asian art on Western painters that began with the Impressionists in Paris ended with artists like Tobey and Graves and the Abstract Expressionists, all of whom saw Asian art in the past tense. Van Gogh was copying thirty-year-old prints that were only available because they were devalued in Japan. The calligraphy admired by Tobey or the Zen-inspired painting that caught the attention of Graves and the painter and critic Roger Fry (English; 1866–1934) belonged to centuries-old traditions. The raku techniques introduced by Leach have had the most enduring effect, yet even this tradition is being challenged by a younger generation of studio potters. The Japanese-style gardens re-created in parks around the world echo old forms and not the new designs of the present generation in Japan. In

the twenty-first century, the ease of communication along the World Wide Web—the electronic counterpart to the Silk Roads—has internationalized local East Asian artistic traditions to the point that it is difficult to distinguish the art of one country from another. As Leach would have it, “All from West to furthest East are unitive and not dualistic” (Leach 1988, 9–10).

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See also Art—China; China; Japanese Empire; Porcelain

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Art—Europe

European art evolved as the concept of “Europe” and its culture changed over time—from the beginning of early Christian-era iconography to the changes in visual expression influenced by shifting empires and tribal migrations. The Renaissance and its retro-focus on classical Greece and Rome brought emphasis from the divine to the individual, until, in the modern era, art needed no ulterior meaning or external reference.

The history of European art is related to the idea of Europe itself, an idea that has been in transition during the twenty-first century. Although the ever-evolving boundaries of modern Europe were not delineated until the nineteenth century, well before that people may have considered themselves “European,” and important artistic activity occurred on the European continent and the island land masses associated with it. The evolution of European art is characterized by the process of fusion and transmutation, much as the political entities of modern Europe developed from encounters between different migrating cultures. The proliferation of Christianity had an important impact on the development of a specifically European art and on its distinctiveness in world cultures, at least until the nineteenth century.

This article focuses on five historical periods: art of the early Christian era (c. 200–400 CE); art of the migrating tribes (400–800 CE); art during the Middle Ages (500–1400); art during the Renaissance and Baroque (1400–1800); and art of the so-called modern world (1800–2000). Although this discussion begins around the start of the common

era and is inextricably bound up with the rise and dissemination of Christianity, important art was produced on the European continent during the Paleolithic and Neolithic periods (cave paintings and sculpture in the former, sculpture and architecture in the latter).

Early Christian Art

The most significant achievement of the early Christian period was the forging of a new iconographic language that expressed the tenets of Christianity from a variety of Mediterranean antecedents: the Greco-Roman world, the Old Testament, and Egyptian art. Christians excelled at appropriation to communicate their message, and the visual tropes that were developed at that time persisted through the later periods of European Art.

Catacomb Painting and Early Christian Iconography

The first art that can be associated with Christianity and the vocabulary of Christian signs was created in the Roman catacombs around 270 CE, when Christianity was one among many cults within the Roman Empire. The catacombs were underground burial sites, used by many sects as well as by Christians; a network of chambers and compartments had been dug under Rome and particularly its outlying areas. Although they were not places of worship, their walls were often covered with imagery that marked the religious affiliation of the deceased.

The chamber devoted to Saint Peter and Saint Marcellinus in the Catacomb of Priscilla (fourth century

CE) provides a good example of how diverse sources were melded together to symbolize Christian resurrection. An image of the Good Shepherd, drawn from classical iconography, occupies the center of the ceiling. In a Christian context, this image represents Christ leading his flock to salvation. Images of salvation drawn from Hebrew scripture surround the central image, such as Jonah being spat out by the whale or Noah relaxing under a vine and fig tree after the flood. New Testament expressions of salvation through Christian sacraments such as the Baptism and the Eucharist (Last Supper) flank the central image of the Good Shepherd in a similar configuration in the Catacomb of Callixtus (second and third centuries CE). In one of the first depictions of the Virgin Mary and the Christ child, a woman nurses her child next to a haloed male figure, most likely Balaam, who points to a star over her head; the image, located in the chamber of the Velatio (veiled woman) in the Catacomb of Priscilla, draws upon Egyptian depictions of Isis suckling Horus.

Constantine, the Church, and the Empire

In 312, on the night before the battle of the Milvian Bridge, the Roman emperor Constantine allegedly dreamt of an insignia emblazoned with the entwined letters *chi* and *rho*, the first two letters of the word *Christ* in Greek, and the Latin phrase *in hoc signo vinces* (in this sign you will win). While carrying the sign of Christ into battle the following day, he defeated his rival Maxentius. Thus began a series of enactments whereby Christianity went from a persecuted cult to a state religion in a period of ten years. Constantine was a pivotal figure. He came to power as a Roman emperor, became the first Christian emperor, and ultimately was the first Byzantine emperor as well. The visual depictions that were formulated during his reign had an important impact on the development of European art for the next 1,500 years.

When Christianity became the state religion of Rome, the power of the empire was placed behind the church, thus stimulating the construction of large-



One of the earliest depictions of the Virgin and Child, from the Catacomb of Priscilla, draws upon Egyptian images of Isis suckling Horus.

scale buildings. Classical structures were transformed to fulfill the needs of Christian worship, with two architectural forms becoming dominant. The longitudinal form, derived from the Roman basilica but revised to be oriented from east to west along its vertical axis, became the format for the Eucharistic church, which was designed to hold masses of people: Saint Peter's, Saint John of the Lateran, and Saint Paul Outside the Walls. The centralized form, derived from baths and tombs, became associated with baptisteries and *martyria* (building dedicated to and containing the relics of martyrs).

The power of the empire was also reflected in the developing iconography, particularly as images of Christ portrayed as a Good Shepherd gave way to images with imperial connotations. The depiction of Christ as emperor first appears in Constantinian basilicas of the fourth century; a mosaic in the apse of Santa Pudenziana (390 CE), for example, shows him bearded and enthroned, surrounded by his apostles.

The nave of Saint Paul Outside the Walls (385 CE) also contains imperial imagery: the wall surface at the juncture between nave and apse is treated like a triumphal arch (c. 450 CE), with Christ—in an *imago clipeata* (framed portrait) at its apex—surrounded by the evangelist symbols, the twenty-four elders of the apocalypse, and images of Saint Peter and Saint Paul.

In 332 CE, to escape the disruption of intensifying tribal invasions, Constantine moved the seat of the empire to the ancient city of Byzantium on the Bosphorus, which resulted in the division of the Christian world into two empires, East and West. The Eastern Empire remained continuous from Constantine's era until the sack of Constantinople (now Istanbul) by the Ottoman Empire in 1456. Art forms became stabilized and persisted over those years as in a time capsule. The Western Empire went through a decline that took centuries to reverse. As Christianity moved from its Mediterranean base to outposts in northern Europe, the integration of diverse sources influenced artistic development.

Tribal Migration

In the age of migration a new imagery developed from the melding of northern tribal stylistic motifs with the Mediterranean structures that had become identified with Christianity. Indigenous northern styles were based upon a nonrepresentational visual vocabulary used in decorating portable secular objects. Often the size and complexity of the object reflected the status of its owner, as seen in the so-called Tara Brooch (c. 725 CE). A large ring brooch made from an assemblage of materials—its every surface, both front and back, is divided into sections teeming with complex, tightly entwined, boundary-pushing interlace. Even the slim vertical fastener is decorated, its finial a dragon's head with two bosses (button-like projections) for eyes.

The Book of Kells, a gospel manuscript—probably written and illustrated by monks on Scotland's island of Iona during the latter part of the eighth century CE, brought to the monastery in Kells, Ireland, in the late

ninth century, and described in the twelfth century by Giraldus Cambrensis as “the work of angels”—reveals a similar decorative concept applied to a Christian object. A richly decorated page, in which the first words of the text are embedded in a lavishly wrought design covering the entire surface, introduces each gospel. The *Chi Rho Iota* page (beginning the story of Christ's birth from the Book of Matthew) resembles a painted version of the Tara Brooch, in which the large forms of the first Greek letters of Christ's name (*XPI*, or *chri*) have been divided into sections, crammed with interlace, and visually “locked” to additional decorative motifs. A keen observer, however, notices human and animal forms hidden among the spirals and paisley-like shapes; a wonderful bit of realism appears in the lower left-hand side: two cats crouch, ready to attack a pair of mice about to seize a Eucharistic wafer.

The Book of Kells also incorporates classical elements. Borrowing from the late Roman practice of preceding texts with portraits of their authors, the manuscript includes portraits of each gospel author sitting under an elaborately decorated arch. The book contains early northern attempts at creating visual narrative, such as the page depicting the arrest of Christ. Finally, this manuscript also reveals a fusion with Egyptian sources, probably related to the eremitic monastic tradition. The image of the Virgin holding the Christ child emphasizes the tender connection of the pair, as seen in images of Isis suckling Horus, rather than the rigidity of the Hodegetria (literally, “she who shows the way”) frontal view, in which Virgin most often holds Jesus in her left arm and points toward him with her right hand, a pose ubiquitous in early Byzantine art.

Medieval Art, East and West

Two differing artistic traditions co-existed during the Middle Ages, corresponding to the division of the Roman Empire into East and West. Although they developed separately, there were occasional points of contact between them and they both exerted influences on the art of the following period.

Eastern

The major division in Byzantine art distinguishes works produced before the period of iconoclasm (early Byzantine art) and works produced after (middle and late Byzantine art). The emperor Justinian (527–565 CE) viewed himself as a second Constantine, and his reign is referred to as the “Golden Age” of Byzantine art. The court church of Justinian, the Hagia Sophia (537 CE, “Holy Wisdom”) in Constantinople, designed by Anthemius of Tralles and Isidorus of Miletus, brilliantly merges centralized and longitudinal architectural forms and embodies the aesthetics of this first period. According to Justinian’s court historian, Procopius, the vast, undulating space, its interior covered with gold mosaics and multicolored marble, seemed to radiate its own light. The dome, an engineering marvel supported on pendentives (spherical triangles) and punctuated by a ring of small windows, seemed to hover above the central space—in Procopius’ words, “as if suspended from the heavens by a golden chain.”

The period of iconoclasm (726–843 CE) involved a theological and cultural dispute concerning the nature of images, their veneration, and their relation to the godhead. Its resolution in the mid-ninth century resulted in a formula that remained operational until the mid-fifteenth century, when Constantinople was conquered by Islamic forces. The middle Byzantine church was built around a domed, centralized plan and was decorated with very restricted images arranged hierarchically. The highest areas were limited to images of Christ; the Virgin and child could be depicted in the apsidal area; the lower regions were limited to images relating to the liturgical feast days. This approach to decoration was prevalent not only in Constantinople, but in Greece, the Holy Land, and the Balkans.

During the latter period of Byzantine art, the image of the Virgin and child underwent an important transformation. Icons that used the older Hodgetria pose—in which the Virgin points to Christ as the way to salvation, continued to be produced—but the image of the “Madonna of Tenderness” served to express the intense emotional relationship between

mother and child and exerted an important influence on images that were later developed during the Italian Renaissance.

During the Middle Ages the Eastern and Western empires were parallel universes, for the most part separate, but with numerous points of contact and interpenetrations. For example, an Ottonian (Germanic) king married a Byzantine princess in the late tenth century, which resulted in the increased use of Byzantine artistic styles and motifs. After 1096, crusaders to the Holy Land encountered many examples of Byzantine artistic production, which they brought back to the West. (Unfortunately, they also conquered and occupied Constantinople for just over fifty years, from 1204 to 1261 CE.) The city of Venice was a crossroads between the West and the East, as seen in the Church of San Marco (1071 CE) with its five Byzantine-inspired domed compartments, each covered in golden mosaics.

Western

Art and learning in northern Europe from the ninth through the twelfth centuries were practiced in monastic centers that were often supported by temporal rulers. Beginning with the reign of Charlemagne (742–814; reigned as Frankish king 768–814 and as emperor of the West 800–814), who had himself declared Holy Roman Emperor in the tradition of Constantine and Justinian, there were several so-called *renascences*, periods where the body of knowledge and the artistic styles of the classical world were consciously reinterpreted as models for contemporary practice.

The major achievement of the Western Middle Ages was the development of large architectural forms, the Romanesque pilgrimage church and the Gothic cathedral. Writing in the middle of the eleventh century, the monk Raoul Glaber described how the world began to be covered with a “white mantle of churches” after the year 1000 when, contrary to popular expectation, it had not been destroyed during the second coming. Whether or not for millennial reasons, during the eleventh century, western Europeans began to consolidate



Innovative architectural advances allowed Chartres Cathedral to be suffused with light. The significance was metaphoric: divine light modulated on Earth was emphasized by stained-glass windows depicting both sacred and secular subjects.

and expand their knowledge of construction methods. By the thirteenth century, the Western cathedral had been developed, primarily in France but also in England, Germany, and Italy.

The cathedral dedicated to the Virgin Mary at Chartres, southwest of Paris, provides an excellent example of how cathedrals (literally, bishops' seats) were encyclopedic embodiments of human knowledge. In its architecture, Chartres illustrates the most important advances of the period: how to build a tall building with a stone vault, for which the flying buttress was developed as a means of transferring the load from the interior to the exterior of the building through the logical application of the bay system of

construction. This method allowed the building to be suffused with light, whose significance was metaphorical, the divine light modulated on Earth, emphasized by stained-glass windows that depict both sacred and secular subjects.

Monumental column statues—depicting nineteen of the twenty-two Old Testament figures said to be precursors of Christ—flank each of three portals, marking the passage from secular to sacred space; along with coordinated high-relief sculptures set into arches over the doorways, they communicate a message of salvation through Christ while at the same time evoking the unity of human history and knowledge. Chartres was a center of learning, and such classical concepts as the *trivium* and *quadrivium* (curricula including, respectively: grammar, rhetoric, and logic; astronomy, geometry, arithmetic, and music) are also expressed on its surface, as is the passage of human time through the depiction of the signs of the zodiac and the labors of the months. Thus the building reflects the cosmos, the establishment of the Heavenly City of Jerusalem on Earth.

Renaissance and Baroque Art

Although there had been several smaller rebirths of classical culture during the Middle Ages, the ultimate one took place during the period (formally) called the Renaissance, when learned people made a concerted attempt to copy and reinterpret Greco-Roman texts and images with greater authenticity. This movement was self-defining and it was centered in Italy, although it was experienced in other geographical locals. Two important artistic developments emerged during the Renaissance: an emphasis on the human rather than on the divine, and the ability to make illusionistic depictions of the real world. Whereas in the Middle Ages the church was the major patron, the Renaissance, in concert with the emphasis on the individual, fostered the rise of the wealthy, aristocratic patron.

There is a substantial overlap between the late Gothic and the Renaissance periods: the tendency to make images that reflected actual human interactions

can be seen as early as the twelfth and thirteenth centuries. Nonetheless, the Renaissance is characterized by a conceptual shift, where, following the ancient Roman architect Vitruvius, “man” became the measure of all things, although the cosmos was still given divine authorship. The painting by Masaccio (1401–c. 1427) of the *Expulsion from Paradise* for the Brancacci Chapel, Church of Santa Maria del Carmine (Florence, 1426 CE) provides a good example of this change in consciousness. Here, the first humans are shown in a state of utter desolation and abjection—Adam covers his face, Eve lets out a wail—as they are forced to walk the face of the Earth in punishment for their disobedience. During the next hundred years the tendency to create accurate and convincing images of the human body became progressively more important; by the early sixteenth century Michelangelo (1475–1564) described his process of sculpting as “liberating” the human form that was “hiding” in the stone.

Likewise, during the fifteenth century artists sought to create pictorial illusions, conceiving the picture surface as a “window,” a continuation of actual space. The ability to create illusionistic space was dependent on the mathematical discovery, by Brunelleschi (1377–1446) and Alberti (1404–1472), of single-point perspective, a method of accurately representing on a two-dimensional surface the spatial relationships of human vision, characterized by the convergence of parallel lines at a single vanishing point on the horizon. Although for many years artists had used an “empirical” perspective in which spatial relationships were approximated, mathematical single-point perspective was first employed in the early fifteenth century by artists such as Masaccio in his *Trinità* fresco (Florence, c. 1425).

Masaccio’s northern contemporaries, such as Jan van Eyck (1395–1441), were less interested in mathematical construction, but these artists excelled in using atmospheric perspective (the progressive graying and loss of detail at the horizon) to communicate the sense of deep space. By the next century both methods had become standard painting procedure. Works centered around the papal chambers in the

Vatican, such as Michelangelo’s paintings on the Sistine Chapel ceiling (1510) or Raphael’s on the walls of the Stanza della Signatura (1511), feature expansive vistas created through spatial illusionism.

The emphasis on verisimilitude that developed during the Renaissance remained a dominant artistic feature for the next four hundred years. During the Baroque period Caravaggio (1573–1610) used stark contrasts of light and dark to create intensely dramatic works, and Rembrandt (1606–1669) explored profound psychological states. Pictorial illusionism has become so normalized and naturalized that, even now, it is difficult to realize that those artistic criteria are relatively unique in human history, and that they are not the sole criteria of artistic skill and sophistication. Furthermore, a hierarchy of value developed in the post-Renaissance—Western “high art” tradition, where subjects drawn from history, myth, or the Bible were considered to be more “important” than others, such as landscapes, everyday scenes (“genre paintings”), or still life.

The Modern World

During the nineteenth century artists became interested in painting the actual without needing to imbue it with ulterior meaning. This lack of interest in ulterior meaning continued into the early twentieth century, when many artists also became interested in showing multiple perspectives, and culminated in an art that needed no external reference at all.

Nineteenth Century

Painting for its own sake was a goal of Impressionism, which began in France around 1870 and persisted for about twenty years. Like earlier nineteenth-century painters, the Impressionists were interested in depicting the specifics of the real world, but, pushing the envelope further, they attempted to make images that appeared to catch the transitory nature of perception.

The Impressionists took two basic approaches in their desire to capture the fleeting moment. The work



Mary Cassatt, *The Bath*. (1891–1892). Oil on canvas. By the 1890s Cassatt's compositions and color schemes showed a Japanese influence.

of Claude Monet (1840–1926), who was particularly interested in depicting the effects of light, exemplifies the first. In his *Impression: Sunrise* (1872), which gave its name to the movement when a journalist belittled the painting for its seeming lack of polish, or his *Sailboats at Argentueil* (1873), he used a broken brushstroke and patchily applied color to express the shimmer of light refracted in water. In the 1880s he began to paint in series, to observe the same scene at different times of day under different weather conditions, as in his many images of grain (or hay) stacks under the differing effects of sunrise, sunset, full sun, haze, rain, and snow. In the series depicting the water lilies in his garden at Giverny, on which he continued

to work until his death in 1926, the desire to capture the ephemeral nature of perceived light is carried to its extreme as all referential objects dissolve into fragments of color.

The other approach, practiced by more artists, sought to depict the vagaries of “modern life,” particularly the life of the modern city with its hustle and bustle of strangers in streets, cafés, and dance halls. Camille Pissarro (1830–1903) painted the boulevards of Paris seen from above, the traffic and people indicated by specks of paint. Edgar Degas (1834–1917) and Auguste Renoir (1841–1919) painted dancers caught in motion and people in cafés pausing in mid-drink. This way of seeing was particularly gendered, with women artists such as Mary Cassatt (1845–1926) and Berthe Morisot (1841–1895) concentrating on the interactions between women and children in their homes. The invention of photography in the first half of the nineteenth century influenced painters; Degas's image *Place de la Concorde: Vicomte Lepic* (1876), for instance, uses photographic compositional devices such as cropping. Degas and others were also aware of motion studies by photographers such as Eadweard Muybridge.

Japanese prints exerted another important influence on painters in both content and structure. With the opening up of Japan to the West in 1859, Western artists were introduced to the *ukiyo-e* (floating world) prints that presented images of ephemeral, daily human actions. Many painters sought to emulate the pictorial structure of Japanese woodcuts, which consisted of flattened planes and oblique entrances into the compositional space. Mary Cassatt was especially successful at capturing the effects of *japonisme* in her series of colored etchings achieved in the early 1890s, showing women going about their daily tasks, such as writing letters and bathing their children.

Early Twentieth Century

During the early twentieth century artists challenged the spatial system that had been devised during the Renaissance, seeking alternative approaches to representing three-dimensional space on a two-



Claude Monet, *Impression, Sunrise* (1873). Oil on canvas. The painting “gave” its name to the movement when a critic belittled Monet’s technique as lacking in polish.

dimensional surface. The interest in showing multiple perspectives can be related to scientific developments of the early twentieth century that emphasized the reality of phenomena not readily apparent to the naked eye.

Cubist artists wanted to create a picture surface that reflected the active experience of seeing, where the eye is not static but rather composes an image by integrating myriad simultaneously perceived points of view. (“Cubism” was a pejorative term given to the movement by critics who found it puzzling and disturbing.) Pablo Picasso (1881–1973), Georges Braque (1882–1963), and Juan Gris (1887–1927) were the first to develop works that used this technique; rather than paint a recognizable image of a guitar player, for instance, the artist would depict “facets”—fragments of the guitar’s strings, the player’s fingers, and smoke from his cigarette—which the viewer would need to piece together in order to read the image. The first phase, known as “analytic cubism,” is characterized by a greater use of faceting than in “synthetic” cubism, a slightly later phase,

where the multiplicity of the facets is resolved into overlapping planes, as in Picasso’s *Three Musicians* (1921).

The development of Cubism was important in that it integrated pictorial structure from non-European cultures with European modernism. In Picasso’s *Les Femmes d’Alger* (1906), for example, the face of the figure on the right looks very much like an African mask, with its abstracted features and multiple facets. By the early twentieth century, African art was being exhibited in European ethnological museums, where many artists responded to the abstract pictorial techniques of masks and other sculptures, as well as to their aura of mystery. Ironically, the structures were appropriated without a full understanding of the cultures from which they derived, and without consideration of the works’ meanings within those cultures.

The way of seeing that developed in Cubism was influential in numerous other twentieth-century artistic movements. Artists in both Italy and Russia used related techniques to communicate the



experience of physical motion. Umberto Boccioni (1882–1916) and the Futurists sought to communicate the experience of speed. Natalia Goncharova's (1881–1962) depiction of a bicyclist uses faceting to show the motion of the bicycle wheels and also the experience of the bicyclist as he sees the visual data of the world go by. Later, Goncharova and others attempted to depict moving rays of light, and other artists, such as Sonia Delaunay (1885–1979) and Robert Delaunay (1885–1941), also used faceting to communicate the simultaneity of vision, and to analyze light and its motion as well as the motion of the human eye. These latter artists began to make art that seemed increasingly more abstract, dependent less on perceived reality than on pictorial reality. Based on “pure plastic form” (the tensions that exist between colors and shapes and their placement on a pictorial surface), the work of art was conceived as sufficient to itself, needing no external reference, an extreme effect of the nineteenth-century turn away from content.

An interesting, and seemingly contradictory, extension of the development of artistic abstraction was the renewed desire to blur the boundaries between art and life. Many artists whose work was based on purely formal tensions sought to apply the same principles to the design of everyday objects. In Russia around the time of the Revolution (1917) artists such as Liubov Popova (1889–1924) wanted to make a “new art for a new age,” an art that was based on principles of abstraction but that had application in design—fabrics, dishes, book covers, and stage sets. Sonia Delaunay designed stage sets, fabrics, and even the furnishing of automobiles, commenting, “One day I make a painting, the next I make a dress—there's no difference.” An entire school dedicated to the universal application of design principles, the Bauhaus, was founded in Germany during the 1920s. Many artists associated with this project—its two founders Walter Gropius and Mies van der Rohe, as well as other members of the avant-garde such as Piet Mondrian—emigrated to the United States during the rise of Nazi Germany, effectively transplanting the International Style and European modernism to the United States.

Later Twentieth-Century Developments

Surrealism, which developed from Dada, was the major European art movement during the interwar years. Born in the cafés across Europe in the later years of World War I, especially the Café Voltaire in Zurich, Dada was a response to the perceived absurdity and destructiveness of the modern world, which its adherents believed called for a similarly irrational approach to art (both visual and literary). The name of the movement itself is ambiguous, possibly deriving from both the Russian word for “rocking horse” and the babbling sounds made by a baby learning to talk. Because it espoused “anti-art” Dada was not a movement per se, nonetheless works from such adherents as Marcel Duchamp became very influential in art of the later twentieth century. Duchamp was especially known for his “readymades,” in which he would take a “found object,” embellish it slightly or not, and then exhibit it as a work of art. Two such examples, both “made” in 1919, are *Fountain* (a urinal) and the cheap postcard-sized reproduction of Leonardo's iconic portrait of (Mona) Lisa Gherardini del Giocondo, on which he drew a moustache, a goatee, and the hand-printed title, “L.H.O.O.Q.” (The letters, if read quickly in French, phonetically approximate the phrase, *elle a chaud au cul*, which Duchamp translated colloquially to infer that Mona Lisa's smile was a reflection of her considerable sexual desire.)

The Surrealists sought to build upon the irrational as the source of artistic imagery and activity, to break from the restrictions of humdrum everyday reality, and to free the mind from convention and logic. André Breton, who wrote two Surrealist “manifestos” (in 1924 and 1927) developed the technique of “automatic writing” as a means of creating a direct line to the unconscious. Breton also wrote *Surrealism and Painting*, a tract that identified artists whose art was consistent with the two primary goals of the movement: either those like Joan Miró, whose work was mostly abstract and who attempted to find a visual equivalent of automatic writing, and those like Salvador Dalí, who tapped into dream imagery but depicted it realistically so that the unexpected became

palpable. Surrealists valued eroticism as a way of accessing the unconscious, and they valorized the “femme-enfant,” the child-woman, who could serve as a muse to the male artist. Several such “muses”—Leonora Carrington, Lee Miller, Dorothea Tanning, and Meret Oppenheim, whose fur-lined tea-cup (*Breakfast in Fur*, 1936) became the iconic surrealist object—were artists in their own rights, who helped to keep the movement alive for decades after its first appearance. When a number of Surrealist artists fled the Nazi persecution, like Max Ernst (who had been involved with Leonora Carrington while in France but who married Peggy Guggenheim and later Dorothea Tanning), they established residency in New York, and with other émigrés contributed to the transplantation of European modernism to the New World.

Europe in New York

During the 1940s and 1950s New York City, despite its location across the Atlantic, assumed the role that had previously been identified with Paris and became the art capitol of the European art tradition. Abstract Expressionism, the most significant movement of the mid-twentieth century, grew from the Surrealist impulse to exteriorize internal states. Jackson Pollock’s drip technique, in which the control of the artist’s hand was subverted as he danced around a canvas placed on the floor, splattering paint, could be considered a form of automatic writing. During the fifties and sixties in Europe *art brut* (“raw art”) and *arte povera* (“poor art”) were prominent, both movements influenced by the anti-art aspects of Dada.

In the latter part of the century it seemed as if the debate accelerated to the point where the purpose of art was being continually redefined every few years, in such movements as Pop Art and its use of everyday imagery, or Minimalism and its total eschewal of representation. The German sculptor and performance artists Joseph Beuys (and other conceptual artists in particular) referred back to Dada, using the stuff of everyday life in their work. Furthermore, art became increasingly more self-referential and began to challenge the hegemony of Western culture and its master



Marcel Duchamp, *Fountain* (1917). Duchamp often took a “found object,” such as this urinal, and, after embellishing it or not, exhibited it as a work of art. Photograph by Alfred Stieglitz.

narratives through irony, parody, and the blurring of lines between the high and the low, in an attempt to destabilize and decentralize the artistic tradition. These traits became associated with the stance of Postmodernism, a philosophical movement expressed also through architecture and literary criticism.

At the same time, feminists began to retrieve the works of many “lost” women artists, individuals who might have had an impact in their times but who were obscured by the historical narrative. The art historian Linda Nochlin found that many of the women who were able to have artistic careers prior to the nineteenth century—such as, famously, Artemisia Gentileschi (1593–1656)—did so because their fathers were artists, which gave them access to the requisite education. This historical recovery work was very significant to women artists during the 1970s and subsequent years, and they began to engage through their art with the historical exclusion of women. Hundreds of volunteers from 1974 to 1979 worked with Judy Chicago on her installation *The Dinner Party*, to which Chicago “invited” thirty-nine significant female figures



(including Hatshepsut, Hildegard von Bingen, and Sacajawea). Three 48-foot banquet tables, configured in a triangle and covered in embroidered textiles and table runners, held individually themed place settings, including custom-designed dinnerware painted with motifs evoking female genitalia and other symbols significant to each guest.

In *The French Collection* (1991–1997), a series of painted “story quilts,” the Bronx-born painter and writer Faith Ringgold drew on iconic works and figures from European art and culture to present a narrative of “art in the making” in which “history” is either altered by (or infused with) the presence of a fictional African American female artist as a central character. Works such as *The Picnic at Giverny*, which juxtaposes full-bodied allusions to the paintings of Manet (*Dejeuner sur l’herbe*) and Monet, function as both playful and serious social commentaries.

In many world cultures art is an intrinsic form of lived experiences whereas in the European art tradition, high art and the daily environment became bifurcated. Unfortunately, despite the aforementioned attempts, during the remainder of the twentieth century, they only became more separated, and in the twenty-first century there seems to be an increasingly unbridgeable gap between artists and their audience.

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See also Europe; Europe, Eastern; Eurasia, Inner; Renaissance; Western Civilization

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Art—Japan

Japanese art has alternated between a native style and others inspired by Chinese, Korean, and, later, Western influence. Neolithic Jōmon pottery was the earliest art; metalwork, calligraphy, and painting appeared in succeeding periods. Buddhist art and architecture dominated from 600 to 1600 CE. Japanese culture flourished after 1600 with economic prosperity, and Western contact after the mid-1800s brought new styles and international exposure.

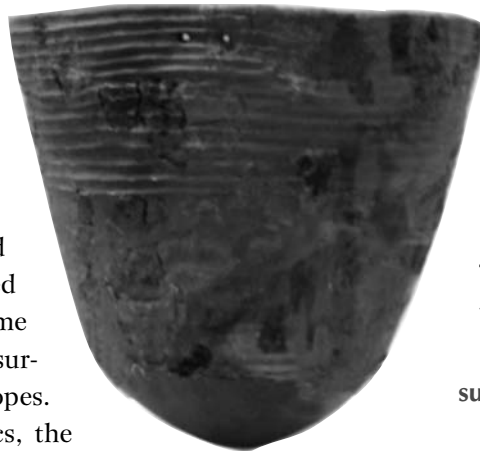
The art of Japan demonstrates the sensitive character of the inhabitants of that East Asian archipelago over a period of more than eighteen thousand years. Among the more consistent qualities revealed through Japanese art are a love of nature, attention to detail, playfulness, a preference for natural materials, and the ability to succinctly capture the innate qualities of a subject. Japanese history is divided into periods that are named for the location of the national seat of political power.

Jōmon Culture

The oldest human artifacts of unglazed earthenware appear to date from Japan's Jōmon period (c. 10,000–300 BCE). These ceramics, mostly vessels, are typically decorated with overall patterns of incised or impressed decoration, some of them made by rolling the surface with braided cords or ropes. For this reason, the ceramics, the

people, and the long Neolithic period to which they belong were given the name “Jōmon” (cord-marked). The Jōmon people, unlike most ceramics-producing cultures, were primarily hunter-gatherers. Scholars since the mid-twentieth century have debated the date for the beginning of the period, as early as 16,500 BCE by some estimates—not only about when the transition from Paleolithic to Neolithic technology took place (the dates continue to recede with new discoveries), but whether Jōmon earthenware is indeed the world's oldest ceramic type.

The stylistic characteristics of Jōmon pottery vary geographically and according to the phase from which they date. In Middle Jōmon, earthenware vessels often featured spectacularly extruded mouths, referred to as “flame-style” (*kaenshiki*) rims by Japanese archaeologists. In Final Jōmon, clay figures called *dogu* were created to be broken during rituals that may have been intended to improve fertility or to combat illness. The predominantly abstract decoration on Jōmon wares may be of religious or ritual significance.



Yayoi Culture

The beginning of the Yayoi period (300 BCE–300 CE) marks an influx into Japan of immigrants from continental Asia who brought

Jōmon (cord-marked) pottery (10,000–8,000 BCE) is decorated with incised or impressed patterns made by rolling the surface over braided cord or rope. Tokyo National Museum, Japan.

systematized wet rice agriculture, hierarchical societal organization, and technology for manufacturing bronze. Tools, weapons, and mirrors of bronze began to be made within a century or two after similar items arrived from China and Korea. One of the more idiosyncratic Yayoi bronze objects is a type of bell known as the *dōtaku*. These bells appear to derive from bronze bells of the Chinese Han dynasty (206 BCE–220 CE) and, made during the second half of the Yayoi period, were probably intended for ritual use. One example bears cast designs, including a representation of a grain storehouse on stilts. The similarity of this storehouse to existing Shinto shrine buildings, such as the principal halls in the shrine complexes of Ise and Izumo, may indicate that at least some aspects of the Shinto religion originated during Yayoi period. Yayoi period earthenware, simpler in form than that of the Jōmon, comprised vessels for ritual and household use. Like Jōmon ware, it was made from coils of clay, but was smoothly finished by the use of a small handwheel.

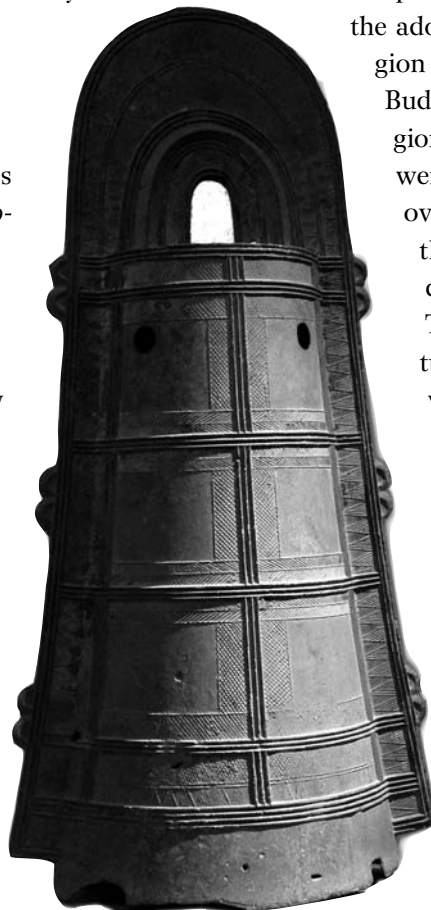
Kofun Period

The Kofun period (300–710 CE) is named for the numerous tumuli (*kofun*) constructed from around the mid-third century until after the introduction of Buddhism in Japan, around 550 CE. Buried within these tomb mounds were a variety of items that reveal close connections between Japan's aristocracy and inhabitants of the Korean Peninsula. Some items, such as gray earthenware funerary vessels, beads, and certain items of metalwork from fifth- and sixth-century Japanese and Korean tombs, can be distinguished only by specialists. Tumuli were mostly small, especially at the beginning of the period, but those built for emperors such

as Nintoku (reigned 313–399) were huge, keyhole-shaped constructions surrounded by moats. Some tumuli had burial chambers lined with stone that were decorated with wall paintings. Earthenware cylinders known as *haniwa*, arranged atop and around the perimeter of some tomb mounds, were commonly surmounted with clay figures in the form of humans, animals, or even inanimate objects such as shields or buildings. The exact purpose or function of these earthenware sculptures is uncertain, but it seems likely that they were intended to support the deceased in the afterlife.

Asuka Period

The Asuka period (552–645 CE) overlaps the preceding Kofun period and marks the introduction of both Buddhism and writing from continental Asia. Because of those features, it is Japan's first fully historical period. Within three decades following the adoption of Buddhism as the state religion under the Soga clan in 587 CE, three Buddhist temples in the Nara-Osaka region were established. Although all three were completely or mostly destroyed over the centuries, works of art from them survive, mainly in the temple called Hōryū-ji (in Nara Prefecture). The most significant Buddhist sculpture of the period comprises several works by Tori Busshi (active late sixth–early seventh centuries). Tori's masterpiece is the gilt bronze *Shaka Triad* of 623, now located in the Golden Hall (Kondō) of Hōryū-ji. The three figures resemble Chinese



Dōtaku Bronze Bell. Late Yayoi period, third century CE. These bells, intended for ritual use, apparently derive from Han-dynasty (206 BCE–220 CE) China bronze bells. Musée Guimet, Paris.



Tori Busshi, *Shaka Triad of 623*. From *Selected Relics of Japanese Art, 20 Volume Set*. Photographs and Collotypes by K. Ogawa. (1899–1908). Nippon Shimbi Kyokwai: Shimbi Shoin.

Buddhist sculptures from the Northern Wei kingdom (part of China's Southern and Northern Dynasties, 220–589 CE). A bodhisattva (enlightened deity) figure in Hōryū-ji is known as the *Kudara Kannon*, which tradition says was brought to Japan from Korea's Paekche (Kudara) kingdom (18 BCE–663 CE). These sculptures, as well as the layout and architecture of buildings such as Hōryū-ji's Golden Hall and pagoda (late seventh century), reflect the strong influence of continental Buddhist models.

Nara Period

Continental models were even more influential during the Nara period (710–794 CE). Throughout the eighth century CE, the influence of Tang dynasty China (618–907 CE) was dominant in works made for the Buddhist establishment and the aristocracy. Heijō-kyō, the capital (modern Nara City), was laid out in the manner of Chang'an (modern Xi'an), the capital of the China's Tang dynasty. During the rule of Japanese emperor Shōmu (reigned 715–749 CE), a huge temple,

called Tōdai-ji, was built in Nara to house a massive bronze image of the Dainichi Buddha (called Vairocana in Sanskrit). The current hall, an eighteenth-century replacement only two-thirds the size of the original, remains the largest wooden building in the world. Emperor Shōmu also ordered the establishment of regional Buddhist temples throughout Japan under the *kokubunji* system, which necessitated the production of large numbers of Buddhist statues and implements in Tang dynasty style. In contrast with Asuka period Buddhist images, Nara period sculpture featured rounder, fleshier figures imbued with a sense of elegance and movement.

As rulers of the easternmost point of the Silk Roads, eighth-century Japanese emperors had access to luxury goods from as far away as Persia. The active trade that took place is reflected in the high-quality artworks preserved in the Shōsō-in repository, established in 756 to house the possessions of Emperor Shōmu. Among the items kept there are mirrors, textiles, ceramics, lacquerware, furniture, musical instruments, glass objects, and paintings. Some of

the works are of continental manufacture, while others are domestic products that show the impact of imported forms, materials, and techniques.

Heian Period

In 794 CE, Emperor Kanmu (737–806 CE) moved the capital to a new site, Heian-kyō (modern Kyoto), initiating the Heian period (794–1185). Contact with China declined after 894, when the Japanese court ceased to send embassies to the continent. In response, native art and architecture began to develop along independent lines. The buildings of the imperial palace were constructed in a hybrid Sino-Japanese form, with gardens and furnishings of native taste, while retaining certain Chinese elements to communicate weight and authority. A distinctly Japanese court culture grew up, described in great detail in Lady Murasaki Shikibu's tenth-century novel *The Tale of Genji*, and illustrated in a superb set of twelfth-century narrative hand scrolls, the *Genji monogatari emaki*. The scrolls, only a few of which survive, feature not only compelling paintings of scenes found in the novel, but outstanding calligraphy, another hallmark of visual culture of the Heian court. The illustrations, which use a complex system of perspective, placement, and color but depict human faces in a quite generalized manner, represent the beginnings of a native form of painting known as Yamato-e.

In the early part of the period, the two Esoteric Buddhist sects of Tendai (Tiantai in Chinese) and Shingon (Zhenyan in Chinese) were introduced from China. These sects emphasized secret knowledge and complex rituals, often using cosmic diagrams known as mandalas. Numerous colorful and minutely detailed mandala paintings were made during the Heian period. In the middle and latter parts of the period, the populist Pure Land (Jōdo) sect grew, and many sculptures of the Amida Buddha (Amitabha in Sanskrit) were constructed. Most notable is the sublime Amida figure by Jōchō (d. 1057) made for the Phoenix Hall (Hōōdō) at the temple called Byōdō-in. The temple was built as a personal shrine for the



Mandala of the Single-Syllable Golden Wheel. (Heian period, twelfth century.) Minutely detailed cosmic diagrams (mandalas) became popular as the Pure Land sect of Buddhism grew. Nara National Museum.

government official Fujiwara Yorimichi (990–1074) in 1052.

Kamakura Period

In 1185 CE, the Minamoto warrior clan defeated its rival, the Taira clan, and established a military government that ruled in the emperor's stead. Seeking refuge from court influence, the first shogun moved his seat of power to Kamakura, far from earlier capitals. In contrast to the refined and elegant Heian art, Kamakura period (1185–1333) works are characterized by

stronger, more straightforward approaches. In Buddhist sculpture, works by Unkei (1148?–1223) and others of the Kei school of sculptors display a powerful naturalism that reflects the rise of military culture. The Jōdo monks Hōnen (1133–1212) and Shinran (1173–1263) exploited unease about the changes in society, inspiring greater numbers to place faith in the Amida Buddha. As a result, paintings of Amida descending to greet the soul of a dying believer (*raigō* paintings) and depictions of Amida's Western Paradise (Saihō Gokuraku) came to be made in large numbers using valuable materials such as silk and gold leaf. Portraiture grew in popularity, especially among the military elites and Buddhist clergy, following the same trend toward naturalism as sculpture.

Muromachi Period

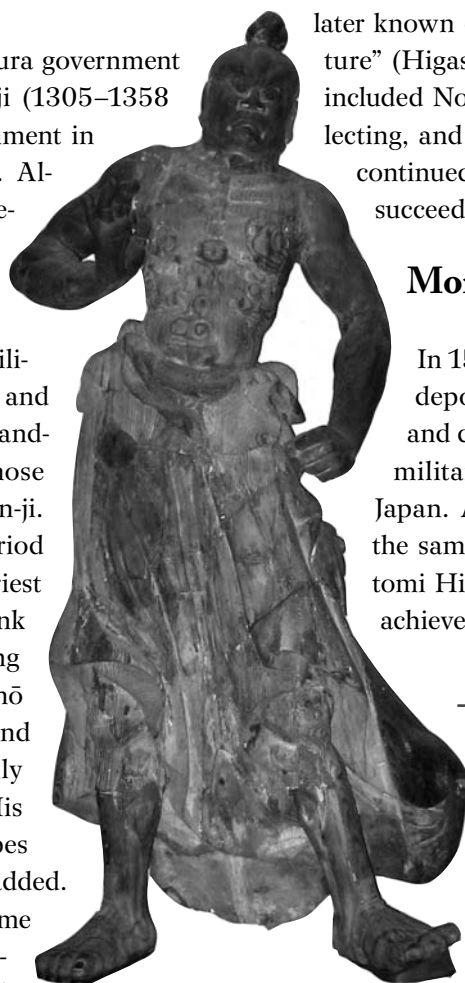
Following his defeat of the Kamakura government regents in 1333, Ashikaga Takauji (1305–1358 CE) set up his own military government in the Muromachi district of Kyoto. Although much of the Muromachi period (1333–1573) was tumultuous, certain art forms did flourish. Zen temples grew in number and influence because of the support of the military class. Zen-inspired calligraphy and ink painting prospered, as did rock-and-gravel gardens (*sekitei*) such as those at the Kyoto temple named Ryōan-ji. The most famous painter of the period was Sesshō Tōyō (1420–1506), a priest whose work built upon styles of ink painting developed in China during the Song dynasty (960–1279). Sesshō traveled to China in 1469–1470, and his painting reportedly was highly admired by Chinese at the time. His most celebrated works are landscapes in ink, sometimes with light color added.

The cultural apex of the period came under the rule of Ashikaga Yoshimitsu (1358–1408), who subdued

warring factions, reopened official contacts with China, and encouraged the arts. Under his patronage, the Noh drama developed, and outstanding masks and robes for the theater were created. Yoshimitsu built a personal retreat at Kitayama, which included a building called the Golden Pavilion (Kinkaku). The three-story building, famous for the gold leaf on its exterior, is an innovative combination of three architectural styles: Zen temple, warrior dwelling, and court residence. Sited in a beautiful strolling garden with a lake, the current building is a close replica of the original, which burned in 1950. Yoshimitsu's grandson, Ashikaga Yoshimasa (1435–1490), built his own retreat at Higashiyama, with its own unique building, the Silver Pavillion (Ginkaku). The two-story building, never covered in silver, was the centerpiece for Yoshimasa's aesthetic diversions, later known collectively as “Higashiyama culture” (Higashiyama *bunka*). These pastimes included Noh drama, garden design, art collecting, and tea ritual. Yoshimasa's influence continued to be felt in these areas over the succeeding centuries.

Momoyama Period

In 1573, Oda Nobunaga (1534–1582) deposed the final Ashikaga shogun and continued his quest to consolidate military and political power over all Japan. After his assassination in 1582, the same pursuit was taken up by Toyotomi Hideyoshi (1537–1598) and largely achieved; yet it was not until Tokugawa



Kongorikishi statue. (Kamakura period, fourteenth century.) This flamboyantly realistic wood statue, typical of the period, originally stood guard at the gate to Ebaradera, a temple in Sakai, near Osaka. Sackler Gallery at the Smithsonian Institution.

*Thank God for tea! What would the world do without tea? How did it exist?
I am glad I was not born before tea.* • **Sydney Smith (1771–1845)**

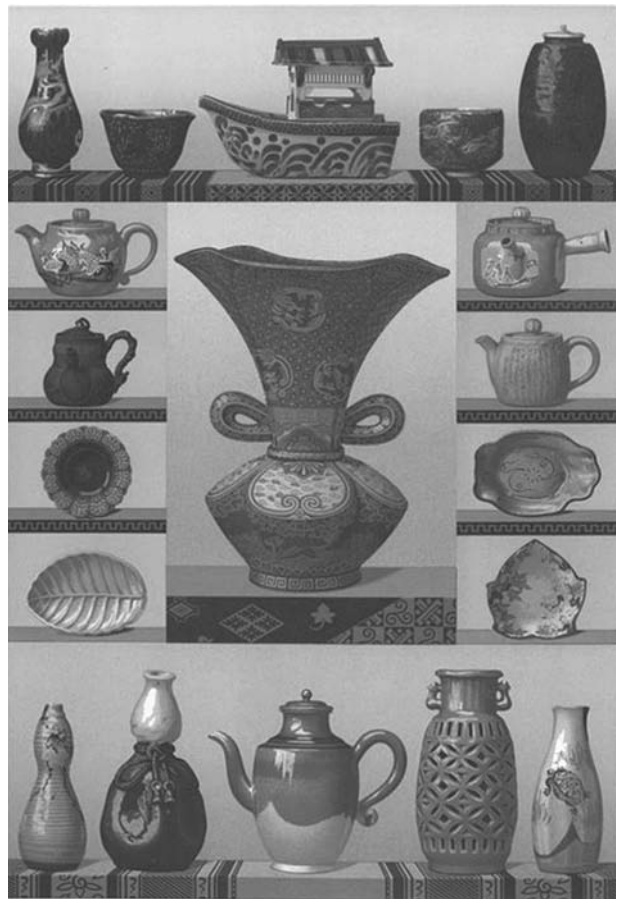


Sesshū Tōyō, landscape (1495). Hanging scroll, ink on paper. The artist originated the *hatsuboku* (splashed ink) technique of this painting.

Ieyasu (1543–1616) that an enduring dynasty could be established and internecine warfare eliminated. Despite intermittent warfare, the Momoyama period (1573–1600) marked one of the most creative eras in the history of Japan. Active trade provided cultural stimulation, as Japanese ships sailed throughout East and Southeast Asia. European merchants and missionaries were welcomed, and many of the items they brought were incorporated into Japanese visual and material culture. Decorative motifs in applied arts such as lacquerware and textiles were particularly influenced by foreign designs. Painting

was characterized by the growth of several existing schools and the establishment of others, spurred by the demand for artistically embellished sliding doors and folding screens for the interiors of elite residences and castles. Many of these works featured backgrounds of gold-leafed paper that helped reflect light in the dark interiors of large buildings. Among the most prominent painters were Hasegawa Tōhaku (1539–1610), Kaihō Yōshō (1533–1615), and Kano Eitoku (1543–1590), whose bold and striking works came to characterize the vibrant ambiance of the Momoyama period.

Under the influence of codified tea drinking, sometimes known as the tea ceremony, notable



Perfume burner modeled in the form of boat (top center), with teapots, vases, tea bowls, and saké bottles once in the possession of James L. Bowes, Esq. From *Keramic [sic] art of Japan* (1875).



Ogata Korin, *White Plum Blossoms* (Edo period). Ink, color, and gold and silver leaf on paper. One of a pair of two-fold screens. Museum of Art, Atami.

advancements were made in ceramics. In the 1570s, the low-fired, glazed ceramic later to be called Raku ware was devised, and Raku tea bowls soon achieved popularity among tea connoisseurs. The capture and inducement of continental potters to Japan during the 1592–1598 invasions of Korea resulted in the rapid advance of ceramics technology and the concurrent expansion of production throughout the country. Tea masters like Sen Rikyō (1522–1591) encouraged the creation of original and idiosyncratic wares that reflected the somber and restrained aesthetic known as *wabi* (rustic simplicity).

Edo Period

In 1603, Tokugawa Ieyasu became shogun, establishing in the city of Edo a line of hereditary military rulers who would control Japan for over 250 years

(known as the Edo period, 1600/1603–1868). The beginning of Tokugawa rule overlaps with the latter Momoyama period, since Ieyasu did not completely vanquish his Toyotomi rivals until 1615. Once in control, the Tokugawa shogunate instituted a policy of national isolation and a rigid Neo-Confucian class system. Such measures curtailed individual freedoms, but also contributed to general economic prosperity and social stability. These in turn stimulated unprecedented growth in the arts, especially among the common people.

During the seventeenth century, Kyoto remained the capital of arts and culture, experiencing a renaissance of culture reminiscent of that of the Heian period. Emblematic of this renaissance was Hon'ami Kōetsu (1558–1637), a Kyoto artist who excelled in calligraphy, lacquerware, and raku tea bowls. Collaborating with the painter Tawaraya Sōtatsu (flourished early seventeenth century), founder of

Rinpa-style painting, Hon'ami created scrolls featuring classical poems inscribed against a backdrop of evocative natural designs by Tawaraya in gold and silver pigments. Toward the end of the century, Ogata Kōrin (1658–1716) brought Rinpa style to full flower in his striking compositions created by abbreviating and carefully arranging pictorial elements. Kōrin's brother, Ogata Kenzan (1663–1743), translated Rinpa into the ceramic format, devising innovative implements for use in the practice of tea.

Among warrior-class elites, the two most influential painting schools were the Kano school, based upon Chinese art traditions, and the Tosa school, descended from Heian period Yamato-e. In the eighteenth century, however, new styles of painting developed. Notable among them were the literati (Bunjinga) style, an outgrowth of Chinese scholar painting of the Ming (1368–1644) and Qing (1644–1912) dynasties, and the Maruyama-Shijō school, which incorporated elements of European naturalism into native modes of depiction. Within the merchant class, genre painting gave way to paintings and woodblock prints featuring beautiful women, actors,

and travel landscapes. This style, known as *ukiyo-e* (floating world pictures), eventually became Japan's most widely known artistic style.

Modern Period

In 1854, the re-establishment of international contact began with the opening of ports that had been closed to foreign commerce for more than two centuries. European artistic ideas flowed freely into the country, and soon "painting in the Western manner" (Yōga) was firmly established. In the 1880s, with the encouragement of the American scholar Ernest Fenollosa (1853–1908), native painting practices reasserted themselves, combining into a new tradition called Nihonga (Japanese painting). Nihonga used native materials and formats, such as painting with ink and mineral pigments on paper or silk, but also incorporated certain aspects of Western traditions such as shading and perspective. During the twentieth century, distinctions between the two modes became increasingly blurred, but the separation continued to be recognized in official art circles, especially the annual national art exhibitions first held in



"Entrance to the Kasuga Shrine at Nara and Group of Consecrated Maidens," circa 1910. This shrine of the Fujiwara family was rebuilt through the centuries after its initial construction in 768 CE. New York Public Library.



Kitagawa Utamaro (c. 1753–1806), *Uzuki no hototogisu*. Utamaro was renowned for prints of beautiful women and Kabuki actors. Here, a cuckoo hovers over the women's heads.



Andō Hiroshige (1797–1858), *Meguro taikobashi yūhinooka* (Meguro drum bridge and sunset hill). Printed by Oban Nishiki-e.

1907 and later known as Nitten (Japan Exhibition). In the 1950s, artists like Yoshihara Jirō (1905–1972) began to explore concepts such as abstraction and performance art, becoming the first in Asia to present a credible challenge to the West from an equal artistic footing.

In the twenty-first century, art in Japan is as diverse as in any country in the world. A large number of Japanese artists are recognized internationally, especially in nontraditional genres such as installation art and video. In addition, the comic book / cartoon art genres of Manga and Anime have had tremendous

impact on artists worldwide, especially those born after 1980.

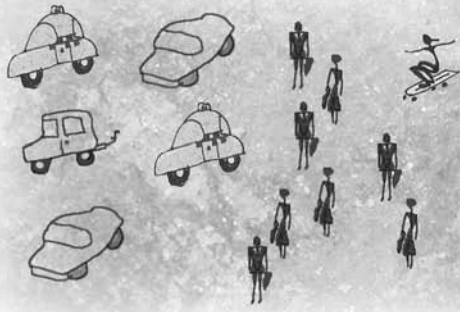
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Art—Native North America

More than five hundred cultural groups, and many more prior to Spanish colonization in the early sixteenth century, have created the body of art attributed to Native North Americans. The category is thus not cohesive, ranging from ancient petroglyphs to contemporary photographs, and from horse-effigy dance sticks to installation and performance art. In its great diversity, however, it typically incorporates and conveys a relationship to place and community.

In the twenty-first century many art historians, as well as scholars in related and interdisciplinary fields, have begun to refer to art produced by the indigenous populations of North America—from the Rio Grande to the Arctic Circle and from the Atlantic to the Pacific coasts—as “First American art.” The term establishes the corpus of diverse material artifacts made by original and descendant inhabitants of these lands—and not by occupants who arrived through waves of colonial encounters beginning in the sixteenth century—as primary among the arts of the United States and Canada (where it is called “First Nations art”). Even in its great diversity, this art typically incorporates and conveys a relationship to place and community. Often a deliberate reference to identity (or intimacy with the culture) is central to its expressive intent. The wide span of this art created over space, time, and cultures attests to its vitality and conceptual continuity, from 4500 BCE Lower Mississippi Valley mound architecture to the recently opened National Museum of the American Indian, a native-designed structure housing the world’s largest collection of First American art.

Ancient architectural ruins in the Southwest, sites that have now been differentiated as pre-European contact, include cultures of the Anasazi (700–1400 CE), Hohokam (550–1400 CE), and Mogollon (200–1150 CE). All these cultures created painted murals, decoratively elaborated pottery, worked shell and stone, and early textiles that tangibly evinced a technologically advanced “primitive” society perceived as a nascent civilization. The material remains of other ancient peoples, including the Adena (1100 BCE–200 CE), Hopewell (100 BCE–500 CE), and Mississippian cultures (still noted for extensive mound construction in 1000 CE) in the east and central United States, together with Norton Tradition, Old Bering Sea, Dorset, and Thule cultures in the Canadian Arctic (spanning the period 500 BCE–1000 CE), provide evidence of America’s antiquity, and are today also appreciated for their aesthetic legacy.

But with contributions from more than five hundred cultural groups and many more prior to Spanish colonization, the category is by no means cohesive. First American art spans an array of media, from petroglyphs to contemporary photographs, for instance, and from horse-effigy dance sticks to installation and performance art. Critical reception to indigenous art is divided and often depends on whether the works were wrought in traditional (that is, historic and pre-contact) materials or created in modern times in contemporary modes.

First American Art: From “Curiosity” to Aesthetic

The need to designate “First American art” evolves from a long-standing debate about whether or not



Tsimshian head-on mask. (1800s.) This painted wood mask, used during the initiation rituals of the great winter ceremonies (*halait*), was collected at the mouth of the Nass River, British Columbia (Canada).

art work created by the indigenous peoples of North America can be called “art.” Europeans (especially the Spanish, English, Dutch, French, and Russians) began acquiring “curiosities” made by the native inhabitants of the “New World” when they arrived on its foreign soil, and many of these objects still exist in European museums in cities such as Berlin, Helsinki, Leningrad, London, and Paris. In the nineteenth century objects made by American Indians became the focus of systematic U.S. collecting and formed the core of most urban museum collections: Indian imagery provided a potent focus of the young nation-state until France’s 1883 gift of the Statue of Liberty.

Indigenous peoples often exchanged valued objects with Europeans, symbolically solidifying international relations and sometimes representing them. For instance, the first treaty between the Haudenosaunee peoples and the Dutch settlers in their region was recorded in the Two-Row Wampum Belt in 1613. The pattern of purple wampum beads sewn in two strips against a background of white beads signifies the path of two vessels, an indigenous canoe and

a European ship, as they travel the river of life together, parallel but never touching. The three underlying white stripes symbolize peace, friendship, and respect. Another iconic example in Native American art history is the late eighteenth-century Mandan or Lakota pictographic bison robe attributed to the collection acquired by the Lewis and Clark Expedition (1804–1806). On battle robes such as this one, made from tanned buffalo hide decorated with deerskin fringe, bird and porcupine quills, and native plant materials, indigenous artists used brown, orange, and green pigments to paint scenes using a complex iconography that detailed their exploits in war. The Lewis and Clark robe, now at the Peabody Museum of Archaeology and Ethnology at Harvard, provides an early example of Plains biographical art and serves as a symbol of the diplomacy and political relations that helped form the United States.

The observations that the German artist Albrecht Dürer recorded in his 1520 travel journal about an exhibit in Brussels of Aztec jewelry, clothing, weaponry, and armor—“nothing . . . rejoiced my heart so much

as these things, for I saw amongst them wonderful works of art”—marks a historic moment in the European appreciation of the potential value of objects from the Americas (Dürer 1520). (Hernan Cortés had sent the Aztec treasures as tribute to Charles V, Spanish king and Holy Roman Emperor, who put them on display throughout Europe.) Such exposure increased as these objects were housed in national museums beginning in the eighteenth century. Representation of Native Americans began to pervade the wider visual media beginning in the sixteenth century, sometimes as illustrative material accompanying traveling exhibitions about indigenous peoples, but by the nineteenth century Indians became pictorial subjects in their own right (in the paintings of George Catlin, for example) or were portrayed as “natural” elements within other genres like landscape painting (in the work of Albert Bierstadt and George Caleb Bingham).

The cultural evolutionism of nineteenth-century theorists such as Lewis Henry Morgan provided the stimulus for large-scale collecting in America. Patterned after their natural history counterparts, exhibitions resulting from nineteenth-century archaeological and ethnological exploration were displayed in museums as “remnants of a waning race” organized by the culture–area approach, a classification of peoples by geographic and environmental criteria that often still informs even art museum exhibitions. In those displays and the curatorial descriptions that accompanied them, Pueblo ruins were likened to European prototypes as an “ancient Pompeii,” “Greek theatre,” or “Roman forum” (as, for example, in William H. Jackson’s *Reconstruction of Pueblo Bonito, Chaco Canyon*). By the twentieth century Pueblo architecture and other native influences inspired diverse architects to develop specifically American forms. Mary Colter used Hopi, Zuni, and Navajo elements in the tourist-oriented buildings she designed to rim the Grand Canyon; Vincent Scully, the renowned art historian, wrote (and taught) extensively about native influences in American architecture; and Frank Lloyd Wright incorporated native influences in form as well as in decorative elements that he himself designed, such as

the friezes of Native American chieftains found on a the lintels of a house in Milwaukee.

World fairs and industrial expositions, notably the U.S. Centennial Exhibition (Philadelphia, 1876) and the World’s Pre-Columbian Exhibition (Chicago, 1893), were important venues for the representation of America’s native peoples and their arts (although both were pictured as technological inferiors). Euro-American intellectuals gained access to native peoples not only through visual and textual representations, but also through intimate association with them. Aby Warburg, a central figure in modern art history specializing in the Italian Renaissance, was impressed by the religious practices of the Hopi Indians he visited and photographed. Warburg, who considered his encounter with the Hopi as a journey to the origins of human imagery, collected a number of carved and painted wooden katchinas and dance wands in the 1890s. For other Euro-American collectors, too, ritual objects have been particularly desirable (despite the consternation of the natives to whom such objects remain living beings). Western European fine artists have continued to use non-Western images and objects to explore philosophical ideas and to challenge and subvert their own cultural conventions.

The aesthetic concern with Primitivism, a handmaiden of Modernism in which Native American art figured importantly, was prominent from the 1890s through World War II; its influence is still felt in current non-native representations of Native American art. The Aesthetic and Arts and Crafts movements also stimulated a wider interest in—and the collection of—Native American objects in the late nineteenth and early twentieth centuries.

Beginning in the twentieth century, studies of Native American art (notably the elaborate carvings and richly costumed performances of the Northwest Coast’s stratified societies, many of which were explored in the seminal work of anthropologist Franz Boas and his students) helped to turn academic attention away from evolutionary concerns to the formal properties of objects and their cultural contexts. In fashioning a particularly American fine-art tradition,

namely Abstract Expressionism, New York avant-garde artists, chief among them Jackson Pollack and Barnett Newman, drew on Native American art between the two world wars and rejected European academic traditions. By espousing a universal concept of art in which visual qualities were valued independent of historical and cultural specificity, these artists (and critics such as Clement Greenberg) demonstrated the value of native cultures to a modern American heritage on the eve of global conflict at mid-century. Canada and Australia, sister postcolonial nation-states, have also utilized the aesthetic value of indigenous productions in their national identities.

The Museum of Modern Art's 1941 exhibit "Indian Art of the United States" and especially the later "Primitivism' in Twentieth Century Art: Affinity of the Tribal and the Modern" (1984) were watershed events in the representation and classification of Native American objects, provoking academic debate that has lasted into the twenty-first century. In the twentieth century, American museums were distinguished from their European counterparts by their emphasis on modern or contemporary and primitive art over classical forms, with Native American art figuring prominently in several national and international traveling exhibitions (especially the one that commemorated the U.S. Bicentennial). In Europe prior to World War II, the surrealists favored Native American art as a way of subverting established canons and establishing new syntheses of perception and representation in opposition to modernist trends.

Thus by the mid-twentieth century a concentrated articulation of aesthetic value for these objects emerged in concert with an increasing number of named artists and private collectors; an expansive market, wide museum exhibition, and art historical surveys characterized the last quarter of that century. In the Western art tradition work must be inscribed into a canon that assesses its quality and defines its criteria, and Native American work was just beginning to be "written" as a tradition. By the late twentieth century Native American art became a recognized field with the full complement of institutional networks, including

academic specialization. Controversy over classification still centered on how to appreciate "traditional" work that seemed to morph out of an altered social landscape by incorporating European materials and designs (such as the flourishing "souvenirs" of Native American art from the Northeast in the eighteenth and nineteenth centuries, or post-reservation Plains beadwork). Debates arose over how to distinguish between an ethnological artifact and an aesthetic object—natural history and art history paradigms, respectively.

In 2003 the Smithsonian's National Museum of the American Indian opened a three-year-long exhibition culled from the Charles and Valerie Diker collection and called "First American Art." The exhibit departed from the traditional, historically influenced approach of displaying and analyzing native works according to tribe or region; instead it attempted to define a First American art paradigm. Because the Dikers were drawn to the work they collected by its beauty rather than by an interest in a specific "category" of work, the native and non-native artists, curators, and anthropologists involved in the planning the exhibit sought a way to present the collection based on a First American Art aesthetic. They isolated and explored the following seven qualities inherent to, or elicited from, the work of Native Americans, and structured the exhibit around ways to explore them: *integrity* (to tribal identity, values, and ideals, despite the incorporation of new materials and techniques); *emotion* (in response to ideas and materials combined); *movement* (literally kinetic, or symbolic through pattern and design); *idea* (being part of a larger system of knowledge and philosophy, or being the idea itself); *composition* (the physical and spiritual combination of technique and materials); *intimacy* (the relationship of the maker and the user to the art); and *vocabulary* (the ability to express and encode the culture in materials, technique, and iconography). While such components may arguably be assigned to apply to world art (the material objects created by all cultures, whether they are to be deemed art or craft) the effort was an important step in a world-historical way—an opportunity to model not just exhibitions of Native



A rare Yokut Sun Dance basket woven with alternating rows of diamond patterns and human figures joining hands. Dover Pictorial Archives.

American art, but the field of study itself, so that art can help to explain the functioning and beliefs of a given culture.

Present-Day Identity and Artists

Difficulty or a lack of interest in identifying the maker of an object, combined with the problem of determining the maker's reputation for quality work, contributed to anonymity throughout the history of Native American artistic creations. Due to the frequently remote locations of origin, the fact that objects were often traded among indigenous groups and European merchants before arriving in private or public institutions, and the social nature of production in many traditional arts, individual makers and even tribal attributions could not always be made. Further, until the twentieth century, as a result of forced assimilation policies and compulsory off-reservation education, linguistic differences also separated objects from their original contexts and meanings in non-native eyes. Hence, the recognition of individual

artists was an important twentieth-century development because it contributed to the value of the work in the art world, and yet many unnamed native artists still produce a vast array of aesthetic material without such recognition.

Among the notable practitioners of traditional native arts before the twentieth century who did not remain anonymous is the Washoe artist Dat So La Lee (Louisa Keyser) who died in 1925 yet gave name and face to the otherwise perceived "utilitarian" (and hence derided) aesthetic practice of basketry. Until very recently, these traditional art forms and others (for example, Navajo weaving) continued to be represented by non-natives as objects and practices of a presumed "past" way of life, not the aesthetic expression of surviving and thriving contemporary peoples who are giving continuing meaning to their lives. New forms have arisen from these precursors, such as haute couture clothing utilizing Northwest Coast crest art (Dorothy Grant and Robert Davidson, Haida) and the fine-art tapestries of Ramona Sakiestewa, Hopi.



Pablita Velarde,
Basketmaking (1940). Casein
paint on board. The
Bandelier National
Monument in New Mexico,
dedicated to preserving the
ancient Pueblo site,
commissioned this painting
under the Works Progress
Administration (WPA).

Pueblo pottery and Northwest Coast carving continue to flourish today, some having undergone revivals through stimulation by traders, dealers, and native artists, and often using museum collections as prototypes. The Hopi-Tewa potter Nampeyo, active from the 1880s to her death in 1942, was the first Indian artist recognized by name in the art world in her lifetime. Her descendants, including Dextra Quotskuyva and many others, continue to make distinctive hand-coiled and ground-fired pottery of local materials interpreted in new ways. Robert Davidson, Haida, works to expand the carving tradition recognized in the nineteenth century and practiced by his forebear Tahaygen (Charles Edenshaw).

Training in contemporary media and studio art for native persons was first undertaken in Santa Fe's School of Indian Art, founded in the interwar years

(and often called the Dorothea Dunn school after one of its most prominent teachers); it became the Institute of American Indian Arts in 1962. Renowned and award-winning students include Pablita Velarde (1918–2006), Santa Clara Pueblo, a watercolorist who later turned to using pigments she derived from minerals and rock, and which she ground herself; Allan Houser (1914–1994), Chiricahua Apache, a sculptor of bronze, marble, and stone whose vision to create a family compound near Santa Fe culminated in sculpture gardens and studios that are now open to the public by appointment; Fritz Scholder (1937–2005), Luiseño, a prolific and controversial expressionist painter who used distortion, vivid color, and explosive brushstrokes to explore publicly held stereotypes of Native American; and Gerald McMaster (b. 1953), Plains Cree, who in 1995 curated an

exhibition of First Nations Canadian artists at the prestigious Venice Biennale.

Formal training now occurs in departments at major universities and art schools across the United States and Canada, launching a new generation of artists eager to articulate the significance of their art. These artists typically work in contemporary or nontraditional media but often combine elements of both; they create provocative works that challenge the boundaries of conventional representations in traditional work as well as the romanticism reproduced in them (the densely packed compositions of Jane Ash Poitras, Cree/Chipewyan, provide an example).

Recent scholarship in both anthropology and art history, by non-natives and natives alike, has begun to break the steel-like frame of criteria used to evaluate “primitive,” “traditional,” and “contemporary” media. New studies also explore the cultural significance of media (for instance, clay, grasses, hide, or wood) from the practitioners’ perspectives, and look at how language and storytelling, as “indigenous national histories,” construct not only the object’s value but also the activity or process of making art. Native voices have been reclaimed and given prominence in a new articulation of value, as the enumeration of seven aesthetic principles articulated by the “First American Art” exhibit at the Smithsonian attests. Manipulating a variety of media, including that of their ancestors, these artists challenge the very basis of aesthetic appreciation in the Western fine-art world. Their art and the articulation of its meaning is now being inscribed into the art-historical discourse. This marks a new moment in both the philosophy and the history of art. Gender, of course, is an integral dimension of this transformation, since native women have long been recognized as artists and creators of material forms that embody and help to reproduce local systems of knowledge. In this global environment, Native North American, First Nations, or First American art reveals how hybrid forms based on the knowledge of indigenous contexts relate to a wider world and thus actively realize beauty and meaning in rich and varied ways.

This achievement may yet be the greatest influence of this art in world history.

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See also Native American Religions

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Art—Paleolithic

In light of recent archaeological discoveries in Africa, scholars in a growing number of disciplines are reviving interest in Paleolithic (Old Stone Age / foraging era) art, opening up debate on fundamental world history questions that involve the origins of human art making; the physical, mental, social, and cultural conditions that made it possible; and the fact that creating art has endured and become increasingly integral to our existence.

Humans have practiced the visual arts in whatever part of the globe they came to inhabit. Within the context of world history the earliest manifestation of these arts in the Paleolithic (foraging) era merits attention. The basic questions of when and how the visual arts had come into being raised considerable interest among students of art history, archaeology, and anthropology in the decades surrounding 1900. But for most of the twentieth century discussion about the earliest art forms was relegated to the margins of academic concern, due in part to the highly speculative character of the various theories that proposed to account for them. Today questions concerning Paleolithic art have become topical again, although speculation remains. One important impetus to rejuvenating the field are the archaeological discoveries that have recently been made in Africa. These discoveries prompt us to completely reconsider early artistic behavior in terms of both time and place. Various new theories attempting to explain the emergence of art making add excitement to the field. This article introduces some of the latest developments in Paleolithic art studies.

The Beginning of Aesthetics and Meaning

The Paleolithic era, or Old Stone Age, starts when humans begin making stone tools, some 2.5 million years ago. The art historian David Summers has provocatively suggested that art history, too, starts at this moment. Whatever art is, he theorizes, it refers to something that is made—it is an instance of what he calls “facture.” Rudimentary as the earliest stone tools from East Africa may be, they do present the first material evidence of the human capacity to transform a medium, in this case to shape a stone by working it with another. By employing the qualifying term *art*, however, we usually imply additional characteristics, most frequently either “aesthetics” or “meaning,” and quite often both. “Aesthetics” requires that an object have a captivating appearance for it to be called art. Visual artistic behavior then refers to such activities as modifying human bodies and objects so as to give them heightened visual interest by means of shape, color, or line. When emphasizing “meaning,” we require an art object to have referential content (which may in itself be captivating). Artistic behavior then refers to such activities as drawing, painting, sculpting, or otherwise creating visual stimuli that evoke perceptual and/or semantic referents—a bird, a deity, the concept of ten, and so on—in a human beholder. Clearly the boundaries between these two analytical sets of activities are often hard, if not impossible, to establish, as when modifying the human body’s appearance implies both aesthetic effects and signals social status, or when a visual representation of a deity is made to look as handsome, or as fearsome, as possible.

From around 1.4 million years ago onward, early humans started to produce a new type of stone tool, the so-called hand ax. By 500,000 to 400,000 years ago, some of these pear-shaped artifacts displayed a striking symmetry, both en face and in profile. Although the imposed symmetry allowed the object to sit comfortably in the hand, some scholars argue that the symmetrical design went beyond utilitarian requirements and introduced an aesthetic element. In addition, the material from which these exquisitely crafted objects were made seems to have been carefully chosen, partly for its visual effect (often glistening stone, exceptionally with a fossil in the middle of the finished product). Although we will never be sure of the impact these objects had on contemporary viewers, the symmetrical hand axes may have been the first material evidence of the human tendency to create objects that command attention through their visual qualities.

These hand axes, however, were already disappearing from the archaeological record when “anatomically modern humans” arose in Africa some 200,000 years ago. The creation and use of art is especially associated with this new species, *Homo sapiens*. Nonetheless, until very recently research suggested that we had to wait until some 30,000 years ago before modern humans became involved with “art and personal ornamentation” after arriving in Europe. New evidence continues to revise this picture considerably.

Finds from the Blombos Cave

Recent finds from Blombos Cave, a coastal site at the southernmost strip of the African continent, are central to present-day discussions on early artistic behavior. Excavations led by Christopher Henshilwood have yielded, among other things, a piece of flattened ochre showing cross-hatched marks that appear to be framed by incised lines. When the finding was announced in late 2001—the engraved Blombos piece dated to about 75,000 years ago—archaeologists considered it the earliest unquestionable example of a human-made geometric pattern known so far. Its

discovery led to considerable attention in the popular press. Newspaper headings hailed the Blombos ochre as “the world’s oldest art object,” and it was claimed that because of this find “art history doubles”—an assertion referring to figurative cave paintings of Chauvet in southern France, estimated to be some 32,000 years old. Meanwhile in 2009, findings were published about additional engraved pieces of ochre from Blombos, the oldest dating to some 100,000 years ago.

We do not know whether the geometric patterns from Blombos were created to please the eye. Scholars observe, however, that in order to make sense of their visual environment, humans long ago evolved to become sensitive to such features as straight lines and repetitive patterns. Purified versions of such geometric features would then hyper-stimulate the brain and increase the pleasure that follows the detection of visual regularity. The brain’s innate response to visual patterning might then shed light on why humans started creating geometric designs, once the prerequisite motor and mental capacities had developed.

Some scholars, however, see the geometric patterns from Blombos predominantly in terms of symbolism, as a form of an intentional visual referencing that would represent a major step in human cognitive evolution, especially if the relationship between signifier and signified is established on a conventional or arbitrary basis (that is, when it is “purely symbolic”). Although what the designs might refer to remains unclear, this symbolism would demonstrate that the Blombos people were capable of “abstract thought,” and that they were able to store, as well as retrieve, information outside the brain. The mental capacities involved are in themselves often held to presuppose the existence of syntactical language, not so much because it is similarly symbolic but rather because language would be required to establish link between the engraving and its stipulated meaning.

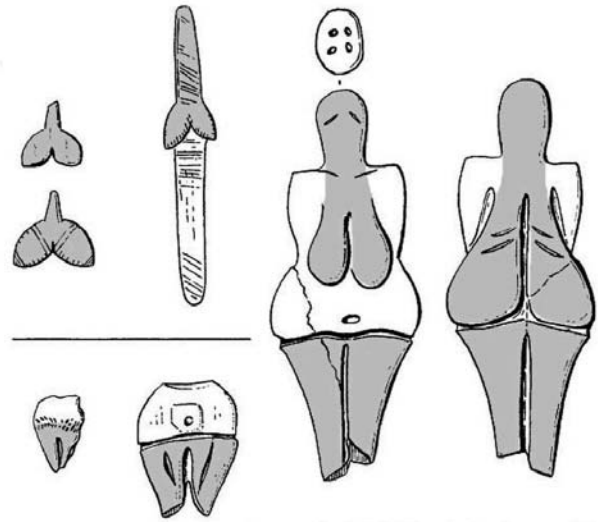
Adherents of a symbolic reading of the Blombos ochre also draw attention to another find in the cave: some forty deliberately perforated estuarine shells (*Nassarius kraussianus*) that show signs of having been strung and worn as beads. Archaeologists,

inspired by studies in ethnography, almost universally regard such beads as symbolic and emphasize their social role in signifying individual and collective identities. Beads may signal the wearer's age, kin group, marital status, and so on, thus visually marking and accentuating social differentiations.

When the discovery of the Blombos shells was first announced in 2004, it was considered as spectacular as that of the ochre, in that generally the perforated shells, likewise dated to 75,000 years ago, were held to have almost doubled the age for human bead production. This led to claims that the Blombos beads were too anomalous to allow significant conclusions to be drawn about human behavior during the time period concerned. Meanwhile, deliberately perforated shells, some of which are ochered, have been discovered in a cave in Taforalt, Morocco, and they have been firmly dated to some 82,000 years ago. Excavations in the cave continue with findings of shell beads that are 86,000 years old. A few other perforated shells from northern Africa and adjacent parts may even be older. Interestingly, all these beads are made from *Nassarius* shell, as are the Blombos beads from southern Africa, and they were found up to 200 kilometers (about 124 miles) from the sea, implying transport and probably exchange or trade.

Although archaeologists consider beads to be symbolic, in describing their probable use in necklaces they do use terms like “ornament” or “decoration,” implying that the wearing of beads also had an aesthetic effect. Indeed, the shells used as beads in Paleolithic contexts exhibit visual qualities such as bright color and luminosity. A repetitive pattern emerges when similar-sized beads are strung together; alternation of color might add to the pattern as well. Aesthetic and symbolic functions do not rule each other out, and may in fact be mutually strengthening.

Individuals who managed to secure particular types of shell and were dexterous enough to make them into beads by means of perforation—a feat not easily accomplished by present-day experimenters—may have worn these precious possessions themselves, as a form of visual display demonstrating self-awareness. They might also have presented them to others, for



The anthropomorphic symbolism in a Venus figurine suggests a cryptogram combining female breasts with a male penis and testicles. Archeologists are uncertain about the function of these figures, whether as fertility symbols or early forms of pornography.

example in the context of courtship; beads could as well have been instrumental in creating and maintaining intergroup contacts. If worldwide practices today are anything to go by, the wearing of shells or other pendants might also have early acquired a protective function, or served as a talisman to bring good luck.

As do some older perforated shells, four of the Blombos beads show traces of red ochre, a possible result of deliberate coloring or perhaps due to the shells having been worn on ochered bodies. Ochre is found in large quantities at African archaeological sites associated with anatomically modern humans, although its first use predates the arrival of *Homo sapiens* by at least tens of thousands of years. Some pieces of ochre have clearly been rubbed against surfaces. Research suggests that ochre might have been used for preparing hides, for medicinal reasons, or as an adhesive. Many archaeologists make a more popular “symbolic” interpretation, however, assuming that ochre was applied especially to human bodies in ritual contexts. Although this interpretation is



Carving of a running lion in ivory, excavated from Pavlov (Czech Republic), a site that reveals the hunting and tool-making skills of its Upper Paleolithic-period inhabitants.

mainly based on contested parallels with present-day hunter-gatherers, ochre is likely to have had some “significance” for early modern humans; its use in burials, for example, is attested from 100,000 years ago onward.

Iconic Representation

The application of ochre to surfaces would at some point also result in geometric and figurative images. Figurative imagery brings us to a subject that some call “iconic representation”: the two- or three-dimensional rendering of humans and other animals, or, to be more precise, the representation of things resembling those in the external (or imaginary) world(s)—fauna especially, but also flora, topographical features, built environments, and other human-made objects.

Specialists seem to agree that producing and perceiving three-dimensional figurative images takes less exacting cognitive ability than creating and making sense of two-dimensional iconic depictions. To understand such phenomena, consider what we presently know about the first human creation of figurative or

iconic images in the round: as yet no unambiguous evidence exists that early modern humans in Africa produced three-dimensional figurative imagery, although the few indications we do have give some credence to the speculation that they might have done so using such perishable, nonrecovered, but more easily modified media such as mud or vegetal materials including wood. Similarly for this period, we lack information on any ephemeral forms of modifying the body’s appearance, involving, say, flowers, feathers, and plaited fibers (but also hairdressing), or about such possible practices as drawing in, and perhaps with, sand.

Two controversial modified stone objects can serve as examples of early iconic representation, both dating, in fact, to before the arrival of the anatomically modern humans we presently conceive. One is an object discovered near the Moroccan town of Tan Tan, found in layers that are provisionally dated to between 500,000 and 300,000 years ago. The so-called Tan Tan figurine is a small stone whose natural shape resembles that of a human being. Some of the object’s natural grooves, which are in part responsible for its anthropomorphic appearance (e.g., a groove



separating the “legs”), seem to have been accentuated artificially in what is interpreted as an attempt to enhance the human semblance. Interestingly, red pigment appears to have been applied to the object’s surface. The second, the “Berekhat Ram figurine” found in present-day Israel in an archaeological context dated to 233,000 years ago, presents a similar but even more contentious case of semi- or proto-sculptural activity.

Exceptional and controversial as these objects may be, they indicate that hominids have long been capable of discerning human features in natural objects. The oldest specimen to-date is a naturally weathered pebble resembling a hominid face that was found at a three-million-year-old occupation site in Makapansgat in South Africa, probably having been brought there from a nearby riverbed. Given humans’ evolved sensitivity to the visual appearance of the human body, particularly when choosing a mate, it is not all that surprising that their increasing capability to modify materials eventually led to the further elaboration of objects bearing a natural resemblance to human features. The late arrival in hominid evolution of this type of behavior, however, should warn us not to think too lightly of the combined capacities involved.

Natural objects suggesting the shapes and outlines of animals, such as cave walls, appear to have held a similar appeal. Apart from European cave paintings, we may rely for evidence here on a 2006 report about a large piece of rock found in a cave in the Tsodilo Hills in Botswana that resembles the body and head of a python. The surface of the rock shows hundreds of artificial indentations that might have been applied to evoke a snake’s scales. The indentations appear to have been made by stone tools excavated in the cave, and which are provisionally dated to more than 70,000 years ago.

“Out of Africa”

Somewhere between perhaps 80,000 and 60,000 years ago, modern humans left Africa to colonize the rest of the world (where they would gradually replace

earlier humans, such as *Homo neanderthalensis* in Europe and descendants of *Homo erectus* in Asia). Following a coastal trajectory, groups of humans are likely to have migrated along the present-day Arabian peninsula via India to Southeast Asia and on to Australia, a continent that in all likelihood had not yet been populated by hominids. Other migrants, at some point turning north, would colonize Eurasia, following river courses at first.

In Australia, where modern humans arrived perhaps some 50,000 ago, shell beads in all likelihood continued to be worn, with the oldest finds so far including perforated shells that are dated to more than 30,000 years ago. From around this time we also have burials containing human bones covered with ochre. Red ochre was used as well for what is claimed to be the oldest evidence for rock painting in the world today: a piece of rock painted with ochre, found in Kimberley, in northwestern Australia, a region famous for its rock paintings, and dated to around 40,000 years ago.

Is this indeed the first evidence we have of humans applying paint to rock? If so, could this mean such activity developed only after modern humans had left Africa? Africa’s oldest paintings yet discovered were found in a cave in Namibia, where images of animals appear on slabs of rock. The paintings are traditionally dated to approximately 28,000 years ago. Recent scholarship suggests, however, that the images may in effect be some 60,000 years old. If so, this increases the possibility that Africa is the birthplace of two-dimensional figurative imagery. This would suggest in turn that the ability to produce such imagery might have been part of the neurocognitive (although not necessarily behavioral) repertoire of modern humans moving out of Africa.

For the oldest indisputable examples of three-dimensional imagery discovered so far we must turn to western Eurasia. Recent excavations of the earliest levels at the site of Kostenki, on the river Don in present-day Russia, suggest that modern humans first arrived in this part of the world at least 45,000 years ago. The excavations have yielded shell beads and a worked piece of mammoth ivory that may represent

a human head. Less ambiguous are recent finds from Vogelherd in southwestern Germany, including a small ivory figure of a woolly mammoth and an animal interpreted as a lion. The figures date to between 38,000 and 32,000 years ago. From roughly the same period are the figures that were discovered a few years back in Hohle Fels cave, also in southwestern Germany. Here archaeologists dug up three small ivory carvings: the oldest known representation of a bird, the head of an animal resembling a horse, and a sculpture interpreted as therianthrop (combining feline and human traits), which is compared to the roughly contemporaneous, but much larger figure known as the “Lion Human” from Hohlenstein Stadel, found in 1939.

Until very recently, the so-called Venus figurines from Upper Paleolithic Europe, typically representing corpulent or obese women, were thought to be a somewhat more recent phenomenon, with the most famous example, found in Willendorf in 1908, being dated to about 25,000 years ago; this limestone figure, fitting in the palm of a hand, is covered with red ochre. In 2009, however, archaeologists announced the finding of an ivory figure of a headless woman, with large breasts and buttocks, that was made at least 35,000 years ago and that might in fact be several millennia older. This figure, from the oldest level of Hohle Fels Cave, is considered the earliest incontestable representation of a human body known to date. The function and meaning of the “Venus figurines” remains unknown, with speculations ranging from fertility symbols to early forms of pornography.

Like their relatives who migrated to Australia, the newly arrived modern humans in Europe not only made shell beads (as well as other beads and pendants) but their activities included engraving and painting images on rock. Depictions of animals and geometric designs found in Chauvet Cave in southern France, the earliest of which are assumed to be some 32,000 years old (which makes them roughly twice as old as the famous examples of Lascaux and Altamira), attest to this, as do other findings. Until the early years of the twentieth-first century, Europe was in fact considered the cradle of human artistic

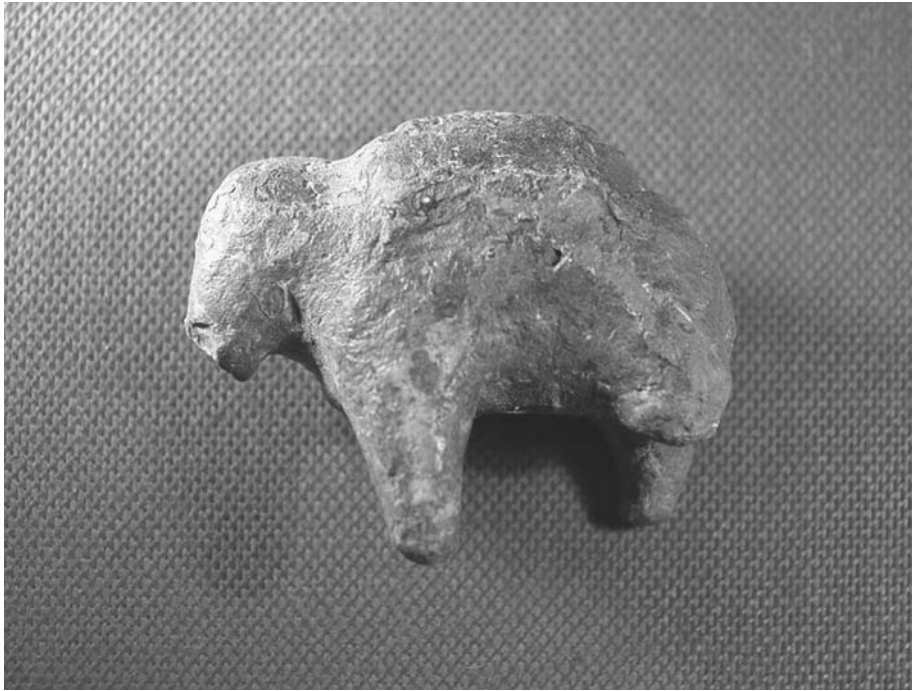
behavior, with scholars employing such expressions as “creative explosion” for what was regarded as the sudden advent of bead making, painting, and sculpture in this region some 30,000 years ago.

Farther afield, in the site at Mal'ta, to the west of Lake Baikal in Siberia, archaeologists found ivory sculptures depicting the human form and birds, which are estimated to be some 23,000 years old. The majority of the anthropomorphic figures seem to represent women, some wearing clothing. Most of the avian sculptures depict birds in flight (they are interpreted as swans, geese, and ducks). Like some of the human figures, they are perforated. By analogy with nineteenth- and twentieth-century Siberian hunter-gatherer practices, the perforated sculptures have been interpreted as “spirit helpers” that were attached to a shaman's costume.

Interpreting Paleolithic Art

Other Paleolithic art forms, too, are today interpreted in the context of shamanism, with special reference to David Lewis-Williams' intriguing theory on the beginnings of human image making. The research published in his *The Mind in the Cave: Consciousness and the Origins of Art* (2002) suggests that the images characteristic of Paleolithic art, namely animals and geometric designs, find their origin in hallucinations or “altered states of consciousness,” especially as experienced by “shamans” in a state of trance (induced by ritual, sensory deprivation, or psychotropic drugs), and thus that the first human images were created to “fix” shamans' hallucinatory experiences.

In proposing his theory, Lewis-Williams draws on shamanistic practices found today in hunter-gatherer societies all over the world. He argues that present-day humans have basically the same brains as their Paleolithic ancestors tens of thousands of years ago. Now when we perceive the world it is ultimately the brain that generates the images we experience. The brain may in fact produce images even in the absence of external visual stimuli, as in mental visualization and perhaps more vividly in dreams or other altered states of consciousness (but also, for example, when



This mammoth, one of the world's earliest ceramic figurines, was also found at Pavlov (Czech Republic).

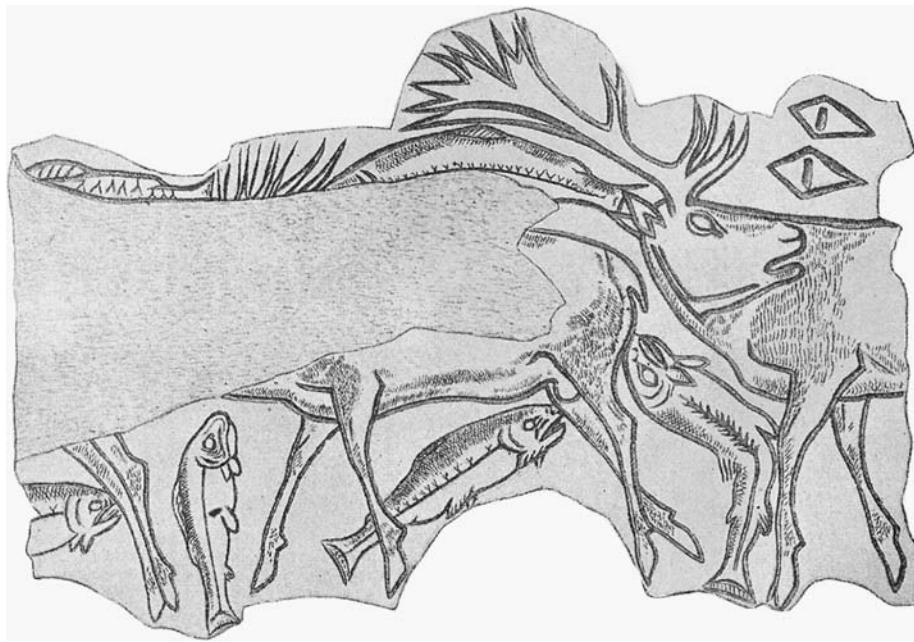
one slightly pushes the eyeball, resulting in the visual experience of various geometric or abstract shapes in different colors, something experienced more intensely by people suffering from migraine).

Research also suggests that images, specifically of animals, which were generated and experienced by the brain in trance-like conditions, would have been interpreted as pertaining to phenomena existing on another plane, as glimpses or visions of beings that populated “alternative realities.” Indeed, Lewis-Williams argues that the modern human brain is not only able to self-generate images, but it is also able to remember these and to share and discuss them with others through both verbal language and the visual images that serve as records of what shamans powerfully experienced when sojourning in “other realms.”

Shamanistic rituals can involve not only experiencing spirits in the form of animals, but the shaman's transformation into such a spirit being. This might shed light on the occurrence of therianthrope images in Paleolithic art. Some researchers object to such a theory, however, saying that not all artifacts

interpreted as therianthrope represent actual mixtures of humans and other animals: the so-called Lion Human of Hohlenstein Stadel, for example, might as well be a depiction of a bear standing upright. Furthermore, some of these images, which are said to be actually quite rare, may in fact render a human in disguise, pretending to be an animal in the context of the hunt. But scholars also argue that the scientific literature on hallucination is less supportive of Lewis-Williams' neuropsychological theory than suggested.

R. Dale Guthrie, a specialist in Arctic biology, presents an alternative account of Upper Paleolithic art but does not, however, address the preconditions or origins of human image making. Guthrie, focusing on Ice Age Europe, proposes that the images of animals on cave walls, but also on portable objects, result from their creators' fascination with the local wildlife. Countering the prevailing “magico-religious paradigm” in prehistoric art research, Guthrie posits that many images might in fact have been made by male adolescents who were inspired by what he calls “testosterone moments,” such as the excitement of the



This illustration of a drawing incised on a cave wall in southern France shows salmon and huge-antlered stags embellished with line patterns and cross-hatching.

hunt or the confrontation with large predators. This profane perspective on Paleolithic art making is also deployed to elucidate the sexual imagery frequently found in cave paintings, rock engravings, and other artistic expressions. Featuring mainly women and female sexual organs, this prehistoric “graffiti” could present young men’s sexual fantasies or experiences. Guthrie’s views share elements with the interpretation developed by John Onians, who bases his analysis on recent neuroscientific findings.

Paleolithic art has always been and continues to be a fascinating field of competing interpretative theories. One currently debated topic concerns the question of whether or not early art forms had an “adaptive function,” meaning whether or not artistic behavior contributed to the survival and reproduction of those who practiced it. Could it be that, once having come into existence, the tendency to create visual art was able to spread because it turned out to confer some evolutionary advantage on individuals or groups so inclined? Among the proponents of an adaptionist perspective on art, a distinction may be made between those who favor an explanation of art’s role in the competition among individuals (specifically for mates, in which case art would serve as a way

of showing off one’s skill and creativity) and those who argue for the social benefits of art’s presence, such as its effects on group solidarity, cooperation, and the intergenerational transmission of knowledge (for example, by making messages more memorable). Scholars who deny that visual art may be assigned an adaptive value suggest that it evolved as a byproduct of capacities and tendencies that in themselves are probably adaptive, such as the ability to create and manipulate tools and the positive innate responses to certain colors, lines, shapes, and subject matters that better helped humans to survive and reproduce.

The Future of Paleolithic Art Studies

After decades of relative neglect, Paleolithic art and the concomitant issue of the origins of art are today hotly debated by specialists from an ever-growing range of disciplines, including archaeology, art history, and anthropology, as well as evolutionary biology and neuroscience. While new archaeological discoveries are being published at an increasing rate, this interdisciplinary group of scholars is bringing new conceptual tools, interpretative frameworks, and research methods to bear on a fundamental set of

Where the spirit does not work with the hand there is no art. • Leonardo da Vinci

questions in world history: when and where did human beings begin making and using visual art, what conditions made this behavior possible (physical, mental, social, cultural), why has this artistic behavior been retained in human history, and how has art increasingly become integral to our existence?

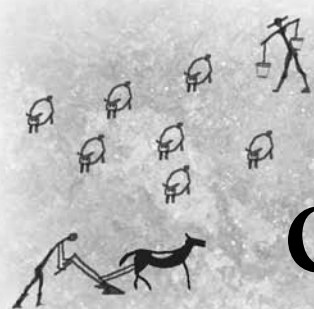
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Leiden University and Ghent University

See also Art—World Art Studies; Art—World History and Art; Paleoanthropology

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Art—Pre-Columbian Central and South America

The arts of Central and South America created prior to the arrival of Europeans in the 1500s represent the development of many sophisticated civilizations, some of which still exist. Although countless changes occurred after the European conquest, many indigenous philosophies, cultures, and customs did not vanish; rather, people of the Americas found ways to combine aspects of old and new, especially in their art and architecture.

Before the late fifteenth- early sixteenth-century European conquest of Central and South America, indigenous peoples—such as the Inca, Maya, Mixtec, Aztec/Mexica, and Zapotec—had developed art and architecture with distinctive characteristics. Many artifacts exist to inform world historians and researchers studying those civilizations, and scholars continue to excavate, analyze, and publicize the remains of ostensibly vanished cultures. Native Americans and mestizos (those of mixed Native American and European ancestry) continue to spur discussion and exploration of pre-Columbian cultures, and to revive an indigenous past that formerly was suppressed or hidden during the colonial era.

Pre-Columbian Art: Overview

Although artistic traditions in the Americas continued long after the arrival of Europeans, the end of the pre-Columbian period in the Caribbean is marked by 1492, the year in which Christopher Columbus came to the Antilles. In the highlands of Mexico, pre-Columbian art is generally dated prior to 1521, the year in which the conquistador Hernán Cortés and

his allies conquered the Aztec/Mexica capital Tenochtitlán. Francisco Pizarro's 1533 conquest of the Inca capital Cuzco, Peru, ends the pre-Columbian creation of art in South America.

The exchange of art and ideas occurred across vast distances and influenced widely disbursed groups in the Americas; sometimes art materials were brought from afar to satisfy philosophical, spiritual, political, and aesthetic needs. Much extant pre-Columbian art is made of durable stone, metal, stucco, or clay, but the people of the Americas created goods for home and trade using materials as varied as amaranth seeds, animal hide, bark paper, bone, cotton, feathers (especially the quetzal's), gold, greenstone, jade, mineral and vegetal paint, pearls, shells, silver, turquoise, wood, wool, and yucca. Public and semipublic monuments communicated messages asserting the legitimacy of the right to rule; they commemorated conquests of polities and foes, celebrated the histories and awe-inducing qualities of gods, and informed successive generations about historical and mythological events. Thus, art in the ancient Americas transmitted much more than ideas about beauty.

Although the Americas comprised various ethnic groups and city-states, they shared similar beliefs (pan-American bird-feline-lizard religion; rain or lightning gods), cultural practices (patronage and trade; sacred architecture; art used in rituals and ceremonies), and motifs (preference for abstraction; substantial use of red pigments; accordion-style record books). Historians once accounted for these similarities in Mesoamerica by theorizing that the Olmec (c. 1500–550 BCE) established norms that successors followed, but today they believe cultures such as the Zapotec may be nearly as ancient. As for South

American indigenous peoples, scholars believe they maintained the customs, aesthetics, and culture of the Chavín (c. 800–200 BCE) of the Andes. Recurrent themes also abound in pre-Columbian South American art and architecture: food and agriculture; gods and rulers; sacrificial rituals; sexuality and fertility; and symbols of wealth and status.

Most surviving pre-Columbian art emphasizes contour line, pattern, and hieratic scale (the depiction of more important figures as larger than others in the scene). Artists, apparently suffering from *horror vacui* (literally, the fear of empty spaces), filled the entire composition with images, glyphs, or repeated motifs. They preferred composite perspective for figures, a style comparable to Egyptian art in which arms and legs appear in profile while the torso is frontal. Pre-Columbian art rarely, if at all, used perspectival systems to create illusions of the realistic world humans inhabited. These practices were the product of aesthetics, not a lack of technique: oral histories, documents, and material evidence indicate that pre-Columbian artists were extensively trained.

This survey takes a geographical approach to the settlements of the pre-Columbian period, starting in ancient Mesoamerica with the Olmec and ending in the Andean cultures of South America.

Mesoamerica: Pyramids, Ceramics, and Ball Courts

Ancient Mesoamerica, the region that encompassed present-day central Mexico, Guatemala, and Honduras, included numerous settlements and cities populated by various indigenous people who shared specific religious and aesthetic philosophies—and who documented sociocultural structures and practices in their art.

Olmec

Once called the “mother culture” of Mesoamerica, the Olmec settled along the Gulf of Mexico in the areas now known as Vera Cruz and Tabasco as early as 1500 BCE and continuing through 550 BCE. Data



A monumental head of Dzahui, the Rain God, “guarded” by frogs. Late Postclassic. Teotitlan del Camino, Oaxaca. Photo by Danielle L. Pierce.

accumulated since the late 1990s, however, suggest that other groups, such as the Zapotecs of southwest Mexico, may have origins stretching back that far. The Olmec were not homogenous or static while they flourished; archaeologists have found Olmec art several hundred kilometers from their gulf-coast centers.

The Olmec developed a complex calendrical system and demonstrated an interest in writing. Glyphs found at La Venta and on the Cascajal Block (a writing tablet-sized slab dating to the first millennium BCE and discovered in Veracruz), may be the earliest example of writing in North and South America. Archaeological evidence in sites at San Lorenzo (flourished 1200–900 BCE) and La Venta (900–400 BCE)—including clay and stone architecture, monumental and small-scale sculptures, bas-reliefs, and decorative ceramics—suggests a sophisticated, well-developed civilization with an interest in agriculture, aquatic and amphibious life-forms, leadership traditions, and status. Ceramics and small stone carvings, exchanged along



extensive economic trade routes from about 1150 to 900 BCE, likely influenced artwork in the Mexican highlands, where large Olmec-style petroglyphs and pictographs have been found in caves. From about 900 to 550 BCE, the Olmec traded carved jade, usually in the forms of celts (chisels) or axes. Artists incised anthropomorphic and animal features—most notably of snarling, jaguar-like creatures, reflecting the belief that jaguar deities could assume human form—into jade, later rubbing red-brown cinnabar (mercury sulfide) into the lines. (The poisonous cinnabar signified a kind of untouchable sanctity to the works.) Frowning, puffy-faced, carved figures—some referred to as the “were-baby” or “jaguar-were-baby”—pervade Olmec art. Scholars suggest the were-baby was symbolic in the transmission of power from one ruler to another, or served as a representation of the origin of power in the Olmec tradition.

The Olmec transported huge pieces of basalt some 96 kilometers from the Tuxtla Mountains to build a portion of the 30-meter-high Great Pyramid in La Venta. (The structure, estimated to have taken 18,000 men about a million man-hours to construct, has been noted for its similarities, including its north-

south axial orientation, to the great Egyptian pyramids. The best-known examples of Olmec sculpture, sacrificial offerings in the form of colossal heads, likely represented individual rulers; while they all exhibit fleshy faces, almond-shaped eyes, and downturned mouths, each face is different. The Olmec sacrificed items, such as statuary configurations and mosaic floors, by burying or somehow hiding them from public view after completion (again, a striking similarity to the Egyptians). The pre-Columbian art scholar Mary Ellen Miller has called this type of offering *hidden architecture*.

The Olmec built ball courts and played the Mesoamerican ballgame, a political-religious, culture-defining ritual of pre-Columbian societies, especially the Maya, that persisted until the time of the conquest. On a slope-walled, I-shaped court, heavily padded players used their arms, hips, shoulders, and torso—but not hands—to hit an approximately 4-kilogram rubber ball through small raised goals. Small ceramics depicting ball players and spectators have been found in southwestern Mexico. Some scholars suggest that the ball represented celestial bodies held aloft by the players’ skill.



Panorama of Monte Albán from the South Platform, 2006. Photo by Matt Saunders.

Characteristics distinctive to Olmec—the colossal head, the use of red pigment as a means of expression, jaguar or feather headgear, and deity masks—influenced later cultural groups well beyond the third century CE.

Maya

The Maya, scattered like the Olmec, were located in southern Mexico, Belize, El Salvador, Guatemala, and Honduras; their stratified society engaged in farming, hunting, masonry, and trade. Distinctively Maya centers emerged circa 300 BCE and endured until the time of the conquest. Some Maya edifices, such as the Temple of the Cross and Temple XIX at Palenque, have deteriorated significantly, while other artifacts remain subsumed by jungle or buried beneath earth.

The Maya kept their historical documents in codices (accordion-style record books). They did, however, maintain an oral history tradition in such collections as the *Popol Vuh*, written down in the sixteenth-century by a Maya noble; it details the adventures of Hero Twins who attempt to defeat the gods of the underworld and resurrect their father.

Many Mayan ceramics depict scenes from the *Popol Vuh*: the renowned Blom Plate, for instance, illustrates the twins using blowguns to shoot a boastful macaw that wrongly claims to have created the sun and moon.

Gods, sacrificial victims, and rulers appear repeatedly in Mayan art. Deities comprised of body parts from more than one animal are shown with humanoid hands, legs, and heads. Sacrificial victims are usually depicted as nude or semi-nude, to the Maya a condition of shame. The Maya practiced ancestor worship, burying the dead with the tools of their professions, cremating or interring the remains of royalty, and, later, building temples and tombs to honor them. Stelae honoring current and departed rulers included dates and symbols of their accomplishments.

The Maya continued to refine the 260-day ritual calendar, establishing the “long count” of days since the beginning of time, which they believed to be 3114 BCE. Twentieth-century scholars who discovered that glyphs appearing in Mayan iconography were often numeric notations from this calendrical system were able to discredit the prevailing view of





In this mural at Teotihuacán the puma's claws are drawn with characteristic, cartoon-like exaggeration.
Photo by Danielle L. Pierce.

the Maya as peaceful philosopher-kings. Evidence is in the art: Mayan glyphs, frescoes, relief carvings, and wall panels suggest that bloody conflicts and sacrifices existed throughout known Mayan history—and that political posturing, war, and human sacrifice, in addition to agricultural and environmental factors, may have contributed to the decline of populous Mayan settlements circa 800–900 CE. The Maya lived in less populated, more decentralized settlements at the time of the Spanish conquest.

Zapotec

The Zapotec civilization, which established its earliest settlements in Oaxaca, Guerrero, and Puebla, may have existed somewhat concurrently with the Olmec, although for a longer period. At the time of the conquest, Zapotecs engaged in trade across central Mexico but did not dominate the region like Mixtecs or Mexica.

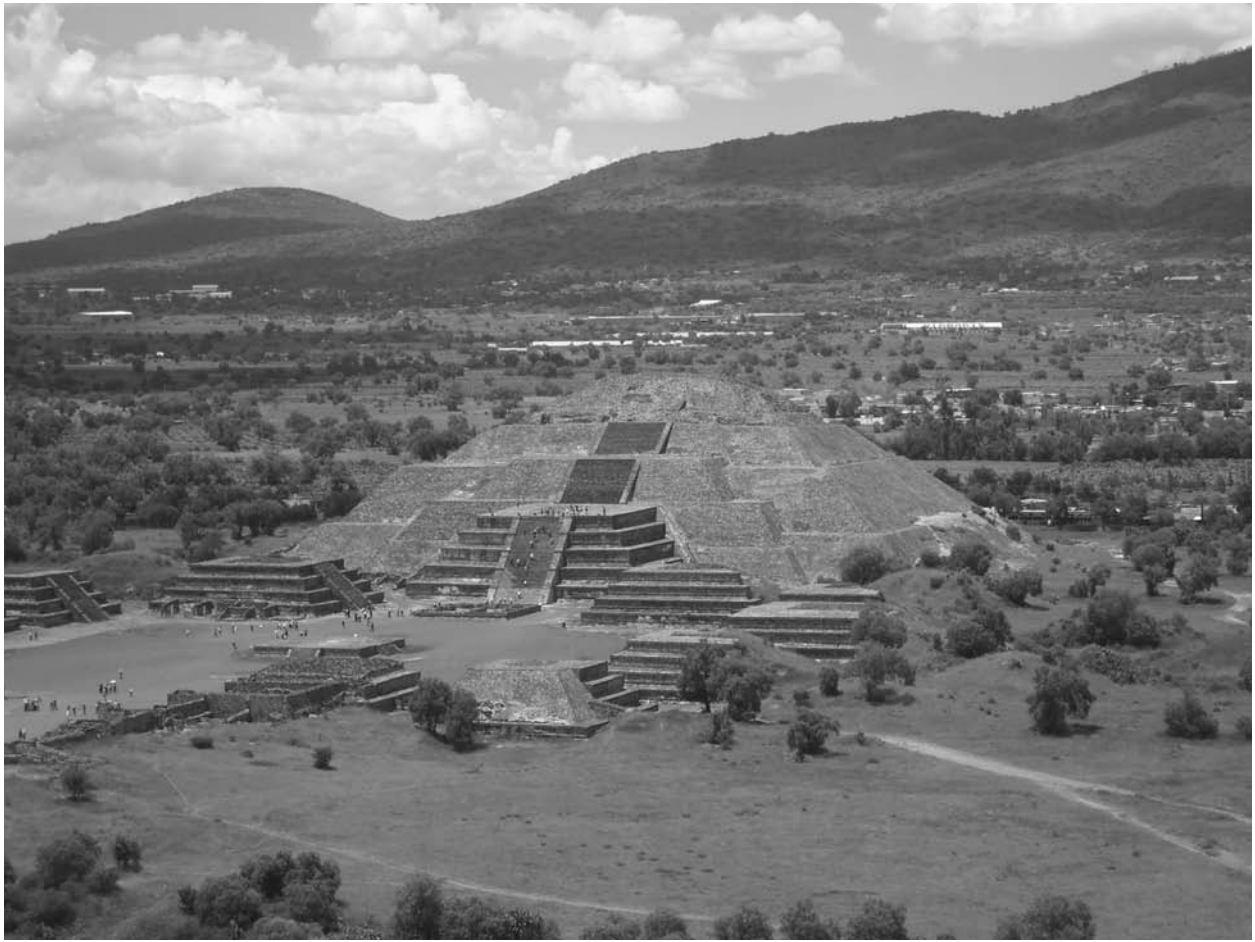
The Zapotecs maintained a pantheon of gods, a 260-day ritual calendar, a priest-scribe class, and a belief in a universal life force called *pè*. The visage of Cocijo, their god of lightning, appears on many complex ceramic pieces from Oaxaca. Scholars suggest that the Zapotecs' militaristic society created arts

and temple architecture to connote power and status and to revere ancestors, especially previous rulers. (From about 200 to 1000 CE the Zapotecs built large mounds and structures over older structures, as did the Maya.) Relief carvings in the city of Monte Albán (built 300–200 BCE and declined 200 CE) depicted named, sacrificed captives in varying levels of mutilation. In Tomb 7 at Monte Albán, archaeologists discovered collars with golden beads shaped to resemble jaguar teeth and turtle carapaces, personal adornments (including labret plugs, i.e., decorative status items that enter below the lower lip inside the mouth and project outward away from the face), ceramic urns, and incense burners.

Teotihuacán

Teotihuacán, established during the beginning of the first century CE about 48 kilometers from present-day Mexico City, flourished from 350 to 600 as one of the world's largest cities (population c. 200,000). Residents worshipped the Rain God and the Feather God (Quetzacoatl), recognizably antecedent to gods of later Mesoamericans. The city's ceremonial center burned in the eighth century; thereafter Teotihuacán declined but remained a pilgrimage center until the conquest. The Mexica, who then predominated and gave the city its name, believed the site to be the place where gods created the sun and the moon. (Teotihuacán means "The City [gathering place] of the Gods.")

The Avenue of the Dead forms a 5-kilometer north-south axis through the city beginning in front of the Pyramid of the Moon. Multiple, symmetrically arranged residences, temples, and open courts flank the road, which then passes, on the left, the dual stairway of the Pyramid of the Sun. Continuing south, in the heart of the city, the avenue leads to the Cuidadela (Citadel), a vast sunken plaza whose focal point is a six-platform step pyramid, the Temple of the Feathered Serpent. The temple structure exhibits a hallmark of Teotihuacán *talud-tablero* style: each sloping base (*talud*) supports a vertical entablature that is surrounded by a frame and filled with sculptural decoration.



Pyramid of the Moon in Teotihuacán, where the Mexica believed the gods created the sun and the moon. Photo by Danielle L. Pierce.

Teotihuacán murals exhibit easy-to-understand, cartoon-like line drawings in which elements of color and style can be read symbolically. The jade green nose adornment, headdress feathers, and beads of the Great Goddess of Tetitla (Teotihuacán) denote spiritual wealth and the sustenance it provides. The repeated C curls and lines attached to her hands represent abundance and flowing water.

Archeological evidence of human and animal artifacts buried with precious jade figurines, adornments, and obsidian suggest that the Teotihuacáños engaged in sacrificial practices; evidence of sacrificial rituals appears in Teotihuacán art. A fragment of a mural called *Maguey Bloodletting Ritual* (600–750 CE, Cleveland Museum of Art) shows a priest piercing

his hand on the spine of a maguey plant—a source of food and fiber (for fabric, rope, and paper), as well as a sacramental drink. The priest then scatters his blood on seeded, rectangular plots of earth.

Mixtec

The Mixtec settled between 1500 and 750 BCE in Oaxaca, Guerrero, and Puebla, where they became powerful circa 900 CE. Mixtec culture continued to develop somewhat concurrently beside the Mexica, who conquered several Mixtec city-states during the 1400s and early 1500s, exacting tribute from the conquered villages. The Mixtec used alliances created through marriage to determine the inheritance



of titles and the right of rule. Spaniards later came to rely on this elite ruling class to aid in conversion and cultural changes.

Scholars have labeled extant codices, jewelry, and ceramics as Mixteca-Puebla, a style that emphasized the planar qualities of a figure and object by outlining and filling the image with flat, consistent earth tones and eschewing realistic representation for economical stylization.

Aztec/Mexica

At the time of the conquests, Nahuatl-speaking peoples who called themselves Mexica, not Aztec, were the dominant power and culture in Mesoamerica. (The name “Aztec” only became popular when scholars in the nineteenth century adopted it as a way to distance “modern” Mexicans from pre-conquest Mexicans.) The Mexica controlled a vast empire spanning central Mexico from the gulf to the Pacific, an accomplishment achieved through military campaigns, marriage alliances, an education system for elite males, and control of trade networks.

The Mexica developed communities as early as 950 CE in central Mexico; they built portions of their capitol Tenochtitlán, where Mexico City stands now, as early as the twelfth century, constructing it on islands in Lake Texcoco that were built up from debris. One renowned Mexica myth, now part of modern Mexican national identity, describes the peoples’ origins on an “island of whiteness” (Aztlán). The hummingbird god Huitzilopochtli directed them to leave Aztlan and travel until they saw an eagle, perched on a prickly pear cactus, gobbling a snake—and there to build their new home. After Mexico won independence from Spain in the late 1880s, leaders evoked images of the Mexica past to inspire the future: Mexico’s coat of arms depicted an eagle clutching a snake in its beak, and symbols from Mexica carvings began to appear on postage stamps. In the 1920s, when Mexico’s education minister invited artists including Diego Rivera and José Clemente Orozco to paint murals on public buildings to commemorate those who fought in the revolution, many painters drew upon

Mexica mythology and symbols. For Rivera, the Earth goddess Coatlicue (Huitzilopochtli’s mother) was an especially iconic image.

Scribes recorded details of Mexica history, religion, and culture in codices—the pre-Columbianist Elizabeth Boone calls them “containers of knowledge”—by using glyphs that represented components of words, ideas, names, and dates and by arranging them in “scenes” with symbolic, interpretative clues. Very few of these books exist today. The Mexica king Itzcoatl became notorious (in part) for rewriting or destroying these historical chronicles when he came to the throne in 1428. After installing the first bishop in Tenochtitlán in 1528, Spaniards also embarked on a campaign to destroy indigenous records.

The main temple of the Mexica Empire, the Templo Mayor, held dual shrines, one dedicated to Huitzilopochtli and the other to the rain god Tlaloc. Excavations revealed a cave and offerings below the pyramid, as well as artworks depicting Mexica origin myths. The Coyolxauhqui disk, for example, illustrates the dismemberment of Huitzilopochtli’s traitorous sister, who attempted to kill their mother, Coatlicue (“she of the serpent skirt”), after learning of their mother’s pregnancy.

The Mexica first fell to Hernán Cortes in 1519 and suffered a final defeat in 1521. On 22 October 1522, Holy Roman Emperor Charles I (V) declared Cortés Governor and Captain General of New Spain. Over the next several years, Spanish forces subdued much of the rest of Mexico and established it as a colony.

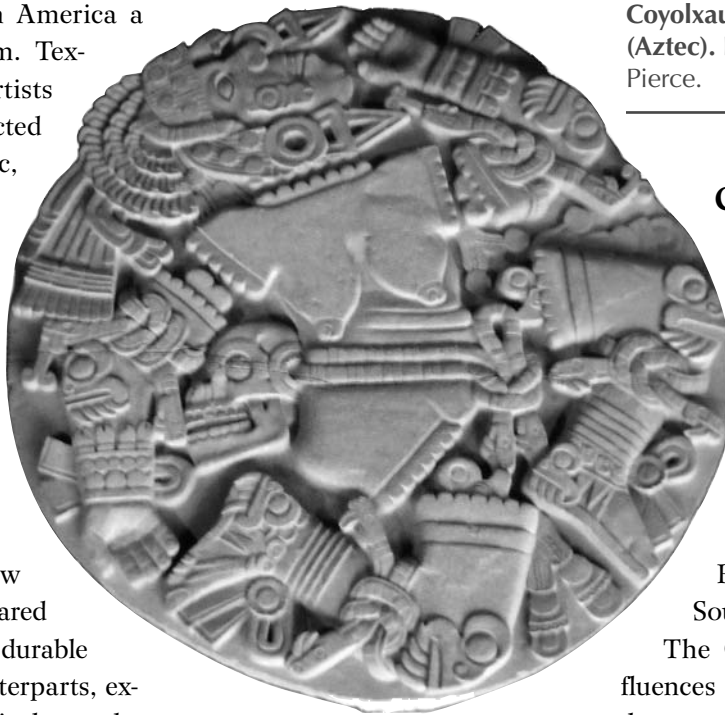
South America: Textiles before Ceramics

Ancient peoples of the Peruvian Andes developed textile technology before ceramic technology. Woven items dating from the ninth to the sixth centuries BCE found in Guitarrero Cave are the oldest artifacts from the continent, and archaeologists discovered mummies wearing intricate textile designs from as early as 5,000 BCE at Huaca Prieta. The high grasslands of the Andes—the habitat of llamas, alpacas, vicuñas, and guanacos (all a rich source of wool)—made the creation

of textiles in South America a flourishing art form. Textiles designed by artists for private use reflected a measure of ethnic, political, and social status. Textiles in Andean public life assumed the significance equal to ceramics in Mesoamerican ritual sacrifices and bronze in Chinese ancestor worship—and yet relatively few textiles, at least compared to in number to their durable clay and metal counterparts, exist in the archaeological record.

Early South American Origins

In the central Andes of South America (present-day Peru and Bolivia) civilizations developed, as they did in Mesoamerica, with rich and varied artistic traditions, but in the midst of a more dramatic geography—dry desert between the Pacific and the snow-capped peaks, highland grasses (home to the Andean camelids), and steep slopes that descended on the east to the rainforest of the Amazon Basin. The earliest ceremonial mounds and plazas on the coast date to the third millennium BCE, the same period as the earliest pyramids in Egypt. Multi-room stone structures in the highlands featured sunken fire pits that were used to burn ritual offerings. During the second millennium BCE, prior to the settlement of Chavín de Huantár, coastal peoples became more dependent on agriculture, and thus began to build canal and irrigation systems. A distinct style of architecture emerged as populations moved inland: large, U-shaped ceremonial structures, with sunken, circular spaces, were oriented toward the mountains, the rising sun, and the source of the water they needed to grow food.



Coyolxauhqui Stone, Mexica (Aztec). Photo by Danielle L. Pierce.

Chavín

The people who populated Chavín de Huantár (c. 900–200 BCE), a settlement located on a trade route through the mountains that connected the Pacific Coast and the Amazon Basin, were influential in South America for centuries.

The Chavín incorporated influences from earlier surrounding peoples, appropriating the U-shaped buildings of the coastal regions and the recessed spaces of South American highland structures to create a uniquely Chavín aesthetic.

Archaeologists have found golden objects, ceramics, and textiles produced by the Chavín far north and west of the mountain pass, an indication of their complex trade network. Artisans produced gold and gold alloy sheet-metal adornments, headgear, pectorals (chest pieces worn by elite men), and ceramic stirrup-spout vessels. The abstract style of Chavín art deals with recurrent motifs and subject matter, especially religion and spiritual transcendence.

Nazca

The residents of Nazca (Nasca), Peru, established their settlement as early as 600 BCE. The adobe pyramid—altered hills made to resemble large structures—burials mounds, plazas, and funerary offerings at Cahuachie are associated with the Nazca.

Chavín textiles and ceramics influenced Nazca weaving and pottery, but the Nazca are best known for transforming the living surface of the Earth to create monumental artworks, called geoglyphs, on the

Pampa de Nazca. The Nazca dug contour lines in the dark gravel of the plains to form gigantic images—a hummingbird, a killer whale, and a monkey, for example—and then they edged the underlying lighter soil they'd exposed with sea and river stones, shells, and ceramics full of corn beer in what scholars believe were fertility or water rituals. Some have posited that the people of Nazca could not have made the geoglyphs themselves—that the makers and intended audience were space aliens. Scholars do agree, however, that early humans were capable of creating such large imagery (and that such endeavors could take place without conscription or slavery). Pre-Columbian art produced only for the eyes of gods is not unusual: the Olmec offered hidden architecture below buildings and under special spaces; the Mexica gave offerings in the layers of the great Templo Mayor.

Moche

The Moche, whose origins are not fully understood, resided in a desert valley in the Andes (north of Chavín de Huantar) from the first century CE to the eighth century; the capital, Cerro Blanco, was located close to an ancient trade route connecting the coast and the edge of the highlands.

Allusions to agricultural and commercial pursuits appear in many Moche artworks. The burial site of the Lord of Sipán, discovered north of the Moche Valley, included a gold and silver collar made from beads representing the peanut (an important source of protein and fat), as well as silver-and-gold-gilded ear spools, masks, textiles, and ceramics. Excavation of the burial site suggests that the Moche were a stratified, militaristic society with a many skilled artisans.

The enormous adobe pyramid at Cerro Blanco, a royal residence known as the Pyramid of the Sun, was made using sun-dried mud bricks, some of which retain the distinctive marks identifying the communities that made them. A second pyramid, the Pyramid of the Moon, was built on a hill, probably as a ritual or ceremonial space. The repetitive building of pyramids in Central and South America suggests a

possible early connection between the two cultures, although the building of such structures could have been independent of each other.

The Moche mass-produced molded ceramics and created one-of-a-kind pieces that were both functional and decorative; such objects displayed naturalism and convincing detail. Scholars believe that vessels portraying rulers were used in rituals and later buried with elites. *Moche Lord with a Feline* (Art Institute of Chicago) is a square vessel on top of which sits a lord, wearing an elaborate headdress with coordinating ear spools, who pets the head of the cat (or jaguar cub) lying next to him. Behind the figure the ceramicist attached a stirrup spout—an upside-down, U-shaped, hollow handle with a single spout protruding from the top—a feature probably appropriated from the Chavín.

Other vessels convey scenes from daily life and sacrificial practices. Some depict food (e.g., corn and beans), deities, flora and fauna, birds, and ocean creatures. Many display sexual imagery, such as prisoners of war with exposed genitalia, or dancing skeletons with erect penises; still others show scenes in which numerous lively figures engage in numerous forms of sexual activity. (Replicas of these so-called Moche sex pots, ubiquitous in marketplaces that target tourists, and are also the subject of considerable anthropological discussion.) Although not much is known about Moche spirituality, several Moche ceramics depict a warrior priest holding a ritual cup, presumably filled with blood or other sacrificial libations.

The arrival of El Niño in the Moche Valley circa 600 CE started the decline of the civilization, and, eventually, the Moche abandoned Cerro Blanco. After the conquest a local river was redirected to flood the site and make it easier to pillage precious objects.

Inca

The Inca developed circa 1100 and by the sixteenth century grew to rule the empire of Tiwantinsuyo, laying stones over the ancient paths that ran from Ecuador to southern Chile. (In the early 1500s its territory rivaled China's in size.) The capital, Cuzco,

As for your pope of whom you speak, he must be mad to speak of giving away countries that do not belong to him. • **Atahualpa, on hearing that in 1493 Pope Alexander VI had awarded parts of Peru to Spanish monarchs**

included ritual routes called *ceque*, lines radiating out from the Qorikancha (Coricancha, or the Temple of the Sun), the city center.

Several versions of the Incas' origin stories are known and referenced in colonial paintings of ancient ancestors. One tells that the Inca believed the incestuous brother/sister husband/wife pair, Manco Capac and Mama Ocllo, received a prophecy about a new homeland in which a golden staff could miraculously penetrate the soil. Eventually they found that place, defeated the people who lived there, and took control of what was to become the center of their empire.

Political systems of the Inca, which required subjects to make tax payments in the form of food, labor, or textiles, and to exchange equal amounts of work among households, fostered advances in textile arts and architecture, two distinctive features of Andean civilizations. Andean textiles are among the most technically complex cloths ever made, some containing five hundred threads per square inch. Making textiles consumed a major part of the human resources of Andean society, whose dyers, weavers, and embroiderers employed and invented nearly every technique known over the centuries. Some cloths, dually appreciated for their beauty and labor intensiveness, were woven, unwoven, and rewoven to achieve special effects. Cotton, grown in Peru as early as 3000 BCE, was the most commonly used plant fiber. The earliest cloths were made without looms, and the techniques of knotting, winding, twining, braiding, and looping continued after the invention of the loom in the early second century BCE. Possessing finely woven cloth conveyed wealth and status; textiles, considered offerings worthy of the gods, were often draped around gold statues. (The conquistadors, of course, kept their sights on the gold). Incan textiles were primarily woven by *acalla*, or female weavers who were under the jurisdiction of state religion. Special administrators called the *quipumacayu* probably tracked such items, in addition to histories, census data, and tribute, with record-keeping systems using *quipus*, knotted and colored cord.

Although the Inca domesticated llamas, these animals could not bear the weight of the monumental

stones used in construction. Thus human labor was necessary for two types of architectural construction: cyclopean masonry and *pirca* (*pirka*) masonry. Cyclopean masonry involved the mortarless configuration of load-bearing walls that were able to withstand destruction from earthquakes endemic to the region. *Pirca* was a load-bearing approach that used mud mortar. Some Incan buildings were constructed of *pirca* walls with a cyclopean masonry façade. A geometric style emphasized basic shapes and lines instead of complex or crowded iconography. Thus Incan builders created other stonework of refinement and durability, such as roads and bridges to link the empire, terraces for growing crops, and irrigation systems essential for supporting a highland population increasingly dependent on agriculture.

When the Europeans arrived, Incan rulership was in dispute. King Huayna Capac died unexpectedly without selecting an heir, leaving his two sons to fight for control of the empire. In 1532 the victorious son Atahualpa fell hostage to Francisco Pizarro, his band of men, and, likely, his Native American allies. After receiving a room full of gold as ransom, Pizarro and his men strangled Atahualpa, appropriating the Incan Empire for the Spanish crown, and took Cuzco in 1533.

Aftermath of the Conquest

Exploitive policies of European conquerors (and ravages of disease they carried, to which indigenous peoples were not immune) caused a sharp decline in native populations in Central and South America. Colonizers suppressed local beliefs and practices, tore down temples, and built churches. Religious conversion fell to Franciscan, Dominican, and Augustinian missionaries, many of whom were appalled by the conquerors' treatment of their subjects.

To some extent, indigenous symbolism was absorbed in Christian iconography, especially in the form of crosses installed in church atriums, where converts gathered to be educated. Missionaries recruited native sculptors to carve these stone crosses, and although the images were likely copied from

illustrated books the missionaries supplied, elements of pre-Hispanic sculpture pervaded. One such sixteenth-century cross (in the Basilica of Guadalupe in Mexico City), carved with dense low-relief images such as Christ's crown of thorns, suggests an ancient Mesoamerican symbol, the World Tree (or Tree of Life), with its stark form and rich surface symbols; the image of blood sacrifice correlates to indigenous beliefs of the Teotihuacán culture, for example, but the newly converted artists who carved it might not yet have experienced the spiritual resonance.

The customs and arts of many indigenous peoples, rather than disappear, mixed with those of their conquerors or survived intact among smaller groups (only to be revived as research in pre-Columbian art piques). While adopting Spanish cultural ideas and practices, the Maya preserved their traditions and language throughout the colonial era, and continue to reside in Chiapas, Mexico, as well as in Belize, Guatemala, and Honduras. Today Zapotecs are concentrated in many southwestern Mexican regions where their ancestors lived. Mixtecos in the twenty-first century are engaged in a revival of their language and pre-Columbian thought and culture, while blockbuster museum exhibits in all things "Aztec" have brought a more nuanced approach to the Mexica. Still-practicing weavers and other textile artists, whose craft has been handed down through centuries, provide a source of pride and world recognition today, as well as a storehouse of information for historians.

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See also Aztec Empire; Inca Empire; Mesoamerica

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Art—Russia

Religious icon painting prevailed in Russia until the European Baroque style surfaced in Moscow in the seventeenth century. With Peter the Great (reigned 1682–1725) came radical change and Russia's ascendance as a European power. From then on Russian artists were both inspired to emulate their Western counterparts and provoked to assert their Russian identity. Contemporary Russian artists continue to experience this dynamic tension in the international art world.

Russian art is far less well known than Russian literature or music, but it has a rich history—both as part of and set apart from European tradition.

Early Russian Religious Art: 1000–1700

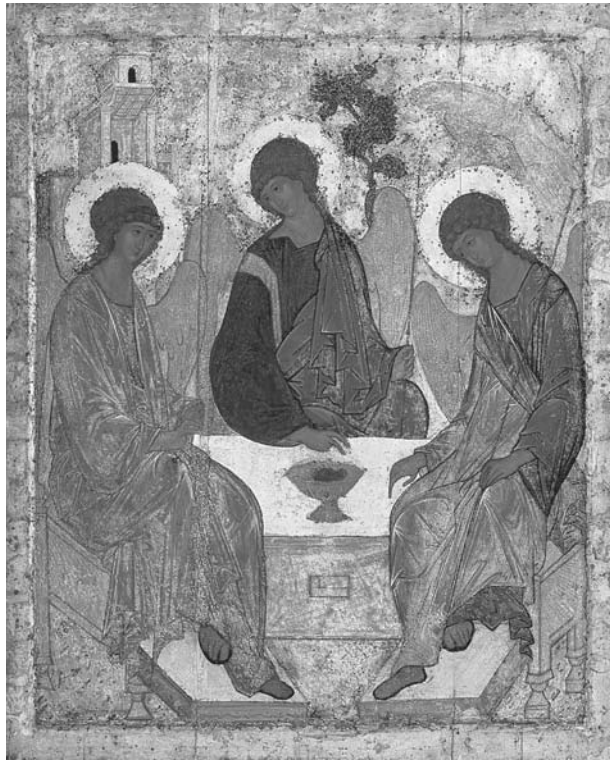
The Russian acceptance of Christianity from Orthodox Constantinople around 988 BCE determined the distinctive forms of Russian religious art—churches with cupolas, which later evolved into “onion” domes, and images of Christ, the Virgin Mary, and the saints. Icons, mosaics, and frescoes were windows to heaven, depicting holy persons in their transfigured state, beyond the boundaries of the natural world. Generally icons were unsigned, painted by a collective of artists as an act of worship. Such sacred art, protected from radical innovation by theology, dominated Russian culture for centuries.

Russian icon painters were no doubt inspired by the legendary *Virgin of Vladimir*, a tempera painting brought from Constantinople to Kiev in the twelfth century. It was moved later to the new capital of



Unknown, *Virgin of Vladimir*. Egg tempera on wood. An inspiration to Russian icon painters for its human appeal, the painting was brought from Constantinople to Kiev in the twelfth century.

Vladimir, then to Moscow in 1365, and, because it was reputed to protect those who lived in the city where it was displayed, it remains one of Russia's most revered holy images. More humanized than



Andrei Rublev, *Old Testament Trinity* (c. 1420s). Tempera on wood. The painting depicts three Angels who visited Abraham at the Oak of Mamre; by omitting other figures involved in the biblical narrative, Rublev emphasizes the triune nature of God.

many icons of the Byzantine era, the Mother and Child are shown touching cheeks and gazing tenderly at each other. Russia's most famous icon painter was Andrei Rublev (c. 1360–1430). In his remarkable tempera panel called *Old Testament Trinity* (*Three Angels Visiting Abraham*, c. 1420s?), the angels are harmoniously composed so that their figures form a circle echoed in the shape of their halos.

The Mongol invasion (1237–1240) and occupation, which lasted until 1480, limited Russia's contacts with Western culture without radically influencing its Christian art, although Oriental influences can be detected in applied and decorative art. From the 1470s through the 1490s Italian architects constructed many buildings in Moscow's Kremlin, but the secular art of the Renaissance made little impact. No realistic likeness survives even of Ivan the Terrible (Ivan IV, reigned 1533–1584), although he and other Russian rulers appear in idealized form in religious art.

The seventeenth century is known as an age of transition in Russian culture. Influences entered from Ukraine, annexed to Russia in the 1650s, and from Belarus, both of which, as part of Poland, had experienced Catholic Baroque culture. The ornate style of the later seventeenth century is sometimes known as Moscow Baroque. Some Western European artists and craftsmen entered the czars' service, working in the Kremlin studios, where they contributed to the production of the first stylized portraits of Russian rulers and nobles. The icon *The Tree of the Muscovite State* (1668) by the Moscow artist Simon Ushakov (1626–1686) contains a small portrait of Czar Alexis I (reigned 1645–1676). Ushakov incorporated elements of Western perspective and lighting effects into this and other icons. Alexis's daughter Sophia (1657–1704) was perhaps the first Russian woman to have her portrait painted; generally the segregation of upper-class women from male society created strong resistance to female portraiture.

Eighteenth-Century Cultural Revolution

The modernizing czar Peter the Great (Peter I, reigned 1682–1725) brought radical changes to Russia and made the country a major European power. The showcase for Peter's cultural reforms was his new capital and "window on the West," Saint Petersburg, founded in 1703. Virtually all of Peter's chief artists and architects were foreigners. The Frenchman Louis Caravaque and the German Gottfried Tannhauer painted portraits and battle scenes and helped to train a new generation of Russian secular artists, including the former icon painter Ivan Nikitin (c. 1680–1742?).

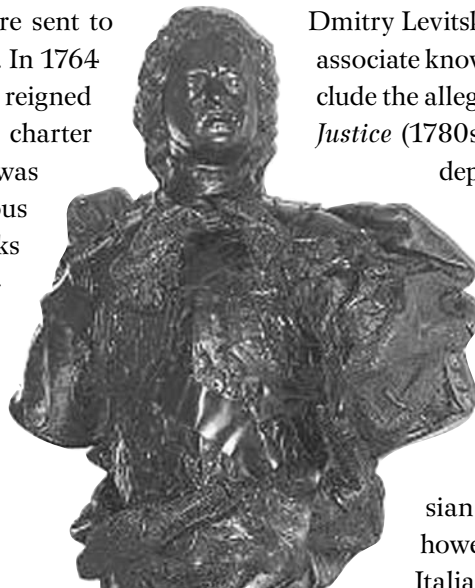
Nikitin himself became an iconic figure for a time. His bold and creative approach, which reputedly surpassed his foreign counterparts' unfeeling treatment of Russian subject matter, was especially evident in the expression of grief and loss in the deathbed portrait of Peter attributed to Nikitin, who in fact left behind only two signed canvases. Contemporary Russian art historians are now free to acknowledge and study the original foreign paintings (and their full

impact) inspired by Peter's patronage. Although Peter hired the Italian sculptor Carlo Rastrelli (1675?–1744), most famous for his controversial equestrian statue of the czar, Orthodox suspicion of “graven images” retarded the development of a Russian school of sculpture. After Peter's death his daughter Catherine thwarted the planned bronzing and prominent placement of the statue in front of the palace because of its Baroque qualities, but the work was eventually lauded for its likeness to Peter and for conveying character evocative of the epoch.

Peter's reign marked the beginning of an “era of apprenticeship,” when Russia mastered the conventions of Western art under the sponsorship of the imperial court and aristocracy. High art rarely penetrated into the peasant village, where culture retained traditional features. But the barrier between the Westernized upper classes and the peasantry was not impenetrable. Folk art assimilated Baroque and Classical decorations, while educated Russians collected *lubok* woodprints (popular prints often circulated as broadsides) and read folktales.

In 1757 the empress Elizabeth Petrovna (reigned 1741–1761) founded the Academy of Arts in Saint Petersburg. With a curriculum rooted in the study of classical history and classical models, it remained the unchallenged center for training Russian artists, architects, and sculptors until the mid-nineteenth century. Successful graduates were sent to France or Italy for further training. In 1764 Catherine the Great (Catherine II, reigned 1762–1796) issued the academy's charter of imperial patronage. Catherine was an avid collector, buying numerous paintings by old masters and works of applied art. One of the academy's first Russian professors of

The Baroque qualities of Carlo Rastrelli's bronze bust of Peter the Great were eventually praised for evoking the spirit of the man and his era. Collection of the Hermitage Museum.



Dmitry Levitsky, *Catherine the Great in the Temple of Justice* (1780s). Levitsky's portraits earned him the title “Russia's Gainsborough.” Collection of the Hermitage Museum.

painting was Anton Losenko (1737–1773), whose *Vladimir and Rogneda* (1770) was the first work on a theme from Russian history. The many portraits by Dmitry Levitsky (1735–1822), another academy associate known as “Russia's Gainsborough,” include the allegorical *Catherine II in the Temple of Justice* (1780s), seven canvases from the 1770s depicting Catherine's favorite students at the Smolny Institute for Noble Girls (a school she founded in 1764 to nurture and cultivate loyal subjects), and a number of “society portraits” that created an image of the aristocracy Levitsky's patrons hoped to emulate. The range of Russian subject matter was still limited, however. Aristocratic patrons preferred Italian and classical vistas to scenes of



Ilya Repin, *Barge Haulers on the Volga* (1873). Oil on canvas. A young blond man, symbol of Russia's new generation, rises among the exhausted peasants.

the Russian countryside or town. Serf artists trained in Western idioms were more likely to produce Russian scenes, such as *Portrait of an Unknown Woman in Russian Dress* (1784) by Ivan Argunov.

From Romanticism to Realism: 1800–1880

Napoleon's burning of Moscow in 1812 and the march on Paris by Alexander I (reigned 1801–1825) in 1814 aroused patriotic feelings about Russian culture; German Romantic ideas about national "spirit" (*geist*) further stimulated a search for Russian themes, as did the slogan of "Orthodoxy, Autocracy, and Nationality" propagated by Nicholas I (reigned 1825–1855). The portrait of Alexander Pushkin (1827) by Orest Kiprensky (1782–1836), which depicted Russia's national poet inspired by his muse, celebrated the literary life, while portraits of serfs at "home" on the land, produced in the 1830s by their noble master (and painting teacher) Aleksii Venetsianov, seemed simultaneously to support Russia's existing ideology and set the stage for the Realist movement to come. Still, many artists with royal patronage studied and painted

classical scenes in Europe; *The Last Days of Pompeii* by Karl Briullov (1799–1852) was the first such Russian painting to receive international acclaim. Some of these academic painters could incorporate a Russian nationalistic message into works done abroad, as did Alexander Ivanov (1806–1858); his biblical scene, *The Appearance of Christ to the People* (1837–1857), prefigured what Ivanov believed to be the Russians' destiny as God's chosen people.

The middle of the century saw a significant shift in Russian painting as younger artists forsook many of the approved themes of the royal academy. A decisive event came in 1863 when a group of fourteen students walked out of the Academy of Arts, turned their backs on its royal patronage, and began to paint realistic scenes of everyday Russian life that were often infused with strong overtones of social protest. (Just two years earlier Alexander II (reigned 1855–1881) had freed 22.5 million serfs from private ownership, and the general feeling of emancipation that ensued allowed artists to approach painting as a vehicle for social criticism.) Under the leadership of Ivan Kramskoi (1837–1887), the group established the Society for Traveling (Itinerant) Art Exhibitions

to show their independent works in towns and cities away from the capital. Soon dubbed the Wanderers (*Peredvizhniki*), they continued to express the critical progressive spirit of the age of reform under Alexander II, appealing both to disaffected intellectuals and the rising Russian bourgeoisie. In fact it was wealthy new industrialists, such as the Moscow-based Pavel Tretiakov (1832–1898) who bought their paintings, thus creating the first art market in Russia and breaking artists' dependence on royal and aristocratic patronage.

The strong social commentary in their work and its exclusively Russian content appealed to both liberal political thinkers and Russian nationalists. Perhaps the most famous of these paintings from the age of reform is *Barge Haulers on the Volga* (1870–1873, also known as *The Volga Boatmen*) by Ilya Repin (1844–1930). The painting, with its line of peasants exhausted from brutal work—all of them ragged and aged except for the young blond man rising up in their midst—embodied the suffering of the Russian people while it conveyed the hopes for a generation of youth awakening to the need for change and reform. Other Wanderers' paintings, such as *Easter Procession* (1861) by Vasily Perov (1833–1882), criticized the cruelty or corruption of both the religious and political establishment. But there was another side to the Wanderers' work. Their ultrarealistic paintings

had a strong nationalistic appeal, as in the quintessentially Russian landscapes of Isaak Levitan (1860–1900) and the more chauvinistic, sweeping historical panoramas of Vasily Surikov (1848–1916). Surikov's *General Suvorov Crossing the Alps* (1900) depicts a scene from the Napoleonic wars, while his *Yermak's Conquest of Siberia* (1895), with musket-wielding Cossacks slaughtering arrow-shooting natives, more directly relates to Russia's imperialistic expansion. In fact, by the end of the century, the Wanderers and their realistic style were no longer critical of the czarist order and had been appropriated as a national school of painting.

The Birth of Modern Russian Art

The radical impulse in Russian art, both stylistically and politically, would come from a very different direction. Again the artistic stimulus originated in Europe and the patronage from Russia's new bourgeoisie. Prominent among such benefactors was the merchant-industrialist Saava Mamontov (1841–1918) whose artists' colony on his estate north of Moscow became a cradle for modern Russian art. Among those who gathered there in the 1880s and 1890s were Vasily Polenov (1844–1927), a pioneer of Russian *plein air* painting; Konstantin Korovin (1861–1939), "Russia's first Impressionist"; and Mikhail Vrubel, whose

Mikhail Vrubel, *Demon Seated* (1890). Oil on canvas. Vrubel's fragmented brushwork prefigures Cubism.





Vladimir Tatlin, *Monument to the Third International* (1919–1920). Had the monument actually been built—this model is one-tenth the size of the proposed structure—it would have surpassed the Eiffel Tower as an architectural symbol of modernity.

fragmented brushwork in *Demon Seated* (1890) prefigured Cubism while his play of light on water in works such as *Swan Princess* resembled Impressionism.

Vrubel was the most obvious connection between these late-nineteenth-century innovators and the more radically modern avant-garde that arose in the years before World War I, but this blossoming of the new had an organizational headquarters in the Saint Petersburg-based World of Art group (Mir iskusstva), which incorporated figures from the performing arts such as the ballet impresario Sergey Diaghilev. Set and costume designs for Ballets Russes, which took Europe by storm after its opening in 1909, drew heavily on those inspired by World of Art aesthetics, and thus established a precedent for the close association

of visual and performing arts in the Russian avant-garde of the 1910s and 1920s.

World of Art's dissemination of works by Cezanne, Gauguin, van Gogh, and others, as well as purchases of modern Western art by entrepreneur collectors, paved the way for Russia's own prominence in the avant-garde. In the first two decades of the twentieth century as new art movements swept Europe, Russian artists, often after a spell in Paris or Berlin, made their own original contributions. Pavel Kuznetsov (1879–1968), for example, promoted Symbolism with his tempera painting *Blue Fountain* (1905), in which shadowy figures hover near a fountain—symbolic of life—set against a backdrop of green-blue foliage. The Russian avant-garde was showcased in a series of radically stylized exhibitions such as *Blue Rose* (1907), *Knave of Diamonds* (1910), *Donkey's Tail* (1912), and *Target* (1913). Typically, as in other moments of Russian history, the strong connections with Europe in the early twentieth century provoked assertions of Russian identity.

Mikhail Larionov (1881–1964) and Natalia Goncharova (1881–1962) declared that Western art had nothing to teach Russia. These and other artists found inspiration for their neo-Primitivist works in peasant villages, among city low life, and in icons, *lubok* prints, signboards, and painted toys. The most innovative was Kazimir Malevich (1878–1935), who painted his way through Impressionism, Primitivism, and Cubo-Futurism, the latter being a fusion of French Cubism and Italian Futurism. (His *Knifegrinder* of 1912 is an example of how Cubo-Futurism's systematic and tubular geometric patterns, as well as the diagonal tilt of those forms in the picture plane, give the illusion of three dimensions.) In what Malevich called an attempt to free art from the “ballast” of objectivity he founded Suprematism, a style heralded by the exhibition of his seminal *Black Square*, the “zero of form,” at the “0.10” exhibition in 1915. It signified a landmark in the evolution of Western Art—from reproduction of natural forms to pure abstraction—but other Russians were also in the forefront of experiments with abstraction. In Germany, Wassily Kandinsky (1866–1944) was independently pursuing his own experiments in the



reduction of figurative elements and expressiveness of colors and shapes (*Improvisations*, 1910–1920). In fact, seldom in world art has there been such an explosion of innovation as in the last few years of czarism in Russia. The artistic radicals were not politically active, but they fully shared the Bolsheviks' eagerness to sweep out the old in favor of the new.

Russian Revolution and Soviet Art: 1917–1953

After the Bolshevik coup of October 1917, avant-garde artists rushed to assume the artistic leadership of revolutionary Russia. Some artists who would later leave the Soviet Union to become major figures in modern art in the West, notably Kandinsky and Marc Chagall, eagerly served the new revolutionary government. From 1917 well into the 1920s a gamut of artistic credos and styles coexisted, as the Bolsheviks had no blueprint for the arts but welcomed all who served the cause. Lenin was no avant-gardist and opposed radical appeals to eliminate all “bourgeois” art, but he was glad to have the enthusiastic efforts of avant-garde artists in creating “agit-prop” art—posters, political cartoons, billboards, and designs for mass parades and political celebrations, all of which fused abstract and figurative design.

The project that best represents this brief, passionate embrace of political and artistic radicalism is the *Monument to the Third International* (1919–1920) by Vladimir Tatlin, a leading member of the Constructivists. This group of artists believed that “fine art” was dead: artistic endeavors should employ modern, real-life materials—and preferably have real-life applications—in building, furniture design, clothing, theater sets, and costumes. Tatlin’s “monument,” never existing except in sketches and as a model one-tenth the scale of its intended size, was to have been a building of futuristic design: a 1,300-foot-high spiral tower of steel and glass with revolving parts that would span the Moscow River, house the headquarters of the international Communist Party (Comintern)—and surpass the existing architectural symbol of modernity, the Eiffel Tower.

Given the technology of the time and the poverty of war-torn Russia, it was totally impractical—a dream project for a future that never was.

Other real-life Constructivist projects did materialize in the new society. Women artists had been prominent in the early stages of the Russian avant-garde and some of them, such as Varvara Stepanova (1894–1958) and Liubov Popova (1889–1924), became leaders in futuristic fashion design for the new society. The application of photography to graphic design and poster art was more directly useful to the new regime; innovators like Alexander Rodchenko (1891–1956) and El Lissitzky (1890–1941) were successful pioneers in the art of photomontage.

But the avant-garde ascendancy was short-lived. By the late 1920s it was increasingly being accused of “inaccessibility,” its “decadent” Western features contrasted with the “progressive” Realist art of the first workers’ state. With the consolidation of the one-party state under Joseph Stalin and the completion of the first phases of industrialization and collectivization, a monolithic artistic establishment emerged. In 1934, Socialist Realism was launched at the first Congress of Soviet Writers. Andrei Zhdanov (1896–1948) summoned writers and artists to depict “reality in its revolutionary development” and to provide “a glimpse of tomorrow.” Socialist Realist works were supposed to inspire by embodying qualities of popular accessibility, Party spirit, ideological content, and “typicality.” (In the 1950s Soviet Socialist Realism would influence the state of “revolutionary” art in the People’s Republic of China under Mao Zedong.) Among the best early exponents of Soviet Socialist Realism were Alexander Samokhvalov (1894–1971), who used sport and physical culture as metaphors for progress, and Alexander Deineka (1899–1969), who produced bold monumental paintings on labor themes. Another classic of Socialist Realism was *Collective Farm Festival* (1937) by Sergei Gerasimov (1885–1964), whose “glimpse of tomorrow” reveals happy, healthy workers presiding over tables groaning with festive fare. In sculpture the colossal *Worker and Collective Farm Woman* (1937) by Vera Mukhina (1889–1953), which pairs a male factory worker and



Sergei Gerasimov, *Collective Farm Festival* (1937). The painting exemplifies the Socialist Realism movement and its revolutionary message.

a female farm laborer holding aloft a hammer and sickle, the tools of their respective trades, became an icon of the USSR. During World War II Russian art remained Socialist Realist in style—modernism was still prohibited—but changed to become nationalist in content as artists depicted heroic war heroes and struggling partisans.

From the Thaw to the Fall—and Beyond

With Stalin's death in 1953 and Nikita Khrushchev's de-Stalinization came a thaw in the arts; artists were allowed more scope for private themes and individual expression, but the government's focus was still on positive portrayals of "real" Soviet life. Khrushchev himself famously denounced abstract art. In the 1960s and 1970s some artists tested the boundaries of official art by expanding the subject matter of Realism

or by experimenting with modernist styles. The authorities quickly closed independent exhibitions, most blatantly by bulldozing an open-air art show in 1974. Many artists left the USSR for the West, while others, though disaffected with Socialist Realism, turned their backs on the West. Ilya Glazunov (b. 1930), for example, explored the pre-Revolutionary, Orthodox past in *Eternal Russia* (1988), a panoramic "group portrait" of iconic figures, both sacred and secular, who shaped one hundred centuries of Russian history.

In the era of glasnost and perestroika nonconformist artists such as Eric Bulatov (b. 1933), Ilya Kabakov (b. 1933), and Anatoly Zverev (b. 1931) were able to operate more openly, mocking the socialist artistic and political system with conceptual and installation art as well as painting and graphics. Since the fall of the USSR in 1991, pluralism has been the watchword of the "second avant-garde," embracing

irreverent pastiches of Socialist Realism and Soviet symbols, religious themes, abstraction, grotesquerie, nostalgia, eroticism and kitsch, pop art, and video and installation art—all the banned styles and subjects from the Soviet years.

The late 1990s and early 2000s have seen the virtual elimination of censorship, the opening of commercial outlets for sales and exhibitions, a buoyant market for Russian art, both in Russia and abroad, and a flood of Russian publications on previously neglected topics such as the pre-Revolutionary avant-garde and religious painting. Russian artists actively engage in the international art world but still in dynamic tension with their Russian heritage, both recent and traditional.

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Art—South Asia

Unlike other cultures with a high degree of technological skill, the second-millennium BCE Indus-Sarasvati civilization in South Asia has left no evidence of monumental sculpture and architecture. Such large-scale grandeur, however, would later characterize the area—from great Buddhist stupas to the Taj Mahal. Architecture and painting embodied religious influences throughout history, especially Hindu and Islamic, and today exhibit contemporary secular expressions as well.

The cultural beliefs, ideas, and practices that find visual expression in the art of South Asia—which includes the present-day nations of India, Pakistan, Afghanistan, Bangladesh, Nepal, and Sri Lanka—have had a formative influence on the rest of Asia and continue to provide important paradigms of being and becoming in modern world culture.

Sculpture

The beginnings of South Asian sculpture may be found in the early Indus-Sarasvati civilization (present-day northwestern India and eastern Pakistan) of the second millennium BCE. The mature phase of this civilization (2500–1700 BCE) carries evidence of a high level of technical knowledge and skill but, curiously, a lack of monumental sculpture or large structures such as temples or palaces. From its ruins, archaeologists have recovered small figurines in stone or cast bronze or copper, as well as terracotta animals and female figurines, the last presumed to be cultic objects. Archaeologists have also found a large number of steatite seals with impressions of bovine unicorns, buffaloes, bulls,

tigers, rhinoceros, and other composite animal figures, as well as some enigmatic human forms, surmised to have had either commercial or ritual uses (or both).

Mauryan Sculpture, c. 324–c. 200 BCE

Little material evidence has been found between the Indus-Sarasvati period and the imperial Mauryan remains of the third century BCE. The reasons for this absence are unclear, but perhaps attributable to the use of perishable construction materials and prohibitions against material representations or portrayals of deities and/or their alternatives. Vedic ritual culture is presumed to have established itself around 1500 BCE, followed by the contemplative esotericism of the Upanishads around 800 BCE and the birth of Buddhism and Jainism in the sixth century BCE.

In 326 BCE, the incursion of Alexander of Macedon (Alexander the Great) into the northwest border of the South Asian subcontinent, as part of his conquest in 330 BCE of the extensive Persian Achaemenid Empire of Darius III, created a political vacuum that was swiftly filled by the first Mauryan king, Chandragupta (reigned c. 321–297 BCE). Chandragupta's imperial ambitions were styled after Darius and Alexander, and scholars attribute his successor Asoka (reigned c. 273–232 BCE) with the Persian practice of building stone monuments, as well as with incorporating Achaemenid and Hellenistic motifs and devices in structures. In 265 BCE Asoka embraced Buddhism and proceeded to mark numerous prominent pilgrimage routes and Buddhist centers through his vast empire with tall polished stone pillars inscribed with edicts expounding the Buddhist law. Though this practice and the literary style of the inscribed proclamations

are reminiscent of an Achaemenid method used to establish the law of the emperor, they also extend to an ancient indigenous Vedic tradition, the cosmic pillar. Achaemenid and Hellenistic decorative motifs, such as rosettes, palmettes, spirals, and reel-and-bead patterns appear on these pillars and on other structural remains from Asoka's time, attesting to the cosmopolitan nature of his court and its culture.

Other monuments attributed to Asoka's patronage include Buddhist stupas (relic-mounds) and rock-cut caves, both of which became important settings for sculpture for a thousand or more years. Asokan monuments were created in sandstone and finished to a high polish, a technique that was lost to South Asia after Mauryan times.

A number of massive, frontal stone sculptures depicting male and female figures also remain from Mauryan times. These are representations of *yakshas* and *yakshinis*, supernatural elementals that had been popular in propitiatory worship for protection, fertility, or wealth. These beings and the gods of the Vedic pantheon became assimilated into early Buddhism and soon reappeared iconically as Buddhist threshold deities, protectors of devotees, bestowers of auspiciousness, and servants of the Buddha.

Sculpture during the Shunga Dynasty, c. 185–73 BCE

The Mauryan dynasty lasted for barely fifty years after the death of Asoka and was followed by the Brahminical Shunga dynasty in northern South Asia. Buddhist lay patronage, however, had developed a strong foundation, and monastic monuments continued to flourish during the second century BCE. Typical examples of the sculpture of this period are found among the remains of the stupa of Bharhut. The circular stone railing (*vedika*) enclosing the stupa has carved roundels on its horizontal and vertical components, often elaborated into ornate lotuses. Some of these roundels have carvings of human heads or animals at their center and some are filled in with narrative scenes from the life of the Buddha or episodes from tales of his past lives. At this stage, Buddha's

figure is never depicted; instead we see symbols such as the Bodhi tree (under which the Buddha attained enlightenment), the Wheel of the Law, or a stupa, according to narrative context. The relief carving is shallow and frontal and harks back to a tradition in wood. On the vertical entrance-posts of the *vedika* are chiseled large figures of *yakshas* and *yakshinis*, standing on animal or dwarf mounts.

This post-Mauryan Buddhist relief tradition reached its full maturity around the first century BCE, as evidenced in the gateways (*torana*) of the Great Stupa at Sanchi. This stupa, at the center of a monastic complex, was established by Asoka and further enlarged during Shunga times. Around 100 BCE, during the reign of the Satavahanas, four great gateways were erected at the cardinal entrances to this stupa. The horizontal and vertical elements of these gateways carry carvings thematically similar to those at Bharhut. These carvings demonstrate much greater technical assurance, however; the narrative arrangements, particularly on the extended horizontal architraves, show a refined clarity of form, a varied mobility of posture, and a judicious use of devices to enhance sense of depth where necessary. Large and powerful figures of elephants, lions, or dwarfs are carved out deeply on the vertical pillars and seem to support the upper portions. But perhaps the most perfect realizations on these gates are the *shalabhanjikas*, fertility symbols in the form of voluptuous women posed seductively, the rhythmic swing of their forms clinging to fruiting tree branches. The perfect combination of ecstatic sensuousness and contemplative repose in these figures became one of the aesthetic ideals of South Asian sculpture, seeking fulfillment in different forms through history.

Sculpture during the Kushan Dynasty, 78–200 CE

Around the beginning of the Christian era, the Kushan dynasty, originating in the borderlands of Central Asia and China, established itself as the imperial power in northern South Asia. The most famous king of this dynasty was Kanishka (reigned 78–101 CE). Around this time the first figural depictions of the Buddha



make their appearance, almost simultaneously in the northwest province of Gandhara and the Gangetic metropolis of Mathura. Reasons for this iconic appearance are unknown, but may be related to doctrinal shifts in Buddhism from the more austere Theravada Buddhism toward the devotionism of Mahayana Buddhism. Both the Gandhara and Mathura Buddha images express a consistent iconography, though they are stylistically divergent. The Gandhara Buddha is modeled after a Greco-Roman Apollonian prototype, while the Mathura figure derives from indigenous *yaksha* traditions. In both cases, the Buddha is draped in monastic robes, has a halo behind his head and a whorl of hair between the eyebrows (*urna*), and is shown with a cranial protuberance (*ushnisha*) symbolizing transcendental knowledge. He is either seated in meditation or standing erect with his right hand raised in a gesture of bestowing fearlessness.

Whereas predominant naturalism marks the features and costuming of the Gandhara figure, simplified rounded features, see-through draping, monumentality, and physical tension projecting power distinguish the Mathura image. Bodhisattva figures in the characteristic styles of Gandhara and Mathura also appeared at this time, wearing regal accoutrements and, in the case of named and worshipped bodhisattvas, carrying their distinctive attributes. The Kushan period also yields the earliest Brahmanical images in stone, representing the three major cults of Hindu worship—those devoted to Siva, Vishnu, and the Mother Goddess, particularly in her form as Durga, the destroyer of evil. Other prominent Brahmanical deities represented include Surya and Skanda.

Sculpture under the Guptas, (c. 320–c. 500)

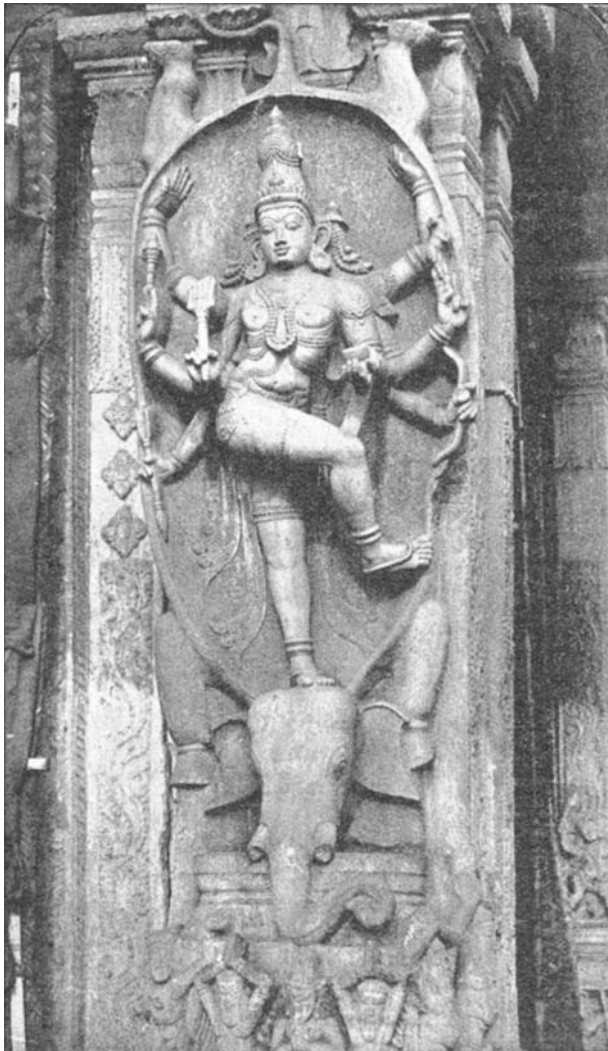
During the fourth century, a new Hindu imperial dynasty established itself in northern South Asia, whose reign, patronage, and courtly culture are credited with the development of the classical style in South Asian art. This was the Gupta dynasty, whose most famous king was Candragupta II (reigned 375–415 CE). During this period, the major center for the production of

Buddha images in the east shifted from Mathura to Sarnath. Idealized soft modeling and self-absorbed, tranquil features characterize the style of this period, which replaced the Kushan Buddhas. Standardized and compacted iconic elements and a vocabulary of distinctive hand gestures (*mudras*), meant to mark special occasions, accompanies these images. Others figures in the Buddhist pantheon undergo a similar elaboration and stylistic change, and the Buddha and several bodhisattvas also appear in bronze casts.

During this period relief sculptures draw upon a proliferation of Hindu deities, organized spatially in integrated contexts of ritual worship. Initially, these works were sited in niches inside cave-temples, but the stand-alone Hindu temple in stone also evolved at this time and henceforth became the setting for sculpture. Because the Guptas were followers of Vishnu, images of this deity and his incarnations (*avatars*), were frequently represented, and an increased emphasis on goddesses and other female images is apparent in the works.

A developed Saivite iconography, depicting mythical episodes connected with Siva and his consort, Parvati, also found expression at sites of cultic worship. Saivite cultic placement consigns the abstract phallic icon of Siva (the *lingam*) to the sanctum, faced from the entrance of the temple by Siva's mount, the bull Nandi, and surrounded along a clockwise circumambulatory path by niches carrying other gods and goddesses and scenes showing the pastimes of Siva.

By the end of the fifth century, all these figures evolved into an aesthetic that shared the monumental repose of the Gupta Buddha but integrated it with a power of massiveness and restrained ecstatic delight. Contemporaneously, in the Deccan (central India), a related but more voluptuous aesthetic developed in Buddhist and Hindu figural expression, under the patronage of the powerful Vakatakas, related by marriage to the Guptas. Examples of the full fruition of the Vakataka Buddhist style are visible at the cave excavations at Ajanta in southern central India, while the early excavations at nearby Ellora or at the island of Elephanta, dateable to the early sixth century,



The stone carving of the god Vishnu adorns the interior wall of a Hindu temple in India.

show examples of Deccan Saivite sculpture of this period at its ripeness.

Developments in Sculpture, Sixth to Twelfth Centuries

Though the stand-alone Hindu stone temple first appeared in South Asia under the Guptas, it evolved into maturity in the sixth century under the Western Calukya dynasty (543–757; c. 975–c. 1189) in the southern Deccan, and through the seventh century in southern India under the Pallavas (c. 550–728 CE).

Sculpture during this period continued to develop local variants of the Gupta iconography and style, but in these southern centers so did a marked tendency toward a greater plastic dynamism in the figures. A fine example of this may be observed in a panel from seventh-century Pallava Mamallapuram depicting Durga battling the buffalo demon. Here the dramatic interest and the portrayal of power in motion replaces the iconic stillness and massiveness of Gupta deities. Subsequent sculpture in southern India continues to develop in fluidity, reaching perhaps the zenith of integrating stillness and movement in the tenth-century image of the dancing Siva, Nataraja, which was developed in South India under Cola patronage.

From the tenth to the twelfth century, South Asian sculptors evolved such a consummate skill and facility in carving that sculpture during this period spills out of the measured enclosure of niches and dominates the temple surface. The temple as an integral whole projects the impression of the mighty, immobile, cosmic Mount Meru, which contains the multitudinous, varied activity of the world at its base. The sculpted forms of deities and celestial denizens stand or interact in various fluid postures, expressing the ecstatic repose of transcendental action. In the case of the temples at Orissa and Khajuraho in eastern and central India, respectively, a strong erotic element also found expression, indicating the prominent presence of Tantric cults. This high achievement of the successful marriage of static soaring temple forms and teeming mobile surfaces marked the final creative outburst of the South Asian tradition in sculpture.

Buddhism disappeared from India by the thirteenth century and gradual Islamic dominance of northern South Asia from the twelfth century inhibited the production of large-scale Hindu temple complexes. The Vijayanagara kingdom of the south and other pockets that offered resistance to Muslim conquest managed to continue the tradition until the sixteenth and seventeenth century, but with a progressive diminution of creativity.

Islamic architecture brought a new visual language of domes, arches, and minarets to the South

Asian building environment and found expression in mosques, tombs, and forts. Marrying Afghan and Turkish styles with the Indic skill in stone carving, it left its most prominent marks in the cities of north central India and to some extent in the Deccan region, from the twelfth to the nineteenth century. Eschewing figurative sculpture due to religious prohibition, this architecture nevertheless gives us the most exquisite carved, inlaid, and latticed surfaces with calligraphy, foliate patters, and intricate geometric designs.

Under Mughal rule (1526–1857 CE), Islamic architecture reached its greatest heights in the sixteenth and seventeenth centuries. The gates, halls, pavilions, mosques, and tombs commissioned by the third Mughal emperor, Akbar (1543–1605), at Agra and Fatehpur Skiri can be seen as precursors to the legendary beauty of the Taj Mahal, built by Shah Jehan (1592–1666) in Agra as a tomb for one of his wives, Mumtaz. Placed at the far end of a garden, the Taj's soaring dome and minarets in white marble, combined with the majestic simplicity of its design and the perfection of its proportions, evoke a supernatural archetype. Close up, its massive white marble surface reveals colorful borders with flowers, leaves, and Qur'anic calligraphy inlaid using a *pietra dura* (relief mosaic with semiprecious stones) technique.

After 1857, most of South Asia was brought under the British crown as a colony of Great Britain. The colonial period, leading up to the division and political independence of India and Pakistan in 1947, was known for its imperial Victorian architecture, particularly in the major colonial centers of Calcutta (Kolkata), Bombay (Mumbai), Madras, and Delhi. Following independence, both India and Pakistan have entered into the mainstream of a global modernity, where international functional concerns mix with national and regional identity issues in fashioning a contemporary South Asian architecture.

Painting

The earliest remaining examples of painting in South Asia are Buddhist cave murals such as those in the monasteries at Ajanta. Here, two phases of painting,

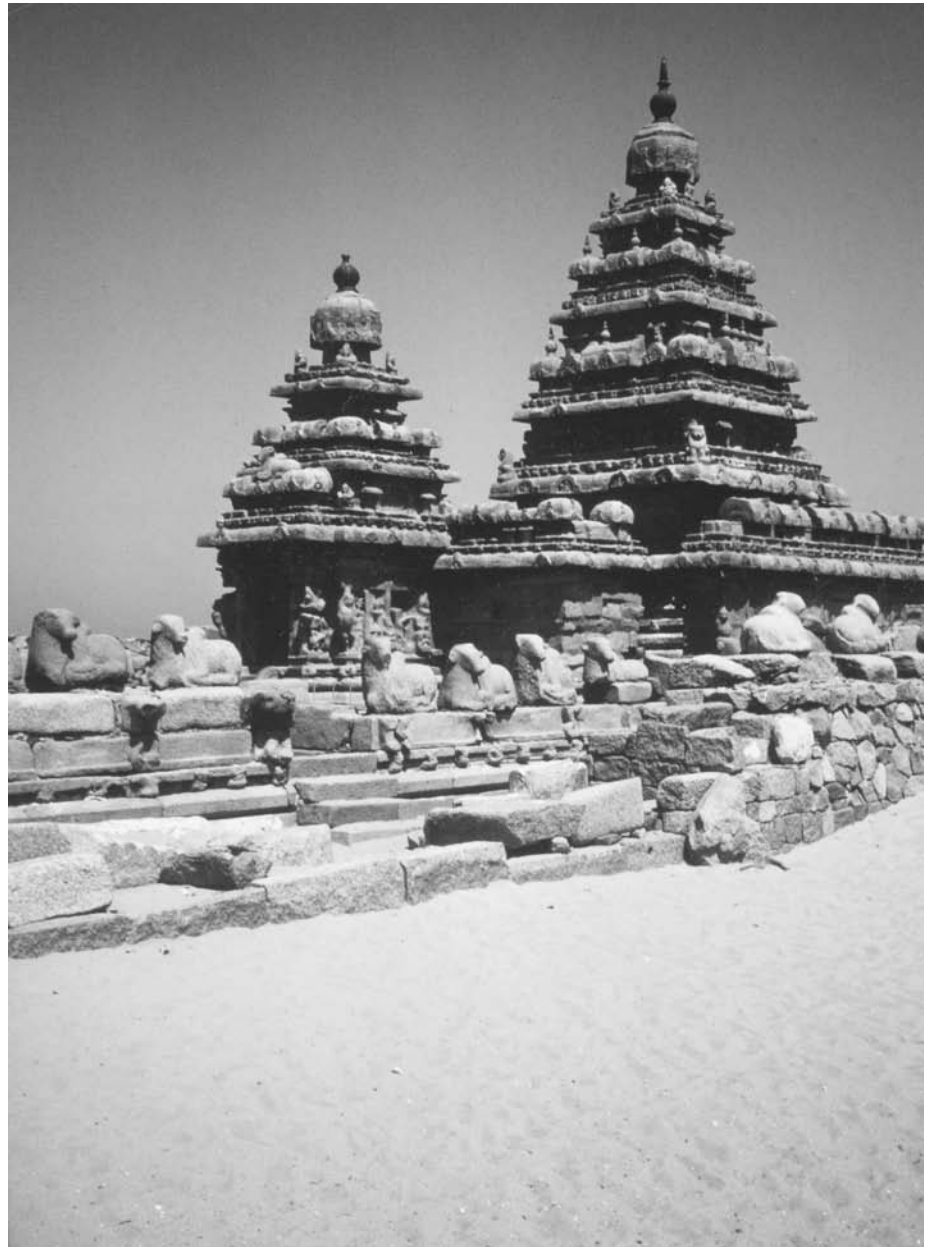
corresponding to two phases of excavation, may be distinguished, the earlier being from the first century BCE and the later from the fifth century CE. The themes depict stories and scenes, mainly from the life of the Buddha. The murals are made with mineral colors on a specially plastered surface and, particularly in the later phase, are characterized by hieratic scaling (more important figures are bigger), Buddha and bodhisattvas shown in formal poses and with stylized physiognomy, and others depicted more realistically. Elements of three-dimensional modeling and perspective are mixed in with two-dimensional "flat" figuring, to introduce a semblance of realism in representations where narrative interest clearly takes precedence over natural illusion.

Early Manuscripts

In painting, following Ajanta of the Vakataka period, few other fragmentary murals in cave or temple settings remain. The earliest surviving manuscript paintings are eleventh-century illustrated Buddhist and Jaina palm-leaf manuscripts of religious texts. These texts were venerated as sacred objects and offered as religious donations by patrons.

Extant eleventh- and twelfth-century Buddhist palm-leaf manuscripts come largely from regions in eastern India and often have generic scenes from the life of the Buddha painted on the inner surfaces of the wooden boards that bind the palm leaves; such scenes also serve as dividing elements between segments of text. The images are iconic and seldom directly related to the text. Hieratic scaling and static figural postures executed using a rhythmic outline and filled in with flat opaque mineral colors characterize the painting style.

The Jaina manuscripts were mostly produced in the Gujarat region of western India. By the last quarter of the fourteenth century, paper had become the preferred medium for Jaina manuscripts, and a rectangular form more suited to larger illustrations gradually replaced the elongated palm-leaf format. Jaina manuscripts make use of a restricted and bold color scheme and rhythmically outlined, flattened figures,



The Hindu Shore Temple at Mahabalipuram, India, displays many features of South Asian monumental sculpture and ornamentation. Photo by Klaus Klostermaier.

as in the Buddhist tradition. There is no attempt to depict spatial depth. A characteristic of the figures is their invariable presentation in profile with the eye on the invisible side of the face protruded into visibility.

The oldest extant illustrated Hindu manuscripts date to the second half of the fifteenth century and follow the conventions of Jaina painting. Hindu myths and epics had by this time become standardized and

pervasive in popular South Asian culture, and episodic representations of these themes found expression in these illustrations. From the early sixteenth century, a bold shift appears in this tradition, prioritizing the image over the text. The by-then standard rectangular form of the page was mostly occupied by the pictorial representation, with an abbreviated textual description in the upper margin and the extended

text on the obverse of the page. This tradition made its appearance in Rajasthan and the western Gangetic kingdoms of northern India and is presumed to have originated in royal and other wealthy patronage. The contemporaneous rising popularity of medieval Vaishnavism (worship of Vishnu), with its use of an erotic symbology to describe the mystical pastimes of Krishna (Vishnu's most famous incarnation) must have played its part in fueling this production. The incorporation of a Vaishnav mystical context into literary and courtly amorous narratives characterizes this painting tradition and initiated a thematic stream that continued through the history of South Asian painting. Though these paintings attempt to convey spatial depth, they are essentially flat, with stylized figures shown in static profile, making hieratic gestures in starkly simplified color planes. This painterly aesthetic, commonly known as the "Rajput style," remained a viable South Asian idiom of painting throughout subsequent centuries, resurfacing in various times and places.

Mughal Painting, 1526–1857

The sixteenth century also witnessed the hegemonic rule of the Mughals in northern South Asia, resulting in a new school of painting, unsurprisingly and commonly known as Mughal painting. The initiation of this school occurred in the mid-sixteenth century during the rule of the second Mughal emperor, Humayun (reigned 1530–1540 and 1555–1556). Humayan brought two master painters from the court of Tabriz—Abdus Samad and Mir Sayyid Ali—to found his atelier at Delhi in 1555. Within a year, Humayun died and was succeeded by his son, Akbar (reigned 1556–1605). Akbar had an abiding passion for the arts of painting and storytelling and quickly built up his father's atelier to illustrate a large number of Persian and Hindu secular and religious texts. Akbar's earliest commission was the illustration of the *Tutinama* (Tales of the Parrot). A large number of artists recruited from existing South Asian painting traditions worked under the direction of the Persian masters, resulting in a hybrid style and aesthetic which, by the time of

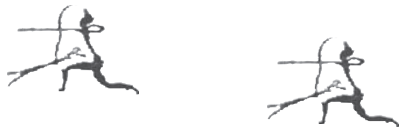
Akbar's second commission, had developed a distinctive identity. Mixed perspective, structured visibility of interiors, and natural elements such as mountains and trees are taken from Persian prototypes; hieratic patterning, bold coloring, and narrative arrangements are reminiscent of indigenous traditions; uniquely new with the early Mughal painting style were a patterned variety of coloring, a judicious introduction of three-dimensional modeling, and a crowded swirl of highly individualized figure-types laid out in a space divided by forms from nature (such as trees or rocks) to give an added sense of depth.

From the mid-sixteenth century, the influence of Renaissance naturalism, introduced into Akbar's court by Jesuits, began to gain prominence in the works produced in his atelier. Space and volume were defined by light and shade. Aerial perspective was introduced, as were atmospheric effects to depict spatial recession.

These techniques continued to gain prominence in paintings from the courts of Akbar's successors. The Mughal atelier remained as prolific under Akbar's son, Jahangir (reigned 1605–1627), though the thematic interest shifted from dynamic narrative episodes to carefully attentive portraiture, scenes of psychological interest, and detailed though stylized studies of flowers and animals. A number of superb allegorical portraits of the emperor come to us from this court. Though the Mughal atelier continued during the reign of Jahangir's son and successor, Shah Jahan (reigned 1628–1658), it seemed to have lost its vitality and inventiveness. The paintings of this period are marked by a courtly stiffness and formalism and lack the boldness of color or composition of either Rajput paintings or earlier Mughal work. The Mughal atelier largely dispersed during the reign of the Islamic puritan Aurangzeb (reigned 1658–1707), son and successor of Shah Jahan.

Seventeenth- and Eighteenth-Century Developments

In the Deccan kingdoms of central India, small Islamic states had established themselves since the



fourteenth century and developed independent cultural traditions. Among these, the most important were the kingdoms of Golconda and Bijapur, which remained independent until late in the Aurangzeb's reign. With cultural roots in Persia and Turkey, these kingdoms developed their own painting traditions, known as the Deccani style, marked by a rich coloration dominated by lavender, gold, and green, a jeweler's eye for decorative pattern, and mystical or fantastic stylizations.

From Akbar's time, a number of the Rajput courts came under the suzerainty of the Mughals, developing close courtly liaisons. Mughal stylistic influences began appearing in the paintings of a number of these courts. In the late seventeenth century, after the dispersal of artists from Aurangzeb's court, further assimilation of Mughal thematic and stylistic idioms continued in the Hindu Rajput states. Here, the earlier predominance of Hindu religious themes was complemented by formalized portraiture of the maharaja seen in court or in gardens or terraces with attendants, or in equestrian or hunting scenes. But these scenes, and some Mughal stylistic elements, were mostly incorporated into flat decorative "Rajput" compositions in courts of this period, such as those of Kota and Mewar. The Bikaner paintings of the same period, on the other hand, show a much closer affinity to the naturalism of Mughal style combined with the decorative patterning and mystical palette of the Deccan courts.

The Mughal court saw a brief and brilliant revival during the reign of Aurangzeb's grandson, Muhammad Shah (reigned 1719–1748). The idealized moody romanticism of the paintings produced under him, thematically focused on courtly love and characterized by naturalistic atmospheric effects, carried over once more to inspire two of the finest and most charismatic schools of late Rajput and Pahari painting respectively, those of Kishangarh and Kangra.

In the mid-eighteenth century, a fruitful collaboration between Raja Savant Singh (reigned 1748–1764) of the Rajput state of Kishangarh and the two master artists of his court, Bhavani Das and Nihal Chand,

both originally from Delhi, led to the formation of a unique and distinctive style of painting. Extending the moody romanticism of the late Mughal court, Kishangarh painting of this period produced a large corpus of highly stylized depictions of its patron raja and the object of the raja's affection, the court singer Bani Thani, with the two portrayed as Krishna and Krishna's beloved Radha, respectively.

A similar effect, using different means and developing a different and more refined aesthetic, also appeared around the mid-eighteenth century in the hill states of Guler, Jasrota, and Kangra, and is attributed to the efforts of two artist brothers, Manaku and Nainsukh (1710–1778), and their students. Nainsukh's work in the court of Raja Balwant Singh of Jasrota (1724–1763) in particular can be said to originate the highly prized late Kangra School. The thematic mainstay of this school, like the school in Kishangarh, drew upon the dalliances of Radha and Krishna. Here the late Mughal romantic figures and style are transformed by a dream-laden, tranquil, naturalistic backdrop into a languorous intimate amorous moment in the secret wood, where time stands still and the divine couple, stylized using an aesthetic of balanced refinement, savor eternal delight in time-born bodies.

From the mid-eighteenth century, the British presence in South Asia exerted a powerful influence on courtly taste, moving it toward photorealism. The advent of photography itself contributed in no small measure to this change. Indigenous artists trained in earlier courtly styles now adapted their work to imitate the camera. Whereas some of these artists continued serving native patrons, particularly through portraiture, the British employed several artists to record scenes of South Asian life, its landscapes, and its flora and fauna. The work of these artists forms a body known as the Company School.

Twentieth and Twenty-First Centuries

At the beginning of the twentieth century, as part of a nationalistic rethinking of identity, the Calcutta artist Rabindranath Tagore and his students

The world speaks to me in colours, and my soul answers in music. • **Rabindranath Tagore (1861–1941)**

deliberately moved away from Western-influenced styles. Known today as the Bengal School, these artists fashioned a distinctive style affiliated with an international antimaterialist movement and Pan-Asianism by integrating elements of Rajput, Mughal, Japanese, and Pre-Raphaelite style. From the second quarter of the twentieth century, international Modernism began increasingly to influence South Asian art, opening up a variety of creative adaptations. Today, the contemporary art scene in South Asia is among the most vibrant and prolific in the world, with increasing numbers of artists making bold forays into individualized modes of expression suited to the social, cultural, and local contexts of the subcontinent.

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See also Harappan State and Indus Civilization

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Art—Southeast Asia

From highly decorated pottery and small bronze utilitarian objects to the great stupa of Borobudur in Java, Indonesia, and the monumental temple complex at Cambodia's Angkor Wat, Southeast Asia's astonishing array of art and architecture was the product of innovation, invention, and transformation of cross-cultural influence, especially Hinduism and Buddhism.

Southeast Asia has some of the most distinctive and impressive art traditions in the world. From earliest times into the present the countries in mainland and insular Southeast Asia have been centers of artistic innovation and the recipients and transformers of artistic influences from outside. The names *Indochina* and *Indonesia* point to some of the outside influences but they mask a deeper sense of cultural layering, innovation, and invention.

The Earliest Art

Some of the earliest pottery and bronze artifacts in the world have been discovered in small rural villages in northern Thailand. Starting about 3600 BCE, fine decorated pottery was made at sites such as Ban Chiang and Non Nok Tha. The oldest examples from Ban Chiang are a grayish pottery decorated with incised designs, followed in about 1000 BCE by striking beige-colored pots with fine geometric shapes and restrained painted decoration in red ochre pigment. The final phase, lasting until about 250 BCE, includes elaborately shaped vessels with a profusion of painted linear decoration usually forming complex swirls.

The Bronze Age in Southeast Asia began about 2000 BCE with utilitarian implements found at Non Nok Tha. The discovery of these artifacts indicates that Southeast Asia, one of the first areas in the world in which people mastered the art of shaping bronze. Large-scale use of bronze in Southeast Asia occurred much later, however, from about 500 BCE to about 350 BCE. Some magnificent large-scale works distributed over a vast area of mainland and insular Southeast Asia date from that period. This Dong Son culture, so named after the first site unearthed in northern Vietnam, produced, among other objects, decorated socketed axes, elaborate bronze flasks, and, most famously, more than two hundred impressive metal drums. The drums are decorated with linear designs typically including a sun and star pattern at the center of the tympanum, around which images of circling birds and geometric ornaments appear in concentric rings. Some examples include three-dimensional frogs situated at the edge of the tympanum. Along the sides long narrow boats with plumed passengers are aligned as if in a procession. The symbolism of heavenly bodies and water suggests the drums had a religious significance, but they may have been used in warfare or in burial or ceremonial rituals.

Bronzes have been found as far as Lake Sentani in West Papua, Indonesia. This wide distribution, combined with the great diversity of styles throughout the Indonesian archipelago, indicates that trade in these artifacts, as well as Roman coins and early Indian items, took place prior to the formal entry of Buddhist and Hindu art from India in the ninth century CE. Powerful rulers most likely commanded the production, export, and import of valuable and elaborate artifacts.

Indian Influences

The earliest contacts between western Southeast Asia, Sri Lanka, and India were most likely in the form of trade carried forth by merchants originating in both India and the islands of Southeast Asia. The Chinese were also part of this early commerce and, traveling as Buddhist and Hindu pilgrims, may have played an important role in diffusing these religious beliefs. It is uncertain precisely when this trade began but the earliest Indian and Chinese accounts vaguely refer to Indianized sites in Funan in the third century in Cambodia, and the Srivijaya dynasty centering on Palembang in South Sumatra. Large quantities of (Chinese) Tang dynasty (618–907 CE) ceramics date the Sumatran sites to about the seventh to the ninth centuries. It appears that no invasion or colonization from India ever occurred. Southeast Asian rulers transformed social and religious concepts into practical models for their own society.

Indonesia

Metropolitan Buddhist and Hindu art from India became prevalent beginning about 800 in the Dieng plateau of central Java with a series of elaborate stone religious buildings. The earliest, built under the Sailendra rulers (778–864), are Buddhist and include the most impressive monument of ancient Indonesia, the great stupa of Borobudur.

A stupa, intended to be a monument to the Buddha, is often a giant reliquary containing some part of the body of the Buddha within its structure. It also functions as a cosmic model, incorporating the cardinal directions and the idea of the rotation of the universe around an axis. The sculpture on a stupa takes the viewer through the stages of enlightenment, beginning at the level of the everyday world, moving through the story of the life of the Buddha, and then beyond into the realms of nirvana. The stupa at Borobudur does all of this, but in a new design and on a massive scale. Built of approximately 57,000 cubic meters of stone, it has been called the largest unified work of art in the world.

Stairways lead up to the rectangular lower levels of the monument. At each tier one turns left and walks past subtly carved relief panels depicting the life of the Buddha amplified with details drawn from daily life in ninth-century Java. There are carvings of large outrigger sailing vessels and court ladies all done in a style derived from fifth-century Indian traditions but modified in a uniquely Indonesian way. Figures have a rounded sensuality with delicate features and gestures. As one goes higher in the monument there are more images of seated Buddhas, until at the highest rectangular levels there are niches with three-dimensional seated Buddha figures in them. At the upper levels rectangular tiers give way to circular tiers, and relief sculptures are replaced by open bell-shaped stupa forms. Free-standing Buddha images can be seen inside through the openwork of these smaller stupas. The pinnacle of the monument is a solid dome-shaped stupa that marks the center and axis of Borobudur.

Buddhist and Hindu dynasties competed and succeeded each other on the basis of trade and political intrigue rather than religion. In fact, religious dynastic labels are based upon the emphasis they placed upon a single religion rather than the exclusion of the other, and religious sites and statues often blend both Hindu and Buddhist concepts and iconography. The finest Hindu monument in Indonesia, reputedly constructed in 856 by King Ratu Baka, is Prambanan (also called the Lara Jonggrang complex). It consists of three tall temples, each dedicated to one of the three major Hindu deities. The largest and central *candi* (pronounced “chandi”), or temple, is dedicated to Siva. Flanking it are smaller temples dedicated to Vishnu and Brahma. The high temple symbolizes the sacred mountain where Siva lives with his consort Parvati. Although obviously derived from Indian sources, the architecture of the temple complex is not a direct copy but a reinterpretation. As at Borobudur, which is located nearby, the sculpture offers subtle variations based upon Indian sources but with gentler poses and facial expressions. The reliefs on the temples illustrate the two greatest Hindu epics, the *Ramayana* and *Mahabharata*. An interesting detail in

one relief shows a building rendered in linear perspective—more than five hundred years earlier than that technique was codified in Italy. Smaller temples face the three major temples. These are dedicated to the mounts of the three deities; Nandi, the bull whom Siva rides, Garuda, the bird that Vishnu rides, and Angsa, the goose for Brahma.

As Islam began its move into Indonesia in the thirteenth century, the Hindu-Buddhist rulers move eastward on the island of Java, establishing the Singasari (1272–1293) and Majapahit (1293–1520) dynasties. There they continued to create great temples such as Candi Singasari and Candi Panataran. Eventually Islam became the dominant religion on Java, and the Hindu-Buddhist rulers moved onto the island of Bali. Despite the conversion to Islam, Hindu epics still play a vital role in the court and everyday culture in Java and elsewhere in contemporary Indonesia. Most famous are the shadow puppet (*wayang kulit*) performances and masked dances accompanied by a gamelan orchestra and singing of the Hindu epic, the *Ramayana*. Bali today is the only Hindu area outside of India and Indian diaspora communities.

On Bali art and religion merge seamlessly, and in some way or another nearly everybody engages in the production of art, music, and dance. The island is dotted with temples, shrines, and palaces. The large active volcano Gunung Agung is sacred to the inhabitants, and rituals performed in its main temple, Pura Besakih, are performed to maintain the order of the universe. Like Prambanan, Besakih is dedicated to the three major Hindu deities, but the architecture is quite different. A massive stone stairway leads up the slope of the mountain, and on the terraces above there are thatched wooden buildings somewhat resembling pagodas that represent Mount Meru, the mountain of the gods at the center of the universe in Hindu cosmology.

Cambodia

In Cambodia, the Khmer Empire, which began its rise in the seventh century and was at its peak in the ninth through twelfth centuries, fashioned equally



This cave carving is typical of many found in the Angkor Wat temple complex in Cambodia.

impressive arts that combined Hindu and Buddhist influences. One of the most remarkable world monuments is Angkor Wat. Begun around 1113 by the ruler Suryavarman II (d. c. 1150) and completed around 1250, Angkor Wat is a veritable city of art. It includes a giant stone temple complex surrounded by moats with bridges and sculpted buildings and towers. (The site is set amidst large rectangular artificial lakes that provide water for the planting season.) The lotus-bud-shaped redented towers are a distinctive feature of the architectural style, itself a unique Khmer blend of Hindu and Buddhist elements. Relief sculptures, integrated with the architecture, also use a Khmer style portraying a range of subjects from the Hindu epics, to battles, to delicate dancing maidens. The faces are delicately carved with squarish chins and rather

thick, broad lips that sometimes have bow-shaped mustaches. The eyebrows flow across the ridge above the nose, also forming the double curve of an archer's bow; hair is rendered in even-lined patterns. The figures as a whole have a subtle meditative look. Many of the reliefs that depict action scenes use a great number of figures to create kinesthetic patterns throughout compositions of rhythmically repeating curves.

Although smaller than Angkor Wat, nearby Angkor Thom is also remarkable. The main structure, called the Bayon, has high towers at the periphery of the main buildings. The sides of the towers have giant faces carved on them that are thought to represent the ruler Jayavarman VII (c. 1120–c. 1215), the monarch who commanded the construction of the site. The serenely stylized portraits blur the distinction between rulers and gods, suggesting that Jayavarman VII is a *devaraja*, a king who has the attributes of a god.

Burma (Myanmar)

The great Buddhist movements of Burma (Myanmar) originated in 1056 under King Anawratha in the fertile Irawaddy River basin extending to the Salween River delta. From its beginnings, Buddhism in Burma incorporated an indigenous belief in spirits called Nats (originally meaning “lords”) that had dominion over a group or object. At first these spirits were impersonal and local—the Nat of a tree or a hillside, for instance), but eventually a panoply of thirty-six “national” Nats, each a distinct personage with a life history, became the subject of much Burmese art; Buddha, in fact, is considered the thirty-seventh Nat. Hence Buddhist temples are as much Nat-houses as they are dedicated to Buddhism. The earliest large-scale Buddhist site is the city of Pagan. This city, a tremendously impressive collection of hundreds of temples, shows the evolution of their architectural tradition from Indian sources to a distinctive Burmese style.

Perhaps the most impressive monument is the giant Schwe Dagon stupa in the city of Rangoon (Yangon). Construction began in the fourteenth century under the ruler Binnya U; the resulting 22-meter-high monument was then modified many times during the next



Nguyen Phan Chanh, *Re Lua* (1960). Nguyen Phan Chanh, one of Vietnam's most celebrated artists, paints on silk with colors that evoke the countryside.

four hundred years. After an earthquake it underwent reconstruction from 1763 to 1776 to reach its present height of 99.4 meters. The white, bell-shaped form of the stucco and brick monument closely resembles prototypes in Sri Lanka, particularly at the fifth-century site of Annuradhapura. Numerous shrines resembling Chinese pagodas and an array of Buddhist sculpture surround it.

Thailand

After contact with the Burmese kingdom of Pagan, the tribal peoples of Thailand adopted Buddhism. The cities of Chiangmai in the north and Ayuthia in the south became early centers for the spread of the new religion. From its beginnings, the southern part of Thailand was dominated by Cambodian Khmer civilization. But in 1287, when the Mongols invaded



Pagan, three powerful Thai chiefdoms combined to form the kingdom of Sukhodaya and spread Buddhism to all parts of Thailand. The cannons of Theravada Buddhism prevalent in Thailand fixed the sculpture style, making it difficult to chronicle changes over time but also making it easy to identify Thai Buddhist imagery: slender forms and tall spire-like head protuberances.

When the capital of Thailand was moved to Bangkok in 1767, numerous buildings were constructed as very ornate versions of wooden architecture in other parts of Southeast Asia, particularly Burma. The Temple of the Emerald Buddha in the royal palace compound is typical with its steep roofs with dragon finials at the gables. The gables emerge in sections from within each other as they do in Burma and other parts of Southeast Asia.

Chinese and Indian Influences in Vietnam

Chinese influence predominated during their occupation of Vietnam during the second century BCE to the tenth century, and rose again in the thirteenth and fourteenth century, especially regarding the symbolism of the dragon in folklore and myth, and as a decorative motif in art. (For Vietnamese peasants, dragons represented a four-fold deity—clouds, rain, thunder, and lightning); for rulers, dragons became, as they did in China, a symbol of authority and power.) Dragon imagery is found in sculpture, painting, and architecture, and the Chinese influence is remarkable in the brick tiles (dating to about the tenth century) at the Co Loa citadel near present-day Hanoi.

Influenced by early Hindu civilization, the loose federation of states that comprised the kingdom of Champa, whose population comprised several ethnic groups, flourished in the south and central part of Vietnam in an area then called Annam. Much of its contentious history, from its founding in the second century CE to the time it was absorbed almost entirely by the Vietnamese, can be characterized as a period of struggle against the Chinese (depending on the Chinese dynasty in power), a greater sense of freedom

with the independence of the Vietnamese in the tenth century, and to a lesser extent its relationship with Java. The brick temples of the Champa, much influenced by Hindu elements of design, consisted of tall tower structures with flame-like arches over the doorways; the exterior walls are decorated with bas-relief columns adorned with carvings of flowers and leaves. Sandstone lintels and ornamental corner pieces are carved with the figures of gods and animals sacred to the Hindu. Cham sculpture is especially distinctive; and yet similar in some ways to the Khmer aesthetic, with very square faces, very thick broad lips and exaggerated bow-shaped eyebrows that at times extend across the forehead as a rope-like ridge. Halos typically had foliage that resembled a mass of worms. While these figures are indeed imposing, polished figures from later periods convey austerity and unearthly calm.

Tribal Arts

In the remote parts of Southeast Asia, the highlands of mainland Southeast Asia and distant islands of Indonesia, many tribal groups either resisted or missed the larger metropolitan influences coming from the west and north. Some extraordinary and unique art traditions from these locales have only recently caught the attention of the outside world. In the highlands of mainland Southeast Asia ethnic groups such as the Hmong, the Ahka, and the Yao produce intricate embroidered and dyed costumes and spectacular jewelry, particularly in silver.

Indonesia is particularly rich in these cultures. On the island of Nias, off the west coast of Sumatra, the inhabitants build large and impressive houses. One royal palace is 20 meters high, supported underneath by over 100 gigantic pillars. There are also elaborate megalithic monuments in the villages that memorialize the dead and commemorate sumptuous feasts that raise the status of the rulers. In Nias, and many other parts of tribal Southeast Asia such as Sumba, islands in South Maluku, and among the Batak peoples of Sumatra and the Toraja peoples of Sulawesi, elaborate gold jewelry celebrates status and is rich in symbolic value.



The Toraja people on the island of Sulawesi are also known for their fine architecture, but their highest artistic achievement centers on their funeral rites. To memorialize a high-ranking chief an enormous banquet is prepared as hundreds of people sing and dance in their finest attire and jewelry. Special houses are constructed for the guests and to serve the ceremonial purposes of the funeral. Life-sized wooden effigies called *tautau* are placed in grottos as testimonials to the fame of the ancestors.

Modern Art

Time-honored arts still flourish throughout Southeast Asia. Fine textiles, jewelry, traditional weaponry, and architecture can still be found in great abundance. As in cultures around the world, however, long-established ways of life and their accompanying artistic traditions are changing and to some extent vanishing under contemporary economic, religious, political, and technological influences. In much of Southeast Asia newer forms of contemporary art are being created that express the individual ideas of the artists and contemporary social and political conditions. Today, not only Southeast Asia's traditional art, but also the art created by its contemporary artists, particularly those from the Philippines, Indonesia, and Malaysia, can be now seen in the museums and galleries of New York, London, and Paris.

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Art—West Asia

West Asia has a long and complex artistic tradition, beginning in the Neolithic era, during which indigenous forms of visual expression have been subjected again and again to new influences from both East and West. The spread of Hellenic culture in Ionia and the influx of Islam and the crusades, for example—appears in a number of media, from splendid mosques and mosaics and from knotted carpets to arts of the book.

In early times the main centers of artistic development in West Asia were focused in the cities of Mesopotamia, Anatolia, and the west Mediterranean littoral. The Persian and Helleno-Roman empires, including Byzantium, that ruled various parts of West Asia from around 550 BCE until 650 CE and beyond introduced artistic traditions with a broader range and wider geographical span. Finally, after the seventh century CE, Islamic art gradually became the dominant visual culture in West Asia, although other traditions continued as well.

Earliest Artifacts

Among the earliest forms of art surviving from West Asia are those from Neolithic settlements and from Mesopotamia. Çatal Höyük on the south central Anatolian plain was settled from around 6500 to 5650 BCE, and excavations there have uncovered architecture, sculpture, beautifully decorated pottery, wall paintings, and the remains of what appears to have been a vibrant weaving tradition. The Ubaid culture of Mesopotamia, which flourished after 4300 BCE, appears to have provided a foundation for the later art of the Sumerians.

Due largely to twentieth-century excavations and scholarship, we now know of the artistic accomplishments of the great city-states of Mesopotamia, beginning with the Sumerian city of Kish, whose earliest inscriptions can be dated to around 2600 BCE, followed in later Sumerian times by Lagash, seat of the Sumerian ruler Gudea around 2050 BCE, and Ur, whose excavation has yielded remarkable royal and priestly objects, as well as a giant ziggurat constructed around 2100 BCE. In 2334 BCE the Akkadian king Sargon built a new empire, with Nineveh as its political and cultural capital, before falling to a Sumerian resurgence. One of the most remarkable artifacts from the period, a famous copper head of a Nineveh man, was stolen during April 2003 looting of the Iraq Museum in Baghdad. (Ironically, it is possible that the head had been symbolically mutilated during antiquity, much in the same way as contemporary Iraqis mutilated statues of Saddam Hussein; when the object was discovered its ears and the inlays that filled its eye sockets appeared to have been deliberately removed.) Among the thousands of other works pilfered was an iconic 91-centimeter-high carved alabaster libation vase (circa 3500–3000 BCE) from Uruk and the carved marble female head of the same period and sacred region. The museum lootings prompted much reflection (and some excellent journalism) about the concept of historical consciousness and identity. Zainab Bahrani, in his article “Iraq’s Cultural Heritage: Monuments, History, and Loss,” wrote in some detail about the stolen Uruk vase—one of the earliest examples of narrative art—noting as well the Mesopotamian anxiety about the safety of their monuments, texts, and works of art during times of war (an anxiety about the loss of

both memory and identity, he interprets). Three days after he drafted the article, on 11 June 2003, three individuals in a battered car returned the Uruk vase to the museum.

Subsequently the Babylonian civilization flourished; under its greatest ruler, the lawgiver Hammurabi (d. 1750 BCE), sculptors created notable monuments. Babylonian dominance bowed in turn to the Assyrians, under whom artistic production reached new heights; their palace city of Khorsabad (c. 701 BCE) and later their reconstruction of Babylon, whose celebrated Ishtar gate (c. 575 BCE) is now located in Pergamon Museum in Berlin, were major centers of artistic activity in all media. Assyrian relief sculptures from Nineveh and Nimrud are now dispersed among museums worldwide.

In Anatolia, numerous civilizations with distinctive artistic traditions flourished in the two millennia before the common era. Among them were the Hittites, whose capital of Hattusas has yielded up remarkable stone and metal objects, the best of which are in the Museum of Anatolian Civilizations in Ankara. Urartians, Lydians, and Phrygians, among others, left their mark on the history of material culture in Anatolia, creating fortified cities with masonry walls and furnishing their courts with beautiful objects and well-crafted stone buildings.

The Persian Artistic Tradition

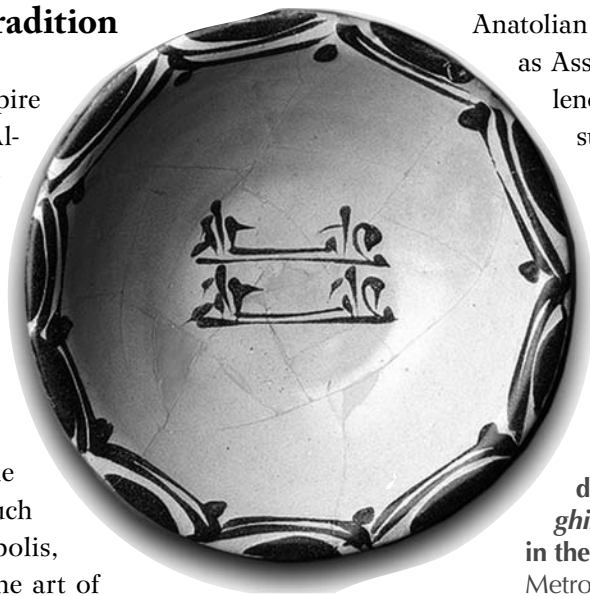
The Achaemenid Persian Empire (550–330 BCE), followed by Alexander of Macedon (Alexander the Great, 356–323 BCE) and the Seleucids (312–64 BCE), the Arsacids, (247 BCE–224 CE), and the Sasanids (224/228–651 CE), created a continuing artistic tradition that in some ways can be traced in an unbroken line from the works produced in such great early centers as Persepolis, Susa, and Bisitun down to the art of

the present day. The palace of Darius I at Persepolis (c. 500 BCE), with its huge, fluted columns and dramatic reliefs of royal ceremonies, conveys an idea of the pomp and majesty of Achaemenid court ceremony and sumptuary arts. Sasanid brick architecture was enormous in scale, as the ruins of the palace of Shapur I (250 CE) at Ctesiphon, with its huge catenary vault, suggest. Sasanid architectural and sculptural remains at Sarvistan, Taq-i Bustan, and Nakhsh-e Rostam near Persepolis, and their iconography of Sasanid kings as warriors, hunters, and lawgivers, attest to the political importance of art under the Sasanians. Numerous objects in precious metals likewise demonstrate the rich Sasanid royal iconography, while Sasanid silk weaving was in its time the epitome of beauty, luxury, and technical virtuosity in both the East and West.

Greek, Roman, and Byzantine Art in Anatolia

The Hellenic colonizers in Ionia spread the Hellenic visual culture to much of West Asia; like Greek philosophy, much of Greek art appears to have taken form in the Ionian colonies. The succession of Greek classical architectural orders—Doric, Ionic, and Corinthian—and the full repertoire of classical and Hel-

lenistic art is reflected in the excavations of Anatolian cities, from early sites such as Assos and Priene, to later Helleno-Roman sites such as Ephesus (whose temple of Artemis was one of the seven wonders of the ancient world),



This ninth-century earthenware bowl is one of the earliest examples to incorporate calligraphy as the main element of decoration. The Arabic word *ghibta* (happiness) is repeated in the center. Collection of the Metropolitan Museum of Fine Art.



A 2004 view of the courtyard of Jameh Mosque in Isfahan, looking toward the north iwan. Photo by Alex O. Holcombe.

Halicarnassus (site of another of the seven wonders), and Pergamon, whose magnificent Altar of Zeus (c. 180 BCE) is now in Berlin. Both in the realms of architecture and sculpture, Ionia influenced the art of mainland Greece, and its great temples were far more splendid, and constructed on a much larger scale, than most of those of mainland Greece.

Under Roman dominance westernmost Asia underwent impressive urban expansion, and prosperity led to massive investment in art and architecture. The Romans spread the Helleno-Roman style to Syria and Palestine as well as to southern Anatolia and Egypt, and cities such as Palmyra, Baalbek, and Roman Ephesus display today the most impressive remains of the art and architecture of the ancient

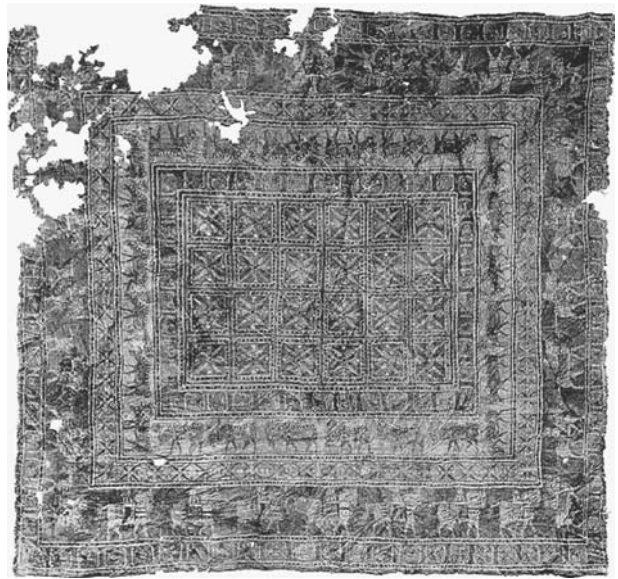
world. The Helleno-Roman cultural sphere encompassed indigenous peoples as well. Among these, perhaps the most famous were the Arab Nabataeans, whose great fourth-century BCE city of Petra, with its rock-cut monuments in Hellenistic style, demonstrates the pervasiveness of the classical artistic tradition. Archaeological remains from this period are found elsewhere as well, as far south as the Arabian Peninsula.

The establishment in the early fourth century CE of the capital of the Eastern Roman Empire at Constantinople was instrumental in the development of a new Christian artistic style in West Asia, especially in Anatolia and greater Syria. Drawing heavily on the technical and stylistic legacy of Rome, including the

media of mosaic and classical architectural design, the Byzantine artistic style evolved from late classicism into the Middle Byzantine style by the ninth and tenth centuries. Roman and Byzantine engineering advances, such as the barrel and groin vaults and the pendentive (the concave triangular section of wall that forms the transition between a square or polygonal space and the circular base of a dome), greatly expanded possibilities for architectural interiors; the six-domed early Byzantine church of St. John at Ephesus (c. 525) and the famous Hagia Sophia in Istanbul (c. 537) exploited that new mathematical engineering. Byzantine Syria and Palestine saw the building of such monuments as the monastery of Simeon Stylites (c. 490) and the sixth-century structures associated with the Holy Sepulchre in Jerusalem. Around the same time the Armenian states in eastern and later in southern Anatolia began a centuries-long development of their own artistic tradition of exquisite cut-stone buildings and sculpture, as well as distinctive traditions of wall painting and manuscript painting. The Church of the Holy Cross at Achtamar, from the early tenth century, is perhaps the most famous of many sculpture-covered Armenian masonry churches of the Middle Ages, and the ruins of the Bagratid capital of Ani, ravaged by an earthquake in the eleventh century, still impress visitors to this day.

Early Islam in West Asia

With the explosive spreading of Islam from the Arabian Peninsula into the Middle East, North Africa, and Central Asia following the death of the Prophet Muhammad in 632, the arts of West Asia underwent major changes. Unlike the cultures of the Byzantine and Sasanid empires, which had deeply rooted traditions of artistic images of both kings and religious figures, Islamic culture reflected the Prophet's deep distrust of figural art as potentially idolatrous and symbolic of luxury. The art of West Asia after the coming of Islam, as one might expect, therefore represents a syncretism of preexisting traditions adapted to new needs and beliefs. The first great



The Pazyryk Carpet, the oldest known surviving carpet in the world, dating from the fifth century BCE. By the late fourteenth century Islamic carpets had become an essential aspect of Europe's material culture.

Islamic building, the Dome of the Rock in Jerusalem (c. 680), reflects centralized church plans of Syria in its form and uses the Roman-Byzantine technique of mosaic in its decoration. The Great Mosque of Damascus, constructed in the early eighth century under the Umayyad dynasty (661–750), is in fact a recycled Christian edifice that was in turn converted from a Roman temple precinct. Scorning human and animal images in its public and religious art, early Islamic civilization developed the repertoire of Arabic calligraphy associated with the Qur'an, together with new adaptations of late Roman vegetal, floral, and geometric ornamentation that eventually took on the distinctive Islamic forms we today sometimes refer to as arabesque.

At the same time, in their private rural hunting lodges and urban palaces, the new rulers of the Islamic polity quietly adopted the sumptuous luxury arts and the court iconography of the Sasanid and Byzantine empires. Early eighth-century desert palaces in Syria were covered with mosaics and paintings, in some cases even including depictions



Gaspare Fossati's lithograph print from 1852 shows the interior of the gynaecium (space reserved for women) of Ayasofya Mosque, formerly the Church of Hagia Sophia in Constantinople (Istanbul), Turkey. Library of Congress.

of the hunt, genre scenes, and depictions of nude women as entertainers in the Islamic version of the Roman baths. The fall of the Umayyads to the Abbasids (749/750–1258), who moved the capital from Damascus to Baghdad, led to a period of artistic splendor chronicled in the *Arabian Nights*. The shift of the political center of gravity to Baghdad in the east also intensified the Persian cultural impact on the emerging Islamic style. At the same time, the importation of Turkic slave soldiers from Central Asia and trade with Tang dynasty (618–907) China over the Silk Roads opened the art of West Asia to influences from the north and east as well. In the prosperous towns and urban courts of east Persia in the tenth and eleventh centuries there developed

an urban middle-class Islamic art of high taste and literary sophistication, in which familiar stories from narrative poetry were often reflected in the visual arts. The famous epigraphic ceramic wares of the period show the adaptation of the art of calligraphy to ceramic decoration, with the use of aphorisms and adages to ornament lovely tableware.

The destruction of much of the early Islamic art and architecture of the eastern Islamic world in the Mongol invasions of the thirteenth century has resulted in a relatively meager amount of early art surviving to our time, which makes the splendid material culture described in the surviving historical records of the era both less accessible and more intriguing.



The Dome of the Rock in Jerusalem (close-up showing the Dome of the Chain), in a photo taken between 1934 and 1939, uses the Roman-Byzantine technique of mosaic. Library of Congress.

Eastern Invasions and Art of the Later Islamic Empires

Beginning with the arrival of the Seljuk Turks in the eleventh century, West Asia was subject to periodic waves of invasion from the east. The Mongols in the thirteenth century, the Timurids in the late fourteenth century, and the Afghans in the eighteenth century all brought a mixture of destruction and renewal to the art of West Asia. Seljuk patronage in particular resulted in a very complex and rich expansion in all media; the four-iwan type of religious structure (an iwan is a vaulted space that opens out at one end) that later enveloped the entire Islamic world from Central Asia to Morocco, began in Seljuk Iran, the eleventh-century Great Mosque of Isfahan being its first major manifestation. Art under the Seljuks and

their successors in Iran, the Jazira, and Anatolia frequently used human and animal imagery. Depictions of people, and both mythical and actual creatures, appeared in media as diverse as public stone sculpture, architectural decoration, and especially ceramics and arts of the book.

At the same time, East-West contacts developed through the crusades (beginning in 1095 and occurring periodically through 1291) further enriched both the development and the dissemination of Islamic art. Islamic media such as enameled glass, inlaid metalwork, and the ubiquitous knotted-pile carpet were traded and esteemed in Europe. By the second half of the fifteenth century, the art of West Asia had developed a truly international Islamic style found in Timurid, Uzbek, Turkmen, and Ottoman realms, manifested in the media of architectural decoration, arts of the

Every great work of art has two faces, one toward its own time and one toward the future, toward eternity. • **Daniel Barenboim (b. 1942)**

book, and luxury arts. From Samarkand to Istanbul in the north, and with reflections in the Mamluk art of Cairo and Damascus in the south, this international Islamic style flourished under court patronage. Artists and works of art moved along commercial routes with ease, and inspiration from trade with China and with Europe enriched the art of Islamic lands in many ways. By the late fourteenth century Islamic carpets had become an essential aspect of the material culture of Europe, while silk commerce between Iran and Europe via the Ottoman Empire, and trade by ship across the Mediterranean between North Africa and both the Ottoman and European worlds, resulted in an enhanced commerce of both art and artistic ideas. The Mamluk rulers of Egypt (1260–1517), with their Turkic ethnicity, language, and customs, forged artistic links with Islamic lands farther to the east, and artists freely traveled between Iran and the Ottoman lands. After 1500, the Islamic art of West Asia was dominated by two great court styles, those centered in Ottoman Istanbul and those centered in Tabriz, Qazvin, and Esfahan, the successive artistic capitals of the Safavid Empire (1501–1722/1736). Safavid Esfahan was a planned city that took form during the reign of Shah ‘Abbas I (reigned 1588–1629). Among the great artistic personalities of the age were the Ottoman architect Sinan (1489–1588), whose greatest masterpiece was the mosque of Selim II in Edirne (c. 1572), and the Safavid court painters Sultan Muhammad (flourished 1520–1540) and Reza ‘Abbasi (flourished 1590–1635). The miniature painting and other arts of the book practiced by professional artists in Islamic courts, originally intended for a very limited audience of wealthy patrons, gained wider importance because of their impact on other art forms, such as carpets and textiles with figural decoration, and architectural decoration employing the wealth of vegetal, floral, calligraphic and geometric motifs first invented in the royal painting ateliers.

Later Art in West Asia

Artistic development in West Asia from the eighteenth through the twentieth centuries was subjected

to the effects of both Eastern invasions and Western culture and commerce. European influence appears in Ottoman and Safavid painting as early as the seventeenth century, and the interplay between revivals of traditional styles and European cultural incursions continues to the present day. The eighteenth and early nineteenth centuries constitute a great age of calligraphy in the Ottoman Empire, and nineteenth-century Iranian art under the Qajars (1794–1925) led to many interesting innovations, especially in painting. In the twentieth century, traditional artistic forms were revived while simultaneously West Asian artists began to achieve reputations working in international techniques and media in architecture, easel painting, and sculpture; many of the twenty-first century’s most prominent West Asian artists attempt to achieve a fusion of Islamic tradition and modern genres and techniques.

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See also Assyrian Empire; Babylon; Mesopotamia; Persian Empire; Sumerian Civilization

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Art—World Art Studies

World art—the objects and technologies humans have made from their earliest days to the present—provides a visual reference to stimulate the thinking of art historians and world historians alike. This interdisciplinary field studies resources and technologies of various cultures and the transmission of styles and ideas from one culture to another.

The emerging field of *world art* encompasses the study of art humans have made from the dawn of the species to the present, and across the entire globe—from Africa to Oceania and from Eurasia to the Americas. *Art* has many definitions: here it refers both to objects and techniques, especially those that produce an aesthetic response and leave some trace of their existence in the archaeological or historical record. While conventional, historical theories and methods are useful in the study of world art, many scholars involved in what they consider a burgeoning “world art movement” use an interdisciplinary approach, mining such fields as archaeology, anthropology, art history, and, perhaps surprisingly but significantly, neurobiology.

Traditional art history has long been associated with “fine art” (often meaning “art created by renowned individuals from cultures of the West”), while anthropology has been left to study the “crafts” from “non-Western” cultures and anonymous “artisans.” World art studies embrace diverse media: performance arts such as drama, dance, and music; literary arts of language and literature; installation and environmental arts; electronic arts; and visual arts such as painting, sculpture, architecture, ceramics, textiles, and jewelry. (Contemporary art history,

of course, has broadened its own realm to include many visual genres once considered nontraditional.) Because items made from tangible materials provide evidence reaching furthest back in time, the examples



For many years traditional art historians studied “fine art,” leaving the subject of “crafts” from “non-Western” cultures and anonymous “artisans” for anthropologists. Photo by Kevin Connors (www.morguefile.com).

Everything that has ever been called folk art has always reflected domination. • **Theodor Adorno (1903–1969)**

used here, in a general survey of world art studies, are objects (or visual records of objects) that survive to be seen, examined, and appreciated.

Art historians address the content, context, and meaning of such objects, as well as how, why, when, and by whom they were made, but world art historians take this “see the art in context” approach further (and deeper) to make cross-cultural comparisons. For example, fiber arts comprise textiles—wall hangings, quilts, tapestries, rugs, and cloth—as well as ropes and nets. Each of these specialties involves processes or considerations that reflect social, economic, and cultural aspects of particular groups who made them: the method or sophistication of fiber manipulation and construction (including spinning, weaving, knitting, and patterns of braiding or twisting); the resources or material available (such as cotton, silk, hemp, or flax); and the purpose or occasion of an item’s use (fishing, trading, everyday or ritual clothing). Breaking down a genre of art and analyzing the specific factors that shaped its creation can often make comparisons across cultures more significant for world historians.

Key Aspects of the Field

Since art is created everywhere in the world, world art first and foremost demonstrates the universality of human neurology and nature—our sophisticated hand-eye coordination and our ability to symbolize (that is, to have one thing “stand for” another). The historian David Christian is among those who have observed that accumulated collective learning via symbolic representation is a “driving variable” in human dominance of the planet. The field of world art examines and interprets this symbolic record: art as fact (*artifact*, from the Latin words *factum* and *arte*, literally “thing made by skill”) provides ongoing evidence of multivalent symbolic behavior and meaning that is generated and put into context over time and space.

Humans made objects long before the relatively recent time of written records; world art provides a more complete story of humanity and extends our

global, historic understanding by tens of thousands of years. As history began to unfold in text, world art continued to record evidence of human endeavors. Such visual media can be used to augment and enhance the understanding of any given historic period, and to test various historical hypotheses. World art is thus a lens through which historians can explore how individuals in a culture expressed themselves creatively, or how societies communicated values through visual representations. The world art movement’s focus—the ancient and ongoing evidence of human material cultures (art objects) and technologies (the purposes and methods of art making)—can expand the scale of study (a principle advocated by David Christian’s theory of big history) and to locate panhuman threads of inquiry.

Evolutionary psychologists have explored individual and social reasons for *why* humans made art—to signify wealth and status, to teach values or protest social norms, and to aid memory, for example—but they have also theorized that the artistic forms people originally used grew from views about the body’s role in humankind’s survival. These researchers propose that the widespread desirability of the hourglass-shaped female figure derived from its association with fertility—bearing offspring perpetuates the species—and thus spurred the earliest cultures to represent the female body using artistic materials. (Clay figurines with corpulent forms characterized by the so-called Venus of Willendorf and similar small sculptures of the Paleolithic era provide an example). Other scholars, notably Bethe Hagens (1991), dispute the idea of female fertility as the inspiration for prehistoric figurines and suggest, with convincing visual evidence, that they were modeled on animal brains.

The particularity and diversity of the objects humans have created reflect the ways in which ideas, skills, materials, or modes of representation have (or have not) been transmitted, preserved, or transformed. Thus world art supports specific studies that compare and contrast cultures by examining contemporaneous genres and techniques. Looking at tomb paintings and low-relief sculptures from the Han dynasty (206 BCE–220 CE) in China and at wall mosaics



The so-called Venus of Willendorf (24,000–22,000 BCE), a small limestone figurine discovered in 1908 near Willendorf, Austria.

in classical Rome can illuminate how two different cultures in the second century CE understood and used the concept of perspective. Portraiture in general or ritual death masks in particular might be used to compare African civilizations such as those in Benin or Egypt to tribal societies such as the Yoruba. The field of world art can also support specific area or period studies: a scholar researching the year 1000 CE might find it useful to compare variations in Islamic

and European medieval calligraphies by considering the surfaces on which the “lettering” was applied, the calligraphic styles, the colors used, or, especially relevant to a world historian, the purpose of the writing and what it revealed about attitudes toward creation and divinity.

The evolution of the Buddha image shows how Greco-Roman representations of deities were imported into the Gandhara region of India in the second through the sixth centuries CE and influenced the formation of a standardized (Gupta) Buddha image. In one fifth-century high-relief sculpture from Sarnath, Uttar Pradesh, India, for example, a slight but broad-shouldered figure stands in a relaxed, graceful position conveyed by the open-palmed gestures of his hands; the sculptural representation of a sheer, clinging robe accentuates the body’s purity and perfection. This Gupta style was modified as it traveled through Asia, so that in different countries and at different points in time, the Buddha image also reflected individual Asian cultures and styles. The monumental Buddha carved into the rock caves at Yungang (c. 460 CE, one of the earliest examples in China’s Shanxi Province), sits in a rigid pose with short, stylized “drapery” hung over his massive shoulders; these attributes exhibit a distinctly Central Asian aesthetic influence, although the elongated ears and a protuberance on the head are elements familiar to the Gupta figure.

World art thus serves as a vantage point from which historians can study resources and technologies of various cultures, the relationship of humans to the natural, spirit, or ancestral worlds, and, significantly for world historians, the transmission of styles and ideas from one culture to another.

Approaches and Resources in the Field

Thus far the emerging field of world art has relied mostly on the work of anthropologists and art historians, so interests and biases of these fields have influenced scholarship to date. The anthropologist Arnold Rubin (1989, 17) proposed his view of world art as technology: “a system of tools and techniques by



means of which people relate to their environment and secure their survival.” Rubin favored an eclectic, interdisciplinary approach to art historical surveys that would allow scholars to examine the structures in which art was produced and utilized in certain cultures, and then to “identify similarities and differences between them according to the types of social, political, and economic systems they embody” (1989, 11). The field of visual anthropology, which emphasizes the importance of visual symbols embedded in gestures, rituals, and ceremonies (as well as artifacts), focuses on the use of video and photography instead of text to document ethnography. Recently the British art historian John Onians edited the comprehensive *Atlas of World Art* (2004), a monumental landmark study that divides world art (from 40,000 BCE to the present) into seven periods, for which maps are his primary visual tools.

In addition to these approaches, world art studies benefit (and perhaps thrive the most) from the insights of neuroscientists and European social science and humanities scholars working on neuroaesthetics and neuro-art history, both of which inform world history. (Two of the key figures in this exploration are Onians and Wilfried van Damme of the Netherlands.) By starting with panhuman neurology, these researchers and scholars attempt to account for universal “givens” (for example, why shapes and color having meaning) to the variability of art in different times and places (why colors and shapes mean what they do in particular places and times). Onians uses research about mirror neurons (a biological explanation for mimesis), brain priming (when the brain sees an image and then automatically looks for it again), and neural plasticity (the brain’s neural firing patterns are altered by the very act of perception) to explain how art is perceived and created.

A new journal that will represent the field of world art as a whole—and the research being done using world art approaches—is slated for publication by Routledge in 2011: *World Art* began in March 2010 to call for research articles, essays, visual presentations, and other dialogues from world art scholars and those in interrelated fields (Taylor and Francis 2010). Several other journals relevant to world art

studies include *Res: Anthropology and Aesthetics* (from Harvard) and *Third Text: Critical Perspectives on Contemporary Art and Culture* (from Routledge). The most rapidly growing world art resources are online databases of image and text made available by museums and academic institutions, such as the collection and timeline of the Metropolitan Museum of Art in New York. For information about specific areas, scholars often turn to regional organizations. For example, to learn more about arts of Oceania, one might turn to the Pacific Arts Association or the Association of Social Anthropologists for Oceania.

Trends and Challenges

World art often dovetails with recent trends and challenges in world history, as the following three examples explain. First, both fields reject a Eurocentric approach. But the lingering influence of Eurocentrism in many traditional disciplines, and the predominant use of English and other European languages in their scholarship, often cause scholars to misinterpret the world art movement as just being about “non-Western” art made by “non-Western” peoples. Scholars even contest what it is that constitutes language and literacy in a non-Western culture. In 1450 CE, for example, the Incan Empire extended for about 5,500 kilometers and functioned, not with a phonetic writing system, but with a “language” of tied colored threads called *quipu*. The Inca communicated meanings by twisting, knotting, and manipulating the strings, as well as by denoting string color and placement. Debating, as some do, whether the art of *quipu* is a form of literacy or numeracy tends to downplay what can be learned from its use as a viable communication system.

Second, questions about how humans and their civilizations develop are central to world history and world art studies. To what extent do people borrow (or diffuse) ideas versus independently invent them? A “world art” answer to this query might be found by looking at any number of specific art objects or their constituent parts—by examining, for instance, the relations between image and text in medieval



Vincent van Gogh, *Portrait of Père Tanguy* (1887). Oil on canvas. The rise of modernism in late nineteenth-century Europe embraced Japonisme. In the background van Gogh includes some of his *ukiyo-e* (woodblock) collection, or perhaps his take on the medium.

religious documents such as the Insular Gospels in western Eurasia and Buddhist sutra scrolls in eastern Eurasia. Scholars in both fields also ask, how reciprocal are the borrowings between groups? Historically Japanese culture was itself part of a reciprocal transformation over well more than a millennium as the nobility first adopted Buddhism and next the writing and other aesthetic styles from the Asian continent; those elements spread to and eventually were entirely transformed by indigenous culture. This reciprocity is reflected in the development and subsequent transformation of Japanese *ukiyo-e* “floating world” woodblock prints, a genre that embodied the principles of transformation and renewal inherent in ancient Buddhism and shamanism. Artists over time adapted familiar subjects to changing technologies,

formats, tastes, and cross-cultural influences; cutters carved the drawings into wood; printers chose colors, inked the blocks, and transferred to paper what had essentially become a collaborative creation (Keyes 1999). Tracing the reciprocity further, Japanese *ukiyo-e* prints are widely recognized for influencing nineteenth-century European painting, but it is hard to quantify or qualify whether that influence equals the powerful impact of Western modernism on twentieth-century Japanese art.

Third, archaeologists and all art historians grapple with the same issues posed by the physical and chemical dating of artifacts (material culture) because they use the same, sometimes problematic, methodologies. Physical dating relies on finding objects “in context,” that is, in stratigraphic layers or contiguous to other excavated remains; dendrochronology (tree-ring dating) is of use only on sites where trees exist. Chemical analysis may destroy at least a part of the object and is often costly, while carbon dating of objects has recently needed to be recalibrated. For these reasons many sites and objects are without firm dates. World art historians, who tend to look at greater numbers of non-Western objects, and who put their findings in a broader comparative, cross-cultural context than traditional art historians, can find their research just as hampered by these inadequacies in dating methods as archaeologists.

Comparative Aesthetics

Appreciating the aesthetics of world art requires getting beyond the familiar Western standards and habits of viewing—the most commonplace of which has the average museumgoer spending less than thirty seconds examining a work of art. Thus many museums today take a more interactive, contextual approach to their exhibitions, especially when displaying nontraditional art forms. (Opinions vary wildly, however, about the whether “guided tours” channeled through the headsets on offer at every blockbuster exhibit are enlightening or reductive.)

World art historians nevertheless have good reason to employ standard and time-tested methodologies

of aesthetic appreciation. An analysis of formal elements and design, however traditional its approach, can still lead to the articulation and understanding of a particular style. Formal elements include line, shape (two dimensions), form (three dimensions), texture, space (types of perspective and negative spaces), colors (tints, tones, shades), and values (degrees of light and dark). Design principles include balance (bilateral or asymmetrical), figure–ground relations, texture, composition, pattern (repetition), rhythm, movement, contrast, emphasis, harmony, and unity. A formal analysis also addresses degrees of reality versus illusion, and naturalistic rendering versus abstraction. Comparisons of aesthetic styles between cultures—drawings by ancient Mesoamerican artists and those of the Egyptians, for instance, reveal a similar composite perspective of the human figure, in which the head, arms and legs appear in profile while the torso is depicted in a frontal view—can lead historians to explore whether such patterns across cultures developed independently or interactively.

Ideas of “beauty,” (that is, what constitutes the aesthetic) have varied in different times and places. In

the first century CE, Longinus’s treatise “On the Sublime” proposed that aesthetics was the *experience* of beauty. Contemporary descriptions of aesthetics now include any emotional response to art and emphasize empathy between those who make the objects (or participate in events) and those who more passively view them. Beginning students and the general public might achieve this empathy by exploring another art form related to the object or the culture that produced it. For example, Western eyes may be unfamiliar with Australian “dreamings” paintings in which hundreds (even thousands) of dots are arranged in circles, spirals, and lines that evoke an aerial (if not spiritual) view of the Australian landscape as it was once traveled by Aboriginal ancestors or otherworldly beings. Such viewers might enhance (or possibly diffuse) the visual sense of “otherness” in these “dot” paintings by using their ears—that is, by listening to music played on a didgeridoo (an indigenous wind instrument developed at least 1,500 years ago). Such cross-sensory exposure, especially when it involves an aural art form capable of eliciting an emotional response, can serve as a tool to sharpen awareness



Contemporary Australian “dreamings” paintings, inspired by cave drawings such as this, use dotted circles, spirals, and lines to evoke an aerial (if not spiritual) view of the landscape traveled by Aboriginal ancestors or otherworldly beings. Photo by Kevin Connors (www.morguefile.com).

Art is a kind of innate drive that seizes a human being and makes him its instrument. To perform this difficult office it is sometimes necessary for him to sacrifice happiness and everything that makes life worth living for the ordinary human being. • **Carl Jung (1875–1961)**

of other unfamiliar customs, practices, and traditions of an indigenous culture.

The Future of World Art Studies

Encouragement for the field of world art as an expressive communication and/or information movement is accelerating and expanding through both widespread tourism (actual and virtual) and other online resources. Visual and auditory global exchanges are commonplace, and new art fields, such as “visual culture and world art,” are growing. Art education and organizations around the world show an increasing interest as public art (art displayed and performed in public places), community art (art made collaboratively within and by communities of people), and individual artists in their studios increase their use of technology in the twenty-first century. World art thus fits the temper of the postmodern age as it supports teaching diversity and accommodates multiple intelligences. (See Howard Gardner’s *Multiple Intelligences* [1993], which explores the theory that individuals possess a unique blend of several types of intelligences—linguistic, musical, and body-kinesthetic, to name a few.)

The most fervent of world art supporters believe that the field has the potential to become an educational axis mundi. In the meantime, world art studies can stimulate the thinking of both art historians and world historians.

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See also Art—Paleolithic; Art—World History and Art; Museums

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Art—World History and Art

World history, almost by necessity, is often interdisciplinary in its approach and research methods. So far, however, it has not connected very closely with the visual studies disciplines, especially art history. Some recent scholarship suggests this might be changing and non-textual evidence will play a larger role in how we see world history.

The great pioneers and popularizers of world history in the first half of the twentieth century—Arnold Toynbee in *A Study of History*; Oswald Spengler in *The Decline of the West*—reified the visual arts as a unique expression of the animating spirit of the “Great Civilizations,” whose rise and fall was the core of world history. Art measured and reflected those life cycles.

The new world history taught in the United States since the 1960s has largely abandoned a separate-civilizations approach to world history in favor of interconnections and comparisons, especially more material ones—trade, the transfer of technologies, the spread of disease, and impacts on the environment. The importance of art in this new context has consequently declined. Does art have any significant role to play in world history in the twenty-first century other than as textbook illustration?

Art: Illustration or Content?

In his enormously influential though misleadingly titled *The Rise of the West* (1963), a comprehensive one-volume survey of the entire human past, William H. McNeill strove to give art and visual material a meaningful presence in a global narrative that

still used civilizations as its basic building blocks but made cultural diffusion between civilizations the real motor of historical change—with art being a prominent part of that story. McNeill not only insisted on illustrations—these were lesser-quality, black-and-white photos compared to the lavish color that would become de rigueur once world history had established a large textbook market—but they were tightly linked to the historical narrative. He also made his publisher (University of Chicago Press) commission the Hungarian-born artist Bela Petheo, who drew a series of diagrammatic maps and sketches to convey some of the book’s interpretations and narratives—particularly those having to do with contact and diffusion. Petheo’s illustrations combined words and symbols with the gestures of, and the spatial relationships among, simply rendered human figures.

Subsequent world history textbooks, including McNeill’s, developed the use of art as illustration but seldom as an integral part of the narrative itself. As material history became more important the emphasis on nonmaterial culture declined. Illustrations functioned more as vehicles to break up large blocks of text, and the lessons art could teach about history, including the history of cultural diffusion, seemingly diminished. When McNeill co-authored his next venture into macro-history, *The Human Web* (2003), art had shrunk to a few passing one-line references. This is not so surprising, for the many subjects McNeill tackled in influential books and lecture series during the years after *The Rise of the West* dealt with “harder” fields of history—military power, demography, disease, and the environment, for instance—topics seldom interpreted through the visual enhancement (or evidence) provided by art.



Johannes Vermeer, *Officer and Laughing Girl* (c. 1655–1660). Oil on canvas. The beaver fur hat inspired the title for Timothy Brook's episodic study on the effects of seventeenth-century trade. The Frick Collection, New York.

This should not be interpreted as criticism. It reflects the general interest of McNeill's time in questions of economic development, of power and organization, and of material culture. The other influential world historians of the last fifty years, from Leften Stavrianos to David Christian, pacesetters in the development of world history as a respectable field of intellectual inquiry, followed similar paths, or rather blazed new trails, but none explored the visual dimensions of world history. Patrick Manning's *Navigating World History: Historians Create a Global Past* makes this point clear. Manning's volume, which in his preface he calls "an overview and critique of world history as a field of scholarship and teaching" (2003, ix), includes a chapter called "Cultural History." A discussion of nonmaterial culture is part of that chapter, but it draws heavily on anthropology; so art is once again marginalized—not necessarily because of any anti-artistic prejudice on the part of

the author—but perhaps reflecting the author's Africanist background.

World History Research: Where is the Art?

Surveying research publications in the field of world history one finds very few books, monographs, or scholarly articles by historians that have anything to do with art. The *Journal of World History*, an official publication of the World History Association, has run exactly two articles with an art theme—"The Pilgrim's Art: The Culture of Porcelain," and "Weaving the Rainbow: Visions of Color in World History," both by Robert Finlay—in its twenty years of publication. A newer journal, the U.K.-published *Journal of Global History*, appeared to be following the same track in its first four years until in the July 2009 issue it published "Dionysus and Drama in the Buddhist Art of Gandhara," co-authored by the art historian Pia Brancaccio and the world historian Xinru Liu. The article is a model of what interdisciplinary scholarship can do to draw more cultural and social history out of a topic, especially one so well covered as Greek influence (between the first and third centuries CE), in what is now northern India and eastern Afghanistan. But its interpretive use of artistic evidence (sculpture) is very much the exception in world history research.

One other seeming exception should be mentioned. Timothy Brook, a globally conscious historian of Ming China, takes the seventeenth-century Dutch artist Johannes Vermeer as the starting point for his 2008 book, *Vermeer's Hat*. But the art is almost incidental to the episodic story Brook tells of how in the seventeenth century the European search for the riches of the Orient, with China at its center, started to build the interconnected world of modern times. He focuses on one small object in several paintings (the beaver fur hat of a Dutch officer in one of them provides the title), to explain where these items came from and the history of how they got to Holland—from the opening of the New World and the exposure to furs, tobacco, and silver; to trade with Asia and the spice islands; and to changes in European customs, habits, and life styles. It is definitely world history

told with grace, charm, and wit. But it does not use the art to explain the history; it is not world history as seen through art.

A more recent but better example of the historian crossing over into art history—but still asking world-history-type questions about complicated cross cultural connections or networks—is Robert Finlay’s book (expanding on the article mentioned above) *The Pilgrim Art: Cultures of Porcelain in World History*. He traces the invention of true porcelain in China, explains why other pottery-making cultures (and who didn’t make pottery?) had such trouble matching the Chinese combination of extremely high kiln temperatures and special types of clay seldom found elsewhere, and why this created a unique worldwide trade network when European maritime expansion connected all the continents. Most significant for cultural history, fine porcelain was an artistic product that carried all kinds of cultural baggage. East met West, China and Europe but also everywhere in between, in the pictures and designs on a Chinese china cup. It is the furthest we have come so far in making art a meaningful part of truly global history.

Still, when we turn from the research monographs to the world history textbooks it is apparent that much more needs to be done. Despite attempts at stimulating interest with attractive illustrations and graphics, they seldom integrate the art or explain why it was created, who its intended audience was, or what impact it had on the history being illustrated. In fact, rarely is any information given about the artist, or even the present location of the work of art, making art seem more like eye candy than an aspect of history. The frequent use of sidebars or “insets” to explain an illustration further separates the visual from the historical narrative rather than integrating it.

There are, of course, some exceptions: mainly textbooks that move away from the more conventional area-by-area chronology toward thematic organization. A pioneering text of this type, Kevin Reilly’s *The West and the World: The History of Civilization from the Ancient World to 1700*, makes a serious effort to integrate art into the history rather than just decorate it. From erotic painted scenes on ancient

Greek vases in his chapter on “Love and Sex” to his final chapter on “Citizens and Subjects,” he uses a range of visual material to illuminate major social, political, and cultural developments. (A subsequent edition published in 2003 brings the reader up to the twenty-first century and ends with the chapter “Identity and Global Culture.”)

An even more thematically organized text, *In the Balance: Themes in Global History* by Candice Goucher, Charles Le Guin, and Linda Walton (1998), has several special sections on the arts. For instance, “The Deadly Arts: Expressions of Death in World Arts before 1500,” ranges around the globe to touch on religious and cultural beliefs surrounding this universal human dilemma. Another section, “Cultural Creativity and Borrowed Art,” meaningfully illustrates the fundamental theme of the new world history—cross-cultural borrowing and innovation.

Still, even these textbooks only scratch the surface of how it is possible to use art—and especially in these modern times, a broader visual culture—for historical analysis. But this will only be possible when the research side of world history generates more articles, monographs, and detailed case studies showing where and how art can be integrated into world history.

This rather negative appraisal of the presently existing role of art in world history scholarship needs to be balanced by two other factors: (1) the greater presence of art and visuality in the teaching of world history, and (2) the potential for help from other academic disciplines.

Art In the World History Classroom

Two publications indicate that art is finding a more prominent place in world history classrooms. In 1997, Heidi Roupp, a high school teacher and president-elect of the World History Association, edited a volume called *Teaching World History: A Resource Book*, part the M. E. Sharpe series *Sources and Studies in World History*. Of the fifty essays on teaching strategies and resources, three involved visual art. Although 6 percent may not seem like a large share,



it is significant compared to the *Journal of World History*'s record of two art articles in twenty years (less than 1 percent). It also is significant that the other WHA publication, the *Bulletin of World History*, more teaching-oriented than the *Journal*, does intermittently have articles dealing with art's role in world history education. That, as well as the greater interest high school teachers show in art panels at the annual and regional meetings of the WHA, seems to indicate that a movement to put more art in world history might come more from practice (teaching) than theory (scholarly research).

But this contradicts one of the fundamental principles of the WHA and the world history movement in general: the teaching needs to be informed by new scholarship and the scholarship should be relevant to the teaching. Since world historians are not producing much scholarship on art in world history, where will such research come from? The most hopeful source may be other academic disciplines with a better eye for nonwritten sources.

Interdisciplinary Solutions?

World history has always been undisciplined—that is to say, not confined within the bounds of normal academic history. The key historians in the intellectual evolution of the new world history all drew ideas and data from other disciplines: William H. McNeill from cultural anthropology, for instance, and the world economic historians—Kenneth Pomeranz, Bin Wong, and Andre Gunder Frank—from economics. David Christian, for his *Big History*, the twenty-first-century continuation of the meta-history tradition, turned to the natural sciences: evolutionary biology, geology, and astronomy. Is there, then, hope that other academic disciplines might bring more visuality to world history? If so, why hasn't it already happened? To some extent it has.

Archeology

The broad vision of world history, going back at least to the agricultural revolution and preliterate societies,

means that archaeological evidence has been essential for reconstructing the distant global past. Few, if any world historians, have got their own fingers dirty at digs, but they have certainly made use of what archaeologists have uncovered, from crude stone and pottery "Venus figures" in Paleolithic Europe to lost cities in Africa or ancient graves along the Silk Road(s). The new journal *Silk Road* is a particularly rich source for archaeologically discovered evidence of trans-Eurasian contacts and cultural exchanges.

But the most startling recent research on pan-Eurasian patterns and possible connections goes back long before silk linked the far parts of what William H. McNeill called "the global eucumene." Two philologists, Victor Mair and Miriam Robbins Dexter (2010), have produced a little book, *Sacred Display: Divine and Magical Female Figures of Eurasia*, with startling implications about the prominence of the feminine in very ancient Eurasian religion and society from China to Scandinavia. Their research uses textual as well as visual evidence, but the book is a striking example of what can be done when text and image are combined and disciplinary boundaries are ignored.

For modern times, with such variety of art and its intermixing in the age of globalization, cultural anthropology is the field that has done the most significant work. In studying mainly nonliterate small societies, anthropology has always turned to art as a vital part of "symbolic culture" and has been global in its scope. More recently, realizing that autonomous native cultures were almost all involved in global exchanges, cultural anthropology has looked at the interaction between different societies and cultures—exactly what world history does—but has given more focus to art than world history has. It has been to world history's disadvantage that there has not been more dialogue between the two disciplines. The recent volume of collected essays, *Exploring World Art* (Venbrux et al. 2005), would be a good place for world historians to begin, even if most of its case studies deal with small societies—the Sepik River valley in Papua New Guinea, for instance, not China or Japan.

Cultural, Visual, and Media Studies

Some anthropologists look at art in larger societies, and they are in much closer touch with the new fields of cultural studies, visual studies, and media studies than most historians are. Those fields, products of the age of an electronically interconnected world, would seem to be more promising for world history than has been the case so far. But from a world historian's viewpoint most of their intellectual production has been disappointing or irrelevant. There are several reasons for this.

First, the scholarship is so heavily suffused with theoretical concerns—poststructuralist, Lacanian, psychoanalytic, deconstructivist—that they literally speak a different language, one foreign to most practicing world historians. More seriously, as the polymath art historian and world art theorist James Elkins has lamented (2003, 36), they show very little interest in “history,” that is, what happened before the advent of electronic images. And finally, a problem for fact-grubbing historians, there is very little first-hand research on non-Western visual cultures in the new fields' leading journals, which are long on postmodernist theorists and short on facts or even images.

World historians should not ignore these new fields of inquiry into global culture, especially when they are really global, but the most likely source of help with visual evidence still lies in art history. How promising is that older and well-established discipline as a source of allies, ideas, and material?

Art History

Although “world art” as a conscious intellectual enterprise and curriculum component is still very much in its infancy, the last few decades have seen considerable changes in the way art history is conceptualized, researched, and taught. Most relevant for world history, it has become less Eurocentric and less focused on stylistic development and “great artists and masterpieces.”

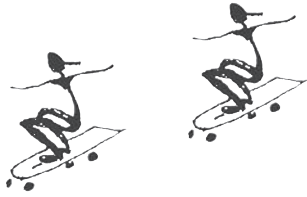
The extent of this progress should not be exaggerated. Many art history surveys and textbooks now

incorporate the word *world* into their title as global consciousness spreads along with economic and cultural globalization. But coverage is still much more comprehensive for the Western canon, from Mesopotamia and Egypt, through Greece and Rome, the Middle Ages, Renaissance, modern Europe, and America. “The rest”—almost all of Asia, Africa, pre-Columbian Americas, Australia, and Oceania—on average gets one-quarter to one-third the total number of pages. Still, this is a considerable improvement over just a few decades ago.

Global coverage in itself may not be terribly useful for a world history agenda. Often written by multiple authors, these thousand-page or more tomes are organized by era and area with not much attention to connections and comparisons between them. That is not to say that the diligent world historian cannot find some examples to use in illustrating cultural contact between different civilizations. Almost all the art history textbooks discuss, more or less adequately, Greco-Roman influence in Gandharan Buddhist art and its spread from northern India to China as one of the most striking cases of long-distance transmission of artistic style and ideals. Similarly, *japonisme* usually figures prominently in the rise of modernism in late-nineteenth-century Europe.

Still, these beautifully illustrated textbooks and the online image banks designed for art history are strongest on the Western art canon, not yet free of “the West and the rest” approach. They remain more useful as a source of illustrations for teachers and scholars of world history. For ideas, world historians will have to search through some of the newer trends and publications in art history.

The two leading professional art history journals, *Art Bulletin* in the United States and *Art History* in Great Britain, still publish heavily on “Western art.” Since the 1990s, the number of articles on other parts of the world has risen to about 12 percent of the total, far less than in the textbooks, which give more weight to course enrollments than art historians' professional interests. More to the point, however, very few articles in that 12 percent touch on the themes of cross-cultural contacts and comparisons which are



so important to world historians. Conceptually, the discipline of art history still seems uninterested in a global approach. But is it?

Perhaps more than history, art history is a discipline in the throes of theoretical change. Much of this theory—semiotics, poststructuralism, and so forth—seems irrelevant for down-to-earth, fact-seeking, narrative-constructing historians. Since the turn of the century, however, there have been several major works by prominent art historians that attempt new approaches to “global art.”

John Onians and his School of World Art Studies at East Anglia University (in the United Kingdom) may be the most significant for world history. His massive, multi-authored *Atlas of World Art* is more truly global in its coverage than any of the standard art history textbooks. Whether or not world historians find his neurologically based theory of universals in art useful, they could benefit from his pioneering work in the discipline of art history.

More active in Europe than America, the world art studies “movement” is very broad in its vision, encompassing the world from the earliest paleo-archaeological evidence of hominid artistic creation to the present, and all relevant disciplines from philosophy to neurobiology. Judging from published essays deriving from a number of workshops held at the University of Leiden—in a 2008 volume, *World Art Studies: Exploring Concepts and Approaches*, edited by Kitty Zijlmans and Wilfried van Damme—cultural anthropology seems to be the closest ally to world art history. There were no historians included, perhaps more a comment on historians’ lack of interest in the visual than any exclusion by world art studies.

On the other side of the Atlantic, two American art historians have seriously engaged the problem of a global art history on the theoretical level. David Summers, in *Real Spaces: World Art History and the Rise of Western Modernism* (2003), tries to come to terms with what new theories of the visual and heightened global awareness mean for the study of art history. He believes those different “real spaces” around the world can be brought into a non-Western-centric universal art history. James Elkins, equally

dissatisfied with the lingering elitist and culture-bound narratives of art history in the West, is much more skeptical about the possibility of constructing a universal narrative out of the world’s various traditions of art and art history. Of his many publications, *Stories of Art* (2002) is probably most relevant for theories of world art history and, by implication, world history.

Three Rubrics for Research

This kind of new thinking by art historians such as Onians, Summers, and Elkins is important for connecting art history to world history, but practicing world historians might find more limited studies that examine specific cases of cross-cultural contacts and comparisons more immediately useful. Much of this closely focused research comes from younger art historians and fits easily under the three large rubrics of world history research—connections, comparisons, and global patterns.

Connections

A few examples of “connections”—cross-cultural influences in art, especially where the art is part of larger cultural, economic, and even political patterns—follow.

The Silk Roads, networks of trade and travel linking East Asia with western Asia and Europe, figure large in both world history and recent art history. The roots of this Western romance with the caravan routes go back to late-nineteenth-century European explorers like Sven Hedin and Aurel Stein, who brought the desert-preserved artistic and archaeological treasures of Central Asia to the world’s attention. More recent archaeological work and art studies have shown how much cultural contact flowed through central Asia on the long-distance trade routes. The artistic record for the transmission of Buddhism from its northern Indian birthplace to East Asia is well known, but new discoveries suggest far more contact between China and Europe in the Middle Ages than had previously been imagined. (The journal *Silk Road* publishes

much of this scholarship.) Lauren Arnold describes in detail one particular “Silk Road journey” in her book *Princely Gifts and Papal Treasures: The Franciscan Mission to China 1250–1350 and Its Influence on the Art of the West*. For influence flowing the other way, Arnold has shown how the image of the Virgin Mary with the baby Jesus, brought to China by fourteenth-century Franciscan missionaries, was transferred into Chinese portrayals of the child-giving goddess, Guan Yin.

The question of Chinese contributions to European Renaissance art is still contentious with

most art historians not accepting Arnold’s views or those postulating Chinese influence on Giotto published earlier by the Japanese art historian, Hidemichi Tanaka. But mainstream Western art history has recognized that the Renaissance was not entirely a European affair as several well-received books have appeared in the last decade or so showing the connections in art, architecture and culture between Italy, particularly Venice, and its Eastern Mediterranean trading partners in Istanbul, Cairo, and elsewhere. (See Jerry Brotton’s *Renaissance Bazaar*, 2002, and his collaboration with Lisa Jardine,



Lauren Arnold, author of *Princely Gifts and Papal Treasures*, noticed a striking similarity between a scroll (left) signed by Tang Yin (1470–1523) and the famous eighth-century painting (right), *Salus Populi Romani*, in Rome’s Santa Maria Maggiore. Most likely missionaries had carried a copy of the iconic Roman work to China, where Tang Yin was inspired to adapt the image of the goddess Guan Yin in his portrayal of the Virgin Mary. Nishio Conservation Studio.

Global Interests: Renaissance Art between East and West, 1996).

In the ensuing age of European maritime expansion these cross-cultural connections expand beyond the Silk Roads and the Mediterranean to become global, especially with the spread of the Jesuit mission. *Art and the Jesuit Missions in Asia and Latin America, 1542–1773*, by Gauvin Alexander Bailey (2001), and *The Jesuits and the Arts*, edited by Bailey and John W. O'Malley, deal with the visual arts in this premodern occurrence of globalization. Another art historian, Michael Sullivan (1973), looks beyond the Jesuits and brings the interchange between European and East Asian art (Japan as well as China) up to the twentieth century in his pioneering study *The Meeting of Eastern and Western Art*.

In the four decades since Sullivan's broad-gauged survey, other art historians have conducted more focused research on particular cases of East–West contact and intra-Asian interactions. One example is the work of Aida Wong, now a resident in the United States but significantly from Hong Kong, that meeting place of international and transnational influences. Wong's recent book, *Parting the Mists: Discovering Japan and the Rise of National-Style Painting in China* (2006), internationalizes the art history and cultural history of twentieth-century East Asia. A shorter work of Wong's, "Landscapes of Nandal Bose (1882–1966): Japonism and Populism in Modern India," published in *Shadows of the Past: Okakura Tenshin and Pan-Asianism* and edited by Brij Tankha, is even more clearly world history, or world history through art, with its revelations of how pan-Asian thought arose in reaction to Western colonial dominance.

Later in the globalized twentieth century, these connections are even more obvious. To take just three of many art histories dealing with East–West artistic interchange in the last century, there is Shiji Takashima and Thomas Rimer's *Paris in Japan*, published by the Japan Foundation in 1987; Partha Mitter's *Art and Nationalism in Modern India* (1995), and Liliane Karnouk's 2004 study *Modern Egyptian Art, 1910–2003*.



Utagawa Sadahide (1807–1873). This *ukiyo-e* style Japanese print shows a Dutch family along the shoreline in Yokohama; a Dutch ship is at anchor in the background. As an example of a European subject rendered in traditional Japanese style, the print attests to the East–West cultural exchange. Library of Congress.

Such studies can contribute significantly to world historian's efforts to trace the emergence of global styles, global culture, and the complex questions of cultural identity they produce. This is also the area where visual and cultural studies may be most useful, and world historians should not ignore the work on small societies by cultural anthropologists well represented in the essay collection, *Exploring World Art* (Ventrux et al. 2006). Beyond the small societies and tourist art described in those essays, there are other examples of globally circulating pop culture and art, such as the

spread of Japanese anime and other elements of cross-Pacific pop largely through the Internet.

Comparisons

Comparative studies, at least in art, are less popular than they once were and perhaps not as obviously useful for world historians looking for a “web” of global connections rather than distinctly different civilizations. In 1954, the Harvard art historian Benjamin Rowland wrote in the introduction to his little book (at 140 pages, it’s an easy-to-handle volume compared to some of its thousand-page successors), *Art in East and West: An Introduction Through Comparisons*, that he was looking for, “accidental parallels . . . not designed to illustrate the influence of one culture upon the other” (1954, vii).

Since then, awareness of cultural influences has grown and broad categories like “East” and “West” have been much refined. But there still are comparative questions where the interests of the art historian, the social scientist, and the world historian overlap. How, in different societies at different times, does art work as an instrument for cultural cohesion, religious belief, and political control? Answering such questions requires some understanding of “style” (the language of art), as well as of social theory. For instance, look at monumentality and political authority in both the sphinxes and pyramids of Pharonic Egypt and the relief sculpture of ancient Mesopotamia—or, for the modern revolutionary period, how art was used to mobilize and indoctrinate the masses in Fascist Italy, Nazi Germany, Soviet Russia, and Communist China. (See Igor Golomstock’s 1990 book *Totalitarian Art*.) Religion, of course, is another promising field for an interdisciplinary approach: the ideological functions of icons, holy sites and architecture, art and the missionary enterprise—all the numerous areas where art is a basic source for the history of belief.

Global Patterns

Finally, stopping just short of meta-projects (Onian’s atlas or Summers’ global art theory) there is the search

for global patterns. There surely are others, but one of the most obvious is the virtually worldwide spread of post-Renaissance Western “realist” art in the late nineteenth and early twentieth centuries when, from Teheran to Tokyo, or from Moscow to Bangkok, it was seen as an essential component of modernity. (See John Clarke’s 1998 work, *Modern Asian Art*.) Closely behind that wave of Westernization comes the fusion of art and identity politics in the postmodern, postcolonial era. These are not national topics, and they are not just art history topics.

At the other end of recorded history with the emergence of cities, states, and empires there may also be similarities in the functions of art that go beyond comparison of the particularities of form and style. There may be patterns, if not one line of development, and art may be the key to unlocking them. Again, it is essential for world historians to engage in dialog with archaeologists and art historians, not just read the results of their research. Art and visual evidence in general are too important, too relevant to history everywhere to be neglected as world history goes forward in its task of creating a global past for an increasingly globalized future.

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See also Art—East Asian and European Connections; Art—World Art Studies; Porcelain; World History, Writing of

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Asia is the birthplace of some of the world's oldest civilizations. Despite studying the great diversity in religion, culture, geography, economy, and language, which has given (and still gives) rise to conflict, world historians examine how cultural exchange among Asian peoples helped to preserve their individual traditions.

Asia is the world's largest, most populous, and most culturally diverse continent. It combines extremes of height, depth, temperature, rainfall, humidity, aridity, and population density. People speak hundreds of languages from one end of Asia to the other. It contains different forms of human relationships to the land, including sparse but mobile pastoral groups, desert and jungle dwellers, large agrarian economies, powerful systems of interregional trade, and lately huge industrialized regions. It includes some of the world's fastest-growing nations as well as some of its poorest and most backward.

We can divide Asia into six basic cultural regions: (1) East Asia is dominated by China and Japan. (2) Southeast Asia is a region of island and peninsular countries and has no one dominant country or culture. (3) South Asia is dominated by India but houses Islamic and Hindu cultures. (4) Central Asia includes Iran and several countries formerly belonging to the Soviet Union. Persian (Iranian) culture has significantly influenced this region, as has the interaction between Sunni Islam and Shi'a Islam. (5) West Asia (excluding the Arabian Peninsula) is mostly successor states of the Ottoman Empire and post-World War I British and French protectorates. Turkey, Iraq, Israel, and Saudi Arabia are key countries in this oil-rich but politically troubled region. (6) North Asia is Russia. A

question here is whether the curve formed by the Ural Mountains, the Ural River, the Caspian Sea, and the northern slopes of the Caucasus Mountains separates "European" Russia from the much larger Russian domain east of this line. In his study of Asia's lands and peoples George Cressey argued that this demarcation made little sense agriculturally or economically. But geographers recognize it because of the West-East political and cultural stance adopted by Russian elites since the time of Czar Peter the Great.

From the perspective of world history the critical areas to look at first are those of West Asia, South Asia, and East Asia. Apart from Egypt and Nubia, these are the areas that gave birth to the earliest major civilizations. The civilization of Mesopotamia, developing around the valleys of the Tigris and Euphrates rivers, formed the matrix from which arose the Abrahamic religions of Judaism, Christianity, and Islam. These Asian religions and their peoples have exerted a huge impact on world history as both actors and victims.

Because of the antagonisms that developed among followers of these religions, many people see them as irreconcilable forces accounting for the clash of empires and nations and the rise and decline of civilizations. Certainly the divisions run deep and continue to influence the history of our times. Christianity and Judaism turned against each other during the later first century CE, beginning a long trail of suspicion and hatred that led up to the Holocaust of World War II. For eight centuries Christian and Islamic forces fought over control of Andalusia in Spain. Crusaders stormed Antioch and Jerusalem in 1098–1099, indiscriminately killing Muslims and Jews as infidels. Turkish Ottoman rulers conquered Constantinople

(Istanbul in modern Turkey) in 1453, terminating the Byzantine Empire and converting the Hagia Sophia (holy wisdom) church into a mosque. They sent armies into battle in eastern Europe, seeding Islam in the Balkans and laying the groundwork for Serbian resentment and slaughter of Muslims in Bosnia and Kosovo during the 1990s. Between 1894 and 1915 Ottoman forces persecuted Christian Armenians, culminating in the massacres of Armenian refugees in 1915. Reverberations of Christian–Islamic antagonism can be seen in the Soviet occupation of Afghanistan during the 1980s and the war in Chechnya today. Today seemingly intractable conflicts involving Christian, Jewish, and Islamic armed forces are continuing in Israel, Palestine, and Iraq.

The task of history, however, is not just to account for differences but to examine broader themes represented by these profoundly influential religions and the cultures and people who subscribe to them. These religions all adopted an approach to monotheism of which Abraham is widely regarded as the first exponent. They are advocates for certain values that include adherence to a divine creator, adoption of various sacred texts embodying the norms of Abrahamic monotheism, commitment to justice and mercy in human relations, and almsgiving to the poor. They have given rise to some of the world's most magnificent art, architecture, gardens, poetry, romances, philosophic reflection, and historical inquiry. Despite all the mutual destruction, they have engaged in trade, intermarriage, and cultural exchange and in various ways preserved each other's cultural traditions.

During recent years historians have begun to reexamine such common themes and to recognize their benefits to people living all over the world. Most practitioners of the Abrahamic religions are still far from embracing these commonalities. In this respect the global history of the last two hundred years, with its rising theme of Western disdain for, and exploitation of, a supposedly stagnant Asia, has not been conducive to better mutual understanding. Thus, an urgent task for contemporary world historians is to identify texts, historical eras, and personalities that facilitated the practice of positive values and exchanges between

Islam, Judaism, and the Christian West, as well as to clarify when and why such exchanges were abandoned and at what cost.

Earliest Civilization

The early history of south Asia presents another matrix for viewing the course of world history. The earliest civilization emerged along the Indus River, where researchers have uncovered the remains of splendid cities rich with artifacts. Unfortunately the written materials unearthed do not include substantial texts and have not yet been deciphered. Until fairly recently experts assumed that this culture was overrun during the middle of the second millennium BCE by Aryan peoples migrating from Central Asia. However, now more experts argue that natural calamities are more likely to have been the main cause for the abandonment of the Indus communities and that a cultural break did not necessarily occur between the people of that culture and the people who created the Vedic literature (relating to the Hindu sacred writings) and traditions identified with the Ganges River valley. If this argument holds, it will confirm a continuity of civilization in the Indian subcontinent going back five or six thousand years, which would in turn help to explain the reverence and tenacity with which so many Indian people subscribe to the texts and traditions of Hinduism.

In viewing world history from this region, one noteworthy theme is the rise and diffusion of Buddhism. Inspired by the life and teachings of the Indian philosopher Siddhartha Gautama (c. 560–480 BCE), Buddhism took root in northern India and developed rapidly under the reign of the Mauryan king and Buddhist convert Asoka (reigned 273–232 BCE). Gautama (known as the Buddha) taught a spiritual practice for gaining liberation from suffering that addressed universal human conditions and thus could be applicable in other cultural settings. As a religious convert, Asoka put the teachings of Gautama into action and sent missionaries to Kashmir, south India, Ceylon (Sri Lanka) and Burma (Myanmar). The historian H. G. Rawlinson described these missions as “amongst



A sixteenth-century Chinese painted wall molding with elements from Daoism and Buddhism, two major Asian religions. Photo by Chris Howell.

the greatest civilizing influences in the world's history." Theravada Buddhism, the earliest form of this religion, gradually extended farther into Central Asia and peninsular Southeast Asia.

During the reign of the great Central Asian Kushan king Kanishka (reigned c. 120–162) a new and extended form of Buddhism (Mahayana) came into being. Empowered by doctrines of redemption and rebirth it spread into Central Asia and thence to China, Korea, and Japan, carried partially by Central Asian missionaries but also by traders. The famous grottoes in Dunhuang in northwest China (in Gansu Province) attest to the extraordinary faithfulness of these practitioners, their ability to transcend unbelievable hardships en route, and the sophistication of their visions of human potential. This vision and energy can still be encountered among Buddhist practitioners throughout East Asia. Thus, they invite historians to understand how religious transmission can overcome cultural barriers, survive hostility and opposition, and integrate into cultures with different historical traditions.

A third form of Buddhism (Tantric) made its way across the Himalayas to Tibet, Mongolia, and parts of eastern Russia, where it continues to flourish. The dispersal of Tibetan people throughout the world since

1959—when eight years of occupation by China culminated in an uprising that led to the exile of Tibet's spiritual leader, the fourteenth Dalai Lama—has attracted considerable attention to Tantric Buddhism. The provocative visual symbology of Tantrism, its intense rituals and extremities of devotion (exhibited in the grueling kneeling and prostrating pilgrimages to Lhasa and Mount Kailas in Tibet), and its adherence to doctrines of karma and rebirth represent a challenge to the materialism pursued in both East and West. This challenge is still in its early days, and its impact remains to be determined.

Ironically Buddhism lost ground in India to a reviving Hinduism and to invasions by Islamic armies who laid waste to Hindu and Buddhist communities during the eleventh and twelfth centuries. More than 400 million Muslims now live in the Indian subcontinent, alongside 700 million or more followers of Hinduism. This has been an uneasy cohabitation. At its height the Islamic Mughal dynasty under Akbar (reigned 1556–1605) and Shah Jehan (reigned 1628–1657) provided a civilized and in many ways enlightened regime, of which the most famous legacy is the sublime Taj Mahal in Agra, India. Unfortunately, times have changed. Since the end of the British Raj (rule) and the partition of India in 1946, millions have died



This *ukiyo-e* (woodblock) print by the Japanese artist Ando Hiroshige (1797–1858) shows a large paper lantern hanging in a gateway that leads to the Kinryūzan Temple in Asakusa. Library of Congress.

in civil war, in religious confrontations, and in the ongoing war in Kashmir. The conflict between India and Pakistan—now both nuclear powers—continues to threaten world stability. The lack of understanding about India in the United States and the unwillingness to admit the extent to which religion can drive political agendas are problems that need attention if this threat is to be diminished.

Chinese Civilization

China also enjoys five thousand or more years of civilization. Its unique writing system emerged during the early to middle years of the second millennium BCE.

The doctrine of the Mandate of Heaven, through which a ruler's right to power was sanctioned by a divine being, began to take shape at the beginning of the Zhou dynasty (1045–256 BCE) during the eleventh century BCE, and the earliest poetic and historical documents followed not long after. From these early traditions emerged the philosophies of Confucianism and Daoism, which have done so much to shape political and cultural thinking in China and also in Korea, Japan, and Vietnam. From Confucianism emerged the systems of education and bureaucratic management through which China's agrarian empires were managed and its histories produced, and from Daoism came the investigation of being and nonbeing through which Chinese were able to practice ways of living that were an alternative to those required in the public arena. These alternative images of existence, onto which Mahayana Buddhism was superimposed, enabled Chinese culture to survive repeated fluctuations of expansion and contraction, including subjugation by foreign peoples, and to maintain a distinctive world perspective to the present day.

From the viewpoint of world history one can explore various themes in the Chinese context. One theme is the interaction between nomadic pastoral cultures and the powerful agrarian state that grew up around the Huang (Yellow) and Yangzi (Chang) rivers. This interaction goes back to prehistoric eras; it enters the historical record during the Zhou dynasty and becomes a dominant theme during the four hundred years of the Han dynasty (206 BCE–220 CE). At that time the Xiongnu were the dominant nomadic contenders, and much of Han statecraft was taken up in efforts to bring these aggressive raiders under control. During the fourth and fifth centuries Turkic peoples ruled much of north China. During the Song dynasty (960–1279) their role was taken mainly by Khitans and Jurchen peoples from northeast Asia. Then the Mongol regime, which had taken over north China under the rule of Chinggis (Genghis) Khan (c. 1162–1227) and his immediate successors, seized control of the rest and installed its own Yuan dynasty (1279–1368) over all China. The Ming dynasty (1368–1644) was able to push



the Mongols back into Inner Asia but not to subdue them. In 1644 another northeast Asian regime, led by Manchus, seized control of north China, setting up the Qing dynasty (1644–1911/12). During the next forty years it suppressed all opposition, and in the mid-eighteenth century it brought the remaining Mongol regimes to heel.

Thus, for long periods foreigners have ruled China. Mongols also imposed regimes with much bloodshed in central and western Asia and for a brief period appeared poised to overrun eastern Europe. Later Central Asian empires, such as those created by Timur (reigned 1370–1405) and the Mughal dynasty founded by Babur (1483–1530), were offspring of the original Mongol regimes, testifying to the remarkable and sustained military and political power consolidated by Chinggis Khan and his successors. That is why the history of these regimes demands the attention of world historians. Although these regimes arose from a marginal, steppe-bound cultural base, within a generation or two they were able to produce sophisticated rulers, such as Khubilai Khan (1215–1294) and Akbar, who were open to new ideas and personalities. Thus, the Polo family members of Italy were able to travel between Venice and eastern Asia, Roman Catholics to set up churches in the Yuan capital of Beijing, and Chinese Nestorian Christians to travel to western Asia and as far as France.

During the Mongol era Islam began to take root in China. Islam had been moving into Central Asia from the eighth century CE on, replacing Buddhism and other religions. Compared with Buddhism, however, its access into China and eastern Asia has been limited. The Hui segment of Chinese practitioners of Islam live in northwest and southwest China and in small numbers elsewhere, and Turkic Muslims live in larger numbers in China's most westerly province of Xinjiang. But in China, Muslims have run up against resistance and conflict from the dominant Confucian Han people. During the mid-nineteenth century this resistance and conflict resulted in two huge Muslim rebellions in southwest and northwest China, both of which were brutally suppressed. Thus, Islam remains strongest on the margins of Chinese civilization. It

has had much greater success penetrating Southeast Asia and has become the dominant religious and cultural presence in Malaysia and Indonesia.

Although the rise of the West is generally traced (in the West) to the explorations sponsored by the Portuguese prince known as Henry the Navigator, and to those of the Italian explorer Christopher Columbus and the Portuguese navigator Vasco da Gama, the activities of these men were of no concern in the Asian world, where much vaster political and military forces were deployed. From an Asian perspective one cannot speak seriously of the rise of the West until the later eighteenth century, when the British East India Company made inroads into the political and economic control of Bengal in India. Not until the mid-nineteenth century did British and U.S. forces successfully challenge the governments in Beijing and Tokyo.

But from the mid-nineteenth century on all areas of Asia came under increasing pressure from Western countries. Britain established hegemony over India and to a certain extent over Iran. France took control in Southeast Asia and Holland in Indonesia. British power overflowed into Burma and the Straits Settlements (now Malaysia and Singapore). Britain, France, the United States, and later Germany all competed for power in China and were able through diplomacy and coercion to force the Chinese government to yield treaty ports, concessions, extraterritorial legal privileges, and spheres of influence. Meanwhile, during the late seventeenth century czarist Russia began its long drive into eastern and Central Asia. To the east it encroached on the hinterlands of the Manchu regime and managed through adroit diplomacy to carve off huge territories that are now part of Russia, including the vital seaport of Vladivostok. By the mid-nineteenth century Russia's encroachment into Central Asia began to rub up against the hinterlands of the British Raj in Tibet, Afghanistan, and Iran, precipitating what became known as the "Great Game" for control of the petty kingdoms and principalities throughout Central Asia. Because of czarist Russia's ability to deploy superior military forces this was a game that czarist Russia and its successor, the Soviet Union, were

destined to win. Indeed, not until the Soviet debacle in Afghanistan during the 1980s and the collapse of the Soviet Union shortly thereafter was Russian power in Central Asia significantly set back.

Rise and Fall

An understanding of the forces underlying the rise of Western imperialism and the decline of Asian sovereignty has long relied on two basic arguments. The first is the inherent superiority of Western values as expressed in democracy and market capitalism, a line of thinking originating with the Scottish economist Adam Smith and the French *philosophes* (deistic or materialistic writers and thinkers of the eighteenth-century French Enlightenment) and developed by the German sociologist Max Weber and others. The second is the Leninist argument that Western imperialism is an exploitative extension of bourgeois capitalism (manifested, for example, in the sale of opium) that would collapse with the achievement of worldwide socialist revolution. During most of the twentieth century these arguments battled for mastery. The collapse of Western colonialism during and after World War II, the retreat of the British from India, and the crowning success of the Chinese Communist revolution appeared to validate the Leninist case and put the West on the defensive. The postwar revival of the Western and Japanese economies, followed in due course by the collapse of the Soviet Union, China's near abandonment of its socialist economy during the 1980s and 1990s, and continuing political travails in Islamic countries appeared to do the reverse. Leninist arguments now carry little weight, and Western market capitalism and democracy seem to be in the ascendant.

But before Western pride goes too far, we should recall the deep roots of non-Western civilizations and consider how their values could influence global history in the future. Eastern civilizations are not inevitably at a disadvantage against the West, as the rapid rise of Japan during the late nineteenth and early twentieth centuries testifies. Today China is on the march. During the last twenty-five years China's

economy has been growing at an average annual rate of at least 7 percent. Large areas of urban China (a region of 400–500 million people and growing rapidly) have converted themselves into modern cities with new transportation and telecommunication infrastructures and massive new developments in industrial plants, office buildings, and high-rise housing. The Pearl River delta region is becoming the workshop of the world, just as Britain was during the later nineteenth century, and Walmart is one of its leading customers. India is about twenty years behind China, but developments in Bangalore indicate what could be achieved elsewhere during the next few decades. No one can hold down such deep-rooted cultures indefinitely. One hundred and fifty years of subordination to the West is a long time, but that time is now abating, at least for China and India, as it already has for South Korea, Taiwan, Hong Kong, and Singapore and as it did so forty years ago for Japan.

For other areas of Asia the future is less rosy. In Laos, Cambodia, Myanmar, Afghanistan, Tajikistan, Turkmenistan, Bangladesh, and Pakistan or in communities in Iraq, Palestine, and North Korea and in some rural areas of China, India, and Siberia, life is hard, and governments are too often corrupt and oppressive. Consider these data: The infant mortality rate in Afghanistan in 2009 was 151.95 deaths per 1,000 live births. In Laos it was 77.82 per 1,000, in Myanmar 72.11 per 1,000. However, in Japan it was 2.79 per 1,000. Literacy in Afghanistan was 28.1 percent, in Laos 68.7 percent, in Myanmar 81 percent, and in Japan 99 percent. In every case except the last, literacy of women is much lower. For Afghanistan the gross domestic product per person is calculated at \$800 per year; in Myanmar it is \$1,500. In Japan it is \$34,100. Figures such as these help to explain why Afghanistan and Myanmar (Burma) are now the world's leading producers of opium, and why warlords control their governments.

Does it have to be that way? Two thousand years ago Afghanistan flourished under great empires enriched by the Ghandaran culture that grew out of the invasions of Alexander the Great. Afghanistan was the site of one of the world's greatest Buddhist

Everyone has been made for some particular work, and the desire for that work has been put in every heart. • Rumi (1207–1273)

monuments at Bamiyan until the Taliban destroyed it in 2001. Silk Roads commerce at its height brought wealth and opportunity into Central Asia. Under Abbasid and Seljuk rule Samarkand in Uzbekistan became one of the world's richest and most cultured cities, the home of the brilliant eleventh-century poet and mathematician Omar Khayyam. Although devastated by Mongol invasion, the city rose to new heights as the capital of the Timurid Empire and became one of the architectural wonders of the world. Balkh in Afghanistan was the birthplace in 1207 of Rumi (Jalal ud-Din Rumi, a Sufi Muslim mystic) and one of the world's most inspired poets. No region is without its glories or follies, and Asia is a rich source for the study of civilization and its problems.

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See also Afro-Eurasia; Akbar; Art—China; Art—East Asian and European Connections; Art—South Asia; Art—Southeast Asia; Art—West Asia; Migration, Asian; Asoka; Aurangzeb; Baha'i; British East India Company; Buddha; Buddhism; China; Chinese Traditional Religion; Chinggis Khan; Confucianism; Confucius; Cyrus the Great; Daoism; Delhi Sultanate; Dutch East India Company; Eurasia, Inner; Han Wudi; Harappan State and Indus Civilization; Hinduism; Ho Chi Minh; Hong Merchants; *I Ching*; Islam; Islamic World; Jainism; Japanese Empire; Khmer Kingdom; Kushan Empire; Laozi; Mahavira; Mao Zedong; Mencius; Mesopotamia; Mongol Empire; Mughal Empire; Orientalism; Pastoral Nomadic Societies; Persian Empire; Polo, Marco; Porcelain; Qin Shi Huangdi; Revolution—China; Revolution—Iran; Revolutions, Communist; Ricci, Matteo; Rumi; Sasanian Empire; Shinto; Sikhism; Silk Roads; Sima Qian; Srivijaya; Steppe Confederations; Sui Wendi; Sui Yangdi; Süleyman; Sun Yat-sen; Tang Taizong; Tea; Timur; Trading Patterns, China Seas; Trading Patterns, Indian Ocean; Turkic Empire; 'Umar ibn al-Khattab; Warfare—China; Warfare—Islamic World; Warfare—South Asia;

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Asoka

(c. 292–232 BCE)

MAURYAN EMPEROR

After expanding the Mauryan Empire in third-century-BCE India, Asoka spread Buddhism and his principles of *dhamma* (dharma)—a philosophy that encouraged social responsibility, tolerance, and respect for all living things—throughout his empire. Through his rule, Asoka encouraged the proliferation of nonviolent practices, which also strengthened and unified the empire.

Asoka ruled the Mauryan Empire in ancient India from approximately 269 to 232 BCE. The empire was established around 321 BCE by Asoka's grandfather, Candragupta Maurya (d. c. 297 BCE), soon after the withdrawal of Alexander III of Macedon (Alexander the Great, 356–323 BCE) from northwestern India. With its capital at Pataliputra (modern Patna), it was an exceptionally vast, centralized, and long-lived empire. After Asoka's death, the Mauryan Empire went into decline, succumbing to the Sunga dynasty in 185 BCE.

Asoka is a towering figure in India's national historical narrative and in the annals of Indian and Sri Lankan Buddhism. He is remembered primarily for his renunciation of war and violence, his conversion from Hinduism to Buddhism, his patronage of Buddhism, and his conception of a novel philosophy of moral and righteous behavior (Pali: *dhamma*; Sanskrit: *dharma*).

After a struggle for the throne, Asoka succeeded his father, Bindusara (d. 272 BCE), in 269 BCE following a four-year interregnum. He had gained administrative experience governing the provinces of Taxila and Ujjain during Bindusara's reign. The art of administration was finely developed in the Mauryan empire,

as is clear from the *Arthashastra*, a treatise on statecraft by Kautilya, Candragupta Maurya's principal adviser and minister.

As king, Asoka extended the empire territorially. Around 260 BCE he conquered Kalinga (modern Orissa). The conquest had unusual consequences. In Asoka's words: "[T]he Beloved of the Gods [Asoka] felt remorse, for, when an independent country is conquered the slaughter, death and deportation of the people is extremely grievous to the Beloved of the Gods and weighs heavily on his mind" (Thapar 1997, 255). Following the Kalinga campaign, Asoka converted to Buddhism, advocated nonviolence, and came to believe in conquest through moral suasion rather than war. It is important to note, however, that he only renounced violence once empire building was complete and almost the entire Indian subcontinent, excluding friendly kingdoms in the south, was under Mauryan sway.

Under Asoka's auspices, Buddhism developed into a major religion. At the Third Buddhist Council (250 BCE), held at Pataliputra during Asoka's reign, it was decided that Buddhism would actively seek converts. Asoka built stupas (reliquary mounds) and monasteries and sent missions to neighboring countries like Ceylon (now Sri Lanka).

A paternalistic ruler who addressed his subjects as "my children," Asoka sought to instill in them his concept of *dhamma*. This was a humanistic philosophy based on social responsibility, tolerance, and respect for all living beings. It is possible that *dhamma* served the pragmatic function of providing a unifying ideology for an exceptionally diverse and multicultural empire. Special officers were appointed to ensure the practice of *dhamma* throughout the realm. Asoka



himself traveled extensively to keep abreast of happenings in his empire.

Edicts inscribed on pillars and rocks carried Asoka's word to the far reaches of his empire while he lived and left it to posterity after he died. The Asokan pillars that survive are stone monoliths, capped by animals like lions or bulls. (The capital of lions surmounting one such pillar, at Sarnath, is the national

symbol of contemporary India.) It is through his edicts that Asoka has emerged as a significant historical figure from the mists of time. In 1837 James Prinsep, a British epigraphist, deciphered a pillar inscription from Delhi that referred to a king "*Devanampiya* [beloved of the gods] *Piyadassi* [of gracious mien]." This was connected to pillar and rock inscriptions found over a large expanse of territory,

from modern Afghanistan in the northwest to Bengal in the east and Mysore in the south. A single provenance was established for the inscriptions and Asoka, renowned in Ceylonese Buddhist chronicles, was identified as their author.

The edicts were written in the vernacular (mostly Prakrit but also Greek and Aramaic in the northwest). A few inscriptions were declarations of Asoka, as a lay Buddhist, to the Buddhist religious community. Most were public proclamations instructing people in the way of *dhamma* or detailing Asoka's good works, such as the construction of hospitals and roads and the planting of shade trees.

Asoka, in the tradition of his father and grandfather, had diplomatic contacts with foreign kingdoms such as Syria, Egypt, Cyrene, Epirus, and Macedonia to the west of India and Ceylon and southern Indian kingdoms to the south. He sent missions abroad to popularize his concept of *dhamma*.

Historians have shown that accounts of Asoka's idealism need to be tempered with recognition of his pragmatism. His abjuring of violence was

opportune, and his concept of *dhamma*, as mentioned earlier, may well have been designed to unify the diverse peoples of his empire. Nonetheless, Asoka's name is remembered in world history for his promulgation of Buddhism and his endorsement of nonviolence.

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See also Mughal Empire

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Assyrian Empire

The Assyrian Empire was the first to bring together the various cultures of the Near East into a single political entity. Governing the area presently known as the Middle East, the Assyrian Empire was at its peak for about three hundred years (from the ninth to sixth centuries BCE), and its impact still presents itself in modern life through mediums such as art and biblical references.

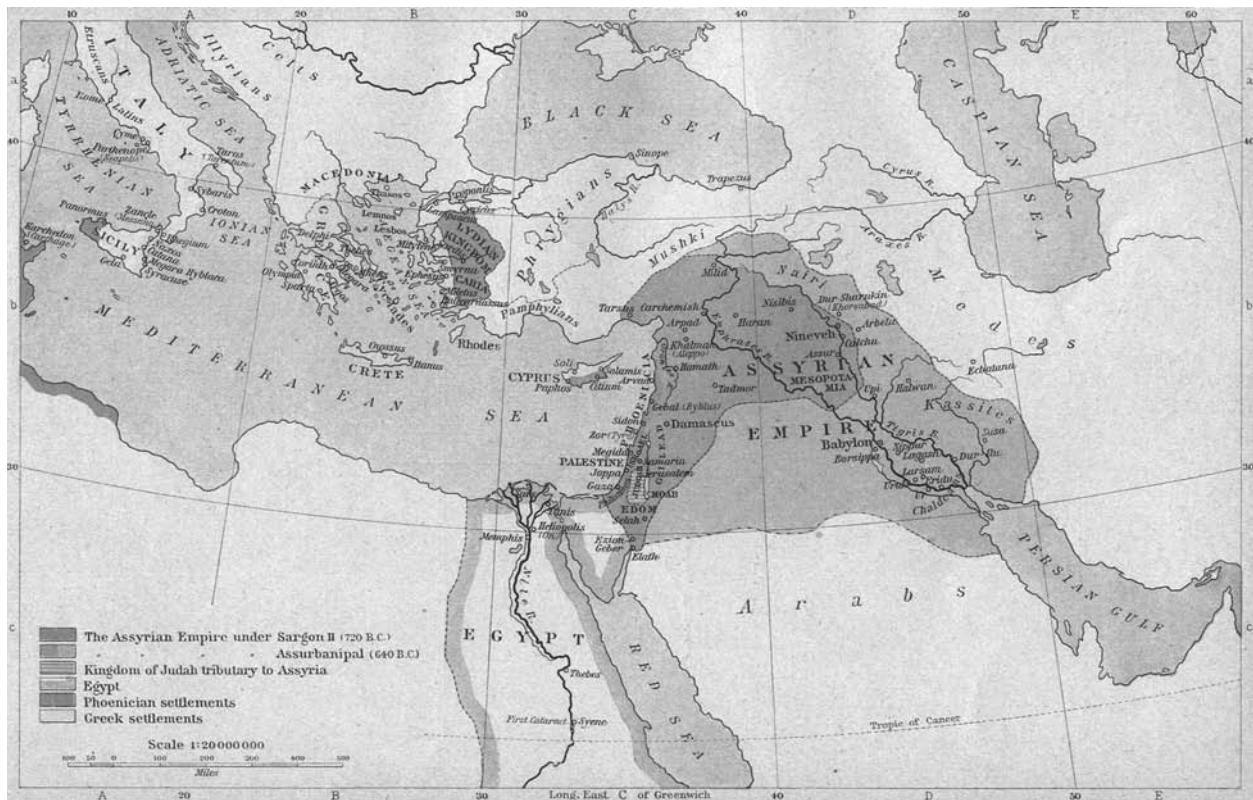
During its heyday, between about 900 and 600 BCE, the Assyrian Empire was arguably the largest and most complex political formation the world had yet seen. After its initial stage of expansion during the ninth century BCE, Assyria came to dominate the entire region that we today call the Middle East: from the Zagros Mountains in modern Iran to the eastern coast of the Mediterranean, and from the Taurus mountains in southern Turkey to the Persian Gulf. Through their imperial policies, the Assyrians became a driving force in shaping the political, cultural, and demographic makeup of the ancient Near East, setting the stage upon which much of the drama of the Old Testament was played out, and helping to preserve and transmit much of the tradition of Mesopotamian civilization to the Persian and Mediterranean worlds. In so doing, the Assyrians left an indelible mark on the development of civilization within and beyond the Middle East.

Origins and Background

The origin of Assyria is closely related to the fortunes and misfortunes of the city of Ashur (modern Qalat Sharqat in Iraq), whence Assyria gets its name. For

much of the latter half of the third millennium BCE, Ashur had been home to a northern outpost of the Sumero-Akkadian civilization emanating from the alluvial plains of southern Iraq. However, during the upheaval that marked the end of the third millennium, the site was abandoned. Assyrian historiography recorded in the Assyrian King List, which describes the earliest Assyrian kings as kings “who lived in tents,” has led many scholars to the conclusion that at the beginning of the second millennium, nomadic Assyrians used the abandoned mound of Ashur as a seasonal camp, regularly performing religious rituals there. The site eventually became home to a permanent temple to Assyria’s chief god (also called Ashur) leading to the settlement of what had been several dispersed nomadic groups on the already ancient mound surrounding the temple. The early political development of the Assyrian state was influenced by two factors: the structure of the Sumerian and Akkadian city-states of alluvial southern Iraq, and the tribal traditions of the early Assyrian nomads.

The position of Ashur, on the Tigris River some one hundred kilometers south of Mosul in northern Iraq, has distinct advantages and disadvantages. The fact that the site lies almost directly on the line below which rain-fed agriculture was not feasible in most years meant, first, that the city never had a reliable agricultural hinterland, and, second, that the Assyrian capital was located far from the important metal and lumber source areas of western Iran and southeastern Turkey. Thus, from the very beginning, the Assyrians were forced to look beyond their local environs for the resources and manpower necessary for state building. The advantage of the location of Ashur lies in the fact



The Assyrian Empire and the region of the eastern Mediterranean, 750–625 BCE. *The Historical Atlas*, William R. Shepherd, 1923.

that it was at the intersection of several important east-west and north-south trade routes linking highland Iran and the Persian Gulf with eastern Anatolia and the Mediterranean.

The circumstances imposed by the location and environmental setting of the city of Ashur also influenced the development of the Assyrian state. The first segment of Assyrian history that comes into focus in the textual record is that of a commercial empire established by Assyrian merchants during the Old Assyrian period (c. 1900–1750 BCE). Although the Assyrians did not control territories beyond the general vicinity of the city of Ashur at this time, they established a vast trading network with outposts as far away as central Anatolia. Assyria first emerged as a territorial state under the Amorite king Shamshi-Adad I (reigned c. 1830–1776 BCE). Shamshi-Adad and his sons progressively extended Assyrian control until they could claim dominion over most of upper

Mesopotamia (what is today Syria and northern Iraq). However, the Old Assyrian state was short-lived. Soon after the death of Shamshi-Adad, most of Assyria's former holdings were overrun by Hammurabi of Babylon (reigned c. 1792–1750 BCE). Through much of the succeeding period Assyria lived in the shadow of Kassite Babylonia and the Hurrian Empire of Mitanni. Assyria did not play a significant role on the international stage again until the reign of Ashur-uballit I (c. 1366–1330 BCE), and over the next 150 years the Middle Assyrian state again came to dominate the political scene in upper Mesopotamia.

The beginnings of an imperial political structure first appeared in Assyria during this middle period. The Middle Assyrian state combined the traditions of monarchy established by Shamshi-Adad during the Old Assyrian period with the administrative structures of the Babylonians and Mitanni to create a complex political and administrative apparatus capable



Sculptures of winged bulls, often found at the entrances to Assyrian temples, symbolize the fusing of mental and physical power.

of maintaining a new level of political authority over vast areas of the ancient Near East. But the balance of power among the great kings of the Late Bronze Age (c. 1500–1100 BCE) began to crumble at the end of the thirteenth century BCE, leading to a period of collapse and mass migration that profoundly changed the political and demographic makeup of the region. From the rubble of the Late Bronze Age rose the Neo-Assyrian Empire.

The Neo-Assyrian Empire

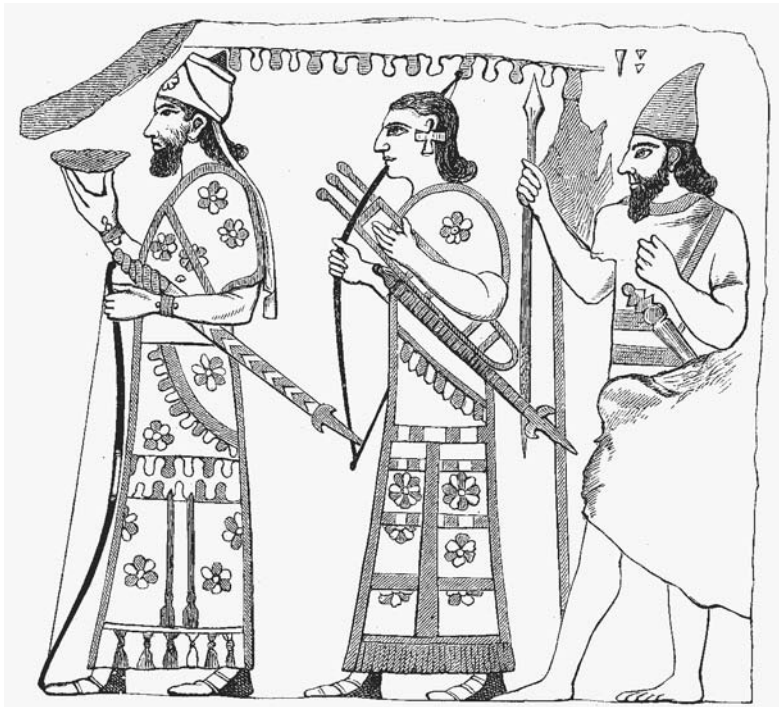
Neo-Assyrian imperialism built upon and surpassed the achievements of the Middle Assyrian state. The political centralization, imperial ideology, and militaristic tendencies of the Middle Assyrian state were all carried over, in one form or another, to the Neo-Assyrian system, but the scale and efficiency of the Neo-Assyrian Empire was, in its time, unprecedented in world history. Assyria's new rise to prominence was the result of a complex and interrelated set of political, economic, and social factors that are difficult to sort out. The turbulent history of the region, as well as the reemergence of Babylonian and Hurrian states and the constant threat posed by the Arameans, made increased militarism a prerequisite for Assyrian survival. Inefficient farming techniques and the shortage of labor were constant problems in the Assyrian heartland. These factors, combined with the disruption of the trade routes established in the Old Assyrian period and the political instability of resource areas, undoubtedly made imperial expansion and political control an attractive solution to declining revenues.

Whatever the factors that caused Assyria to make the transition from state to empire, the final outcome was impressive, for Assyria was the first state to unite the diverse cultures of the ancient Near East into a single political unit.

Ashur-dan II (r. 934–912 BCE) was the first Neo-Assyrian king to conduct regular military campaigns after the turn of the millennium, and his reign is therefore considered by many to mark the beginning of the Neo-Assyrian Empire. This king spent most of his energy attempting to reassert Assyrian sovereignty over territories formerly controlled by the Middle Assyrian monarchs, and in so doing he laid the foundation for the ambitious campaigns of his best-known successors, Ashurnasirpal II (r. 883–859 BCE) and Shalmaneser III (r. 858–824 BCE).

During the reign of Ashurnasirpal, Assyrian expansionism began to take on a truly imperial character. Assyrian royal ideology required Assyrian monarchs to show their strength by setting out on regular military campaigns. However, prior to the reign of Ashurnasirpal, most Assyrian military campaigns had been little more than organized raids on neighboring lands. Ashurnasirpal II altered this tradition through the consolidation of military gains in the newly established provinces. This consolidation included the construction of provincial capitals and outposts, the establishment of a system of vassal state alliances, and the deportation and resettlement of vanquished peoples in newly conquered lands. Ashurnasirpal was also the first of a series of Neo-Assyrian kings either to relocate the imperial capital (from Ashur to Kalhu, then to Dur-Sharruken, and finally to Nineveh) or to construct a new royal palace in the existing capital to act as a new military and administrative center of the empire.

The strict organization of the Assyrian provincial system was probably undertaken during the reign of Tiglath-pileser III (r. 744–727 BCE). Tiglath-pileser, who himself had been a provincial governor and was a usurper to the throne, knew full well the dangers of allowing provincial administrators too much independence. As part of his effort to tighten the reigns on Assyria's vast holdings, Tiglath-pileser III



A drawing of a religious leader and warriors copied from a fragment painted on an Assyrian tile.

probably reorganized governmental hierarchies and established a system in which officials responsible directly to the king monitored the activities of provincial governments. Assyria's system of deportation and resettlement also reached its peak during the reign of Tiglath-pileser III, when ancient documents record tens of thousands of people being moved to and from nearly all the imperial frontiers.

The crown jewel of Assyrian military expansion came when Esarhaddon (r. 680–669 BCE) conquered the Nile Delta and Egypt's original capital, Memphis. Egypt proved to be a difficult prize, however, that the Assyrians could not hold. Esarhaddon died during his second attempt to conquer Egypt, and it was up to his son Ashurbanipal (r. 668–635 BCE) to finish the job. By this point, however, considerable wrinkles had formed in Assyria's imperial plans. To begin with, premodern transportation technology made governing the far-flung provinces extremely costly, while considerable effort was spent in the attempt to subjugate Egypt. In addition to this, a civil war broke out between Ashurbanipal and his half-Babylonian brother, who had been installed as king of Babylon by Esarhaddon.

Very few details of the last years of the Assyrian Empire are preserved in the historical record. Although fall of the empire has often been referred to as a “collapse,” the momentous events marking the end of the empire were not the work of an external rival group: it was the Babylonians, along with their Median and other allies, who eventually destroyed the cities of the Assyrian heartland, including the capital at Nineveh, which fell in 612 BCE. Thus the empire was destroyed from the inside, with one of the most important groups in the ethnic mix of the empire, the Babylonians, inheriting Assyria's holdings largely intact.

Assyria's Legacy

The Assyrian empire is well known from references in the Bible. Perhaps the most famous of these is to the Assyrian king Sennacherib (r. 704–681 BCE), who attacked Judah and besieged Jerusalem during the reign of Hezekiah in 701 BCE. Indeed, the Assyrian threat to the relatively insignificant state in Judah was the context in which several chapters of the Old Testament



are set (Kings and Isaiah, for example); the Assyrians had a significant impact both on the world of the Old Testament and on later views of that time.

The image of Assyria as a great imperial power also reaches the modern world through art. Excavations that took place in northern Iraq during the mid-to-late nineteenth century not only awakened the general public to the archaeological reality behind the Biblical stories, but filled the museums of Europe with countless Assyrian treasures. Perhaps the most famous of these Assyrian artifacts are the carved stone wall panels that once adorned the Assyrian palaces.

Several studies that have attempted to reassemble the now-dispersed stone panels argue that Assyrian art and architecture served as an integrated system for the transmission of Assyrian ideology and culture. However, the historical significance of the Neo-Assyrian Empire lies neither in modern perceptions of the empire, nor in the influence the Assyrians imposed on the creation of the early Judeo-Christian world. Rather, Assyria's importance lies in the fact that the Assyrian state that emerged during the Mesopotamian Iron Age represented an entirely new level of political development. The Assyrians were

Imperialism is based upon a persistent misrepresentation of facts and forces chiefly through a most refined process of selection, exaggeration, and attenuation, directed by interested cliques and persons so as to distort the face of history. • **J. A. Hobson (1858–1940)**

the first true empire builders, and it was upon their legacy that later empires, such the Persian, Greek, and Roman, were modeled.

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See also Mesopotamia

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Augustine, Saint

(354–430 CE)

EARLY CHRISTIAN THEOLOGIAN

Best known for his *Confessions* and *City of God*, the theologian Augustine of Hippo wrote numerous works after his conversion to Christianity in 386. His profound and lasting influence on Western Christianity and philosophy led to his canonization by popular acclaim, rather than by papal edict.

Augustine of Hippo (354–430 CE) was the dominant Christian theologian between Christian antiquity and the high Middle Ages. A prolific writer, he authored ninety-three books, hundreds of letters, and thousands of sermons. He was born in Tagaste (today Souk-Ahras, Algeria) in the Roman province of Numidia. Patricius, his father, belonged to the middle class and was a pagan. Monica, his mother, was a devout Christian who had him enrolled as a catechumen at an early age.

Augustine received his elementary and secondary education in Latin and Greek in Tagaste and Madaura. For higher studies, he was sent to Carthago, the half-pagan metropolis of Numidia. Here he formed a liaison with a woman (name unknown) with whom he lived for fifteen years and who bore him a son, Adeodatus.

Hitherto dissolute, Augustine came to a turning point about 373, when he was inspired by a reading of Cicero's *Hortensius* to seek "wisdom." Attracted by the cosmology and moral teachings of Manichaeism, he became a convert to that dualistic Gnostic religion. Nine years later, having become convinced that it lacked rationality, he abandoned it. In 384, after about ten years of teaching rhetoric in Tagaste, Carthago, and Rome, Augustine secured

an appointment as professor of rhetoric and court orator in Milan, then the capital of the Western Roman Empire. Now a widow, Monica followed him to Milan and, concerned for his spiritual and economic welfare, arranged for his engagement to a Christian heiress. Augustine dismissed his concubine but retained their son. In his *Confessions* Augustine was to recall that separation from his mistress caused him excruciating pain.

As an imperial representative, Augustine met Ambrose, the scholarly bishop of Milan, whose sermons persuaded him that it was possible to be both a Christian and an intellectual. However, a close friendship with Ambrose did not develop, and Christian Neoplatonists in Milan were more influential in bringing Augustine to an acceptance of Christianity. In July 386, according to the dramatic account in the *Confessions*, Augustine surrendered to Christ. Resigning his professorship, and terminating his engagement with the Milanese heiress, he was baptized by Ambrose on Easter Sunday in 387. A new life dawned for Augustine, and he determined to return to Africa to establish a monastery. On their way back to Africa, Monica died and was buried in Ostia, Italy. In his *Confessions*, Augustine paid a very loving tribute to his mother.

Although Augustine loved and respected the two principal women in his life, his mother and his concubine, his writings were to reinforce early Christian antifeminism. Augustine wrote that only men were made in the true image of God; women were in the image of God only insofar as they were wives, engaged in procreation. Women were symbols of carnality, although they too with God's grace could attain salvation.



Sandro Botticelli, *St. Augustine in His Cell* (c. 1480). Fresco. Augustine of Hippo meditates under the Vespucci family coat of arms.

Augustine's fame as a preacher and theologian developed after his return to Africa. In 391, while on a visit to the port city of Hippo (or Hippo Regius; today Annaba, Algeria), he had the priesthood virtually thrust upon him by the local congregation. In 396 he became sole bishop (he had been co-bishop with Valerius) and remained such until his death.

As custom then dictated, he was both chief ecclesiastical officer and civil magistrate. Indefatigable, he found time to lead a semimonastic life, attend religious conferences, and write numerous theological tracts. Original sin, grace, predestination, freedom of the will, Scripture, heresy, philosophy, history, and

sexuality were among the diverse topics that engaged his attention.

Two works became classics: the *Confessions* and *City of God*. Written in 397, the *Confessions* conveyed profound psychological and spiritual insight. Though relating some details of his childhood and adulthood, Augustine's intention was to glorify God, express repentance for his sins, and encourage others to seek God. The *City of God*, written between 414 and 427, was prompted by a shattering event, the sack of Rome in 410. In the first part of this work, Augustine set out to show that the disaster was not caused by desertion of pagan temples for Christian altars, as some Romans maintained, but by inner rot. In the second part, Augustine elucidated a philosophy of history that was linear, not cyclical. He argued that the result of the sin of Adam and Eve was the creation of two cities, two societies, the City of Man (the earthly city) and the City of God (the heavenly city). The two were not separate but intertwined, to be separated only at the Last Judgment.

In the early church Augustine was best known for combating heresy. His first fifteen years as bishop of Hippo were dominated by controversy with Donatism, a puritanical branch of Christianity that had a strong presence in Africa. In contrast with Donatist views, Augustine maintained that apostates who repented did not require rebaptism, and that the sacraments had a validity of their own, regardless of the state of grace of their administrators. After the issuance of an imperial edict, Augustine, who had sought a meeting ground with Donatist bishops, reluctantly acquiesced in the use of force against the Donatist churches. The concept of religious freedom was unknown at that time.

Other teachings that Augustine struggled against were Manichaeism, which he knew from personal experience, and Pelagianism. A recent arrival into Africa, Pelagianism denied that original sin had totally vitiated human nature. In opposition to this thesis, Augustine contended that the sin of Adam and Eve, passed on to all of posterity, had alienated human

Faith is to believe what you do not see; the reward of this faith is to see what you believe. • **Saint Augustine (354–430 CE)**

persons from God and therefore reconciliation could be achieved only by baptism.

Augustine died 28 August 430 during the Vandal siege of Hippo. A cult of Augustine spread quickly in Europe, and his canonization was not the result of any papal procedure (none existed at the time) but of popular acclaim. In 1295 Pope Boniface VIII proclaimed Augustine a doctor of the church.

Augustine's influence on western Christianity was unparalleled until Thomas Aquinas appeared in the thirteenth century. Augustinianism with its Platonic overtones gave way to Scholasticism with its Aristotelian underpinnings. During the Reformation era, Luther and Calvin revived Augustinian ideas regarding predestination. In more modern times Augustine's influence may be found in the works of Blaise Pascal, Jacques Maritain, and Joseph Ratzinger (elected as Pope Benedict XVI in 2005), among others, as well as in some of the documents of Vatican II. Though a man of his time in most matters, Augustine as a

theologian and philosopher showed independence and originality.

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See also Religion—Roman Catholicism

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Aurangzeb

(1618–1707)

RULER OF MUGHAL INDIA

Aurangzeb's aggressive policies expanded Mughal territory in seventeenth-century India to its zenith but sowed the seeds for the empire's eventual dissolution. The exhaustive military campaigns, hefty taxes, aggressive defense of imperial policy, and heavy-handed patronage of Islam that characterized Aurangzeb's rule divided and weakened the empire over the course of his forty-nine-year reign.

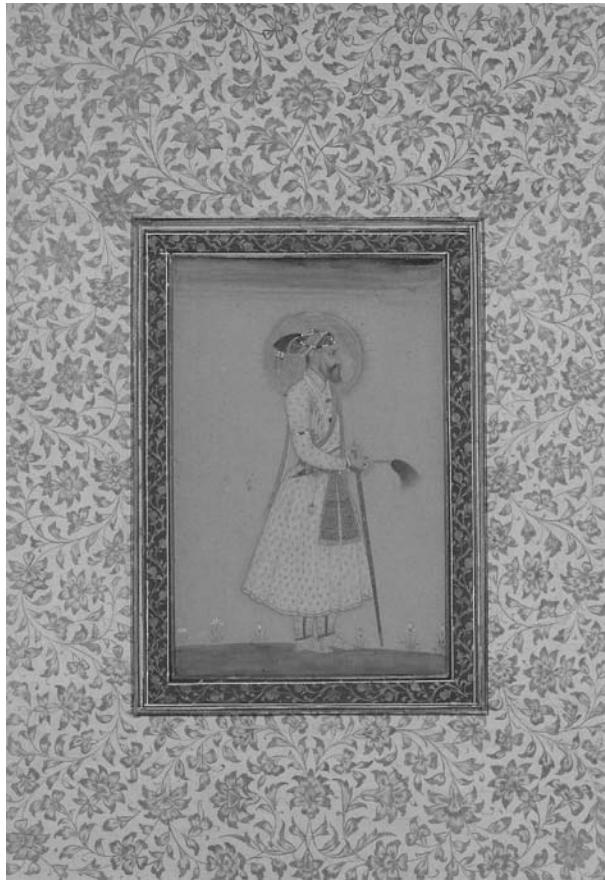
Muhi-ud-Din Muhammad Aurangzeb 'Alamgir was the last of the great Mughal emperors, rulers of much of present-day South Asia from 1526. Although Aurangzeb displayed military talent, administrative acumen, and political tenacity over the course of a forty-nine-year-long reign (1658–1707), his legacy was an ambiguous one. While Aurangzeb succeeded in pushing the Mughal Empire's frontiers to their furthest limits, the ceaseless warfare that this entailed exhausted the empire and degraded its administrative machinery. Aurangzeb's attempts to refashion an inclusive Mughal political ideology and culture along Islamic lines also opened political and religious fissures within the Mughal polity that his successors were unable to surmount.

Aurangzeb's early military success led his father (crowned as Emperor Shah Jahan in 1628) to appoint him governor of the Deccan, in the center of the subcontinent, in 1636. After serving in that capacity until 1644, Aurangzeb served as governor of Gujarat (1645–1647) in the west, Multan (1648–1652) in present-day Pakistan, and, for a second time, the Deccan (1652–1658). He also commanded imperial expeditions against Balkh (1646) and Kandahar (1649 and 1652) in what is now Afghanistan.

Cumulatively, these assignments allowed Aurangzeb to build a reputation as a skillful general and an energetic administrator.

Aurangzeb's eldest brother and primary political competitor, Dara Shikoh, viewed his rising fortunes with particular alarm. By the mid-1650s the imperial family had effectively fractured; whereas Aurangzeb's other brothers—Shuja and Murad Bakhsh—allied themselves with Aurangzeb, Shah Jahan sided with Dara Shikoh. Tensions finally culminated in a bitter fratricidal conflict when Shah Jahan was taken ill in the fall of 1657. Over the next year, Aurangzeb emerged as the new Mughal emperor, overcoming military challenges by all his brothers and dethroning his father (who died under house arrest in 1666).

From the onset of his reign, Aurangzeb set the Mughal Empire on an aggressively expansionist course. In addition to campaigns against Bijapur (1660–1661, 1665–1666) in the west, Mughal armies moved against Palamau in Bihar (1661), Cooch Behar and Assam (1661–1663) in the northeast, and Arakan, presently divided between Bangladesh and Myanmar (1664). In subsequent decades Aurangzeb conquered the Deccan sultanates of Bijapur (1686) and Golkonda (1687) and extended Mughal authority over most of southern India. Aurangzeb's military record nevertheless was a mixed one. Besides, no lasting gains in Assam the Mughals were unable to crush the military challenge posed either by the Maratha rebel Sivaji (d. 1680) or his successors in the Deccan, even though Aurangzeb took personal charge of field operations after 1681 and succeeded in capturing and executing Sivaji's son and successor, Sambhaji, in 1689. Ultimately, decades of continuous warfare against the Marathas stymied the



Unknown Mughal court artist, *Emperor Aurangzeb*. Opaque watercolor and gold. Ackland Art Museum.

consolidation of imperial control over the south, led to plummeting morale within Mughal ranks, and corroded the longstanding aura of Mughal military invincibility.

Aurangzeb's lifelong interest in military affairs was matched by attempts during the initial decades of his reign to improve the Mughal administrative machinery. This was especially true with regard to the collection of land revenue taxes, the cornerstone of Mughal finances. Intensifying imperial pressure on local landholders, however, catalyzed a series of anti-Mughal revolts among various groups from 1669 through 1697. By the 1690s, Aurangzeb's preoccupation with the war in the Deccan and increasing political instability resulted in weakening imperial

oversight with severe long-term implications for the financial viability of the empire.

After he became emperor, Aurangzeb zealously—and often shortsightedly—defended his own imperial prerogatives. Two examples stand out. First, Aurangzeb willingly triggered a massive rebellion among the Rajputs between 1679 and 1681, in order to protect his right to place a candidate of his choosing on the throne of Marwar (Jodhpur). Aurangzeb's actions are significant because they permanently alienated many Rajputs, who had previously ranked among the Mughal dynasty's strongest supporters. Second, all of Aurangzeb's five sons suffered the ignominy of severe reprimands, incarceration, or permanent exile after dissenting against various imperial policies. After the late 1680s, Aurangzeb also bypassed his sons in favor of a coterie of noble loyalists. In so doing, Aurangzeb ended up fatally undermining the authority of his imperial successors.

Ultimately, however, Aurangzeb is best known for his attempts to conform imperial policies to a narrow interpretation of Islamic scriptures while simultaneously pursuing actions that favored his Muslim subjects. Aurangzeb's more controversial gestures included empowering public censors to enforce Islamic injunctions on morality (1659), imposing double customs duties on non-Muslim traders (1665), ending imperial patronage of music and the arts (1660s), reimposing the *jizya* (a poll tax on non-Muslims, 1679), and making imperial land grants to Muslim clerics transferable and hereditary (1690) while denying Hindu religious figures access to those grants. Aurangzeb's actions seem to have been informed by a combination of personal zeal and political calculation that demanded shoring up his support among various powerful Muslim constituencies. Aurangzeb's initiatives marked a critical—if occasionally only symbolic—departure from the religiously inclusive and tolerant policies followed by Mughal emperors over the previous century.

Aurangzeb died of old age in February 1707. A bitter war of succession between his three surviving sons followed. Mu'azzam (crowned as Bahadur



Shah) emerged victorious and immediately set about reversing many of his father's policies.

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See also Mughal Empire

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chat

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Australia

Aboriginal peoples from Southeast Asia came to Australia at least forty thousand years ago. They (and the continent) remained isolated from the rest of the world until trade developed, first with islanders to the north, then, in the seventeenth century, with Europeans extending their empires. Today Australia is a culturally diversity nation-state with strong ties to the West and ever-more challenging relationships with Asia.

Australia is a sovereign nation in the Southwest Pacific, occupying a continent of nearly 7.7 million square kilometers; it is the only continent coterminous with a single nation state, and has for the majority of world history been the most isolated continent save for Antarctica. Its flora (predominantly sclerophyll [eucalyptus] forest and acacia and mallee scrubland), and its fauna (predominantly marsupials that carry and suckle their young in pouches but including monotremes, or egg-laying mammals) are distinctive. Apart from Antarctica, it is the world's most arid continent, with large areas of semi-desert. It is profoundly influenced by the climate cycle known as El Niño / La Niña, with long droughts punctuated by seasons of heavier rainfall in the south and monsoon conditions in the north.

Originally part of the ancient supercontinent of Gondwanaland that encompassed South America and Antarctica, the land mass of Australia existed for many millions of years in total isolation until the arrival of aboriginal people from Southeast Asia at least forty (and perhaps as long as sixty) thousand years ago. Aboriginal Australians evolved a close relationship with their physical environment, but transformed it aided by the introduction of the dingo (a

semi-domesticated canine species), about 3,500 to 5,000 years ago. Aboriginal people were overwhelmingly hunter-gathers who altered the composition of the forests through selective burning of vegetation. This “fire stick farming” made large sections of forest more open and suitable for the hunting of marsupials. Before human settlement, megafauna in the form of giant thylacine (Tasmanian tiger), kangaroo, and wombat-like species roamed, but were rendered extinct by a combination of aboriginal impacts and climate change. Aboriginal people gradually occupied the entire continent over thousands of years.

European Occupation

The isolation of this continent and its peoples was further breached in the centuries before European occupation. From at least 1720 and perhaps as much as three hundred years earlier, trade developed between aboriginal Australians and the islanders of present day Indonesia and New Guinea to the north; from these sources may have come rat and cat populations before Europeans arrived. The first European arrivals were the Spanish and then Dutch sailors of the early-to mid-seventeenth century in quest of trade and empire on behalf of their respective monarchs. The Dutch explorer Abel Janszoon Tasman “discovered” (in European terms) New Zealand and present day Tasmania (he called the latter Van Diemen's Land), while the English sailor William Dampier explored the northwest coast of Western Australia in the 1688 and 1699; but it was not until 1770 that Captain James Cook discovered and claimed the eastern half of the Australian continent for Britain while on a trip of naval exploration in the Pacific.



Gustav Mützel, *Australian Fauna* (1880). The thylacine (Tasmanian tiger, the dog-like animal on the left) is now believed to be extinct, while marsupials that carry and suckle their young in pouches are predominant. New York Public Library.

Faced with the ever-growing numbers of prisoners produced by a draconian criminal code, the British government decided in 1786 to establish, on Cook's recommendation of the suitability of the site, a penal colony near present day Sydney. On 26 January 1788, Captain Arthur Phillip and over one thousand prisoners (whose hefty jail terms were often commuted from death sentences) established the first European settlement in New South Wales. The fledgling colony existed initially on a mixture of subsistence crops, but quickly developed coastal sealing and timber getting. The area was visited by the whalers of several European countries and of the newly formed United States. French explorers engaged in scientific research during the Revolutionary and Napoleonic era indicated that the political hold of the British was at first tenuous. But the defeat of the French in the Napoleonic Wars removed that threat by 1815. Thereafter the expansion of Australia was underwritten by British naval supremacy until World War II.

Initially hemmed in by its difficult terrain and dense coastal forest, Europeans expanded settlement into

the formidable barrier of the Blue Mountains in 1813. Thereafter the rich grazing and farming lands to the west of the Great Dividing Range were opened up. In 1802 and 1803, additional colonies were established in Van Diemen's Land, where recalcitrant prisoners were sent, and in 1836, free settlers from that island pioneered a colony on the continent's southern shores that became Victoria. In 1829, another colony on the Swan River began the white settlement of Western Australia; and in 1836 a free colony in South Australia joined the list.

Entering the World Economy

Australian history was always tied up with foreign markets for primary products, and with the vicissitudes of the evolving world economy of capitalism. By the 1820s New South Wales had developed what was to be the future nation's first great economic staple, the merino wool industry, using sheep brought from Spain. Merino sheep were well adapted to the arid Australian environment, and their wool withstood

the long ocean journey to European woolen goods factories. On the basis of wool, Australia became extremely wealthy on a per capita basis by the mid-nineteenth century. White settlers seized the land for the sheep industry from aboriginal people under the doctrine of *terra nullius*, or “empty land,” a doctrine that recognized no legal authority on the part of the indigenous. The British government simply claimed sovereignty, but settlers had to establish their tenure against resistant aboriginal people. Disease and the guns of whites, however, gradually reduced this obstacle to European exertion of control.

Though profitable, wool required large landholdings and relatively few laborers as shepherds. Increasingly, pastoralists controlled vast estates. Until the transportation of British prisoners to the eastern Australian colonies ceased in 1850, these large pastoralist landowners, called “squatters,” used convict labor. By the 1840s, bitter battles had broken out between the governors and the pastoralists over the acquisition of and payment for land. Already an agitation on behalf of the growing numbers of free settlers sought the end to convictism, but the social landscape was even further transformed by the discovery of gold in Victoria in 1851. Many tens of thousands of European and American prospectors, and Chinese laborers rushed to the gold fields; Melbourne soon became Australia’s largest city, servicing the fields, and other gold rushes developed in Queensland and Western Australia later in the century. Gold brought intensified calls for democracy and moves toward self-government status, achieved in the middle of the 1850s for New South Wales and Victoria. The other colonies quickly followed suit.

Cities such as Melbourne, Brisbane (in the new colony of Queensland in Northeastern Australia, achieving self-government in 1859), and Sydney became entrepôts (intermediate centers of trade) for the export of the land’s products, which now included not only wool but also wheat and minerals. Australia quickly developed by the late nineteenth century as one of the most urbanized societies in the world; yet much of the wealth still derived from the land; painters, poets, and novelists exhibited a fascination for

“the bush” as shaping a distinctive, egalitarian, and masculinist national identity.

Australia remained throughout the nineteenth century subject to the demand pressures coming from European industrialization. The improvement of transport with faster sail ships and steamships tied the colonies ever more closely to the world economy and to Europe. Meat exports grew in the 1880s with the development of refrigeration; by 1900, the cattle industry spread across northern Australia, the nation’s last frontier. Cattle, wool, and wheat brought prosperity in the 1860s to 1890; wages were relatively high; free immigrants mainly from Britain (including Ireland) continued to enter, and society developed a racially “white” population that was said, with only a little exaggeration, to be 98 percent British. A strong middle class emerged in the cities committed to social and moral reform, but Australia was badly affected by the severe depression in the European world in the 1890s.

Class and Race, Politics and Governance

Partly as a result of that economic downturn, Australia entered a period of harsh class conflict between capital and labor; bitter strikes ensued, but the nation was not affected to any degree by Europe’s revolutionary socialism. After the labor movement’s defeat in these industrial wars, attention turned to the formation of a social democratic style of political party tied to trade unions, the Labor Party, that produced the first (but short-lived) Labor government in the world—in 1899 in Queensland. The nation was also affected by fears of racial takeover; the Chinese who had come with the gold rushes as laborers and miners posed one threat that colonists had railed against; Asian people became subject to restrictive immigration laws in the major colonies in the 1880s. The rise of Japanese power, particularly after the defeat of Russia in the Russo-Japanese war of 1904 was another development raising a threat of a “yellow peril.” This fear of external threats and the desire to overcome tensions within the class-divided society



Kata Tjuta, Ayers Rock region, Northern Territory of Australia. Photo by Kevin Connors (www.morguefile.com).

brought impetus to the movement for federation and a rising nationalism.

The political landscape was changed by the federation of the different colonies in 1901 as the Commonwealth of Australia, comprised of six states with a written constitution partly based on the American, but without a Bill of Rights and retaining the Westminster system of parliamentary government and allegiance to the Crown. The federal union was cemented by the incorporation of labor into a social settlement via a system of industrial arbitration to maintain high wages. As part of the implicit compromise non-white labor was to be excluded to placate white workers (South Sea islanders working contract labor under near-slave conditions on northern sugar plantations were sent home as a result); and women were granted federally the right to vote, one of the earliest achievements of this reform in the world. Along with New Zealand, Australia became known as a site of significant social democratic reform. The Labor Party exerted a strong influence and provided several of the early governments of the Commonwealth and states.

These social achievements and economic progress were shattered by external events of world history again—this time in the form of World War I from 1914 to 1918. Though Australia was self-governing in regard to internal affairs, it was part of the British Empire and its leaders took the nation into war against Germany alongside the mother country. Nearly sixty thousand Australian soldiers died in the conflict that followed. The war exacerbated class, religious, and other social tensions as many Australians of Irish-Catholic descent opposed the attempted introduction of military conscription. The ruling Labor Party split over the issue, and the nation entered a period of conservative rule that lasted almost unbroken until 1941.

Meanwhile, the 1920s and 1930s saw Australia in increasingly difficult economic circumstances due to the further impact of external forces of the world economy. Agricultural prices dropped worldwide in the 1920s, and the Great Depression of the 1930s hit Australia as hard as it did Germany and the United States. Australia sought and received imperial preference tariffs that tied the nation even closer to the



Sydney Opera House. Australia quickly developed by the late nineteenth century as one of the most urbanized societies in the world.

Photo by Kevin Connors (www.morguefile.com).

British. The growing threat of the Japanese did likewise. Australia relied on the British navy to repel this threat. But the fall of Singapore to the Japanese in World War II forced Australia to look to the United States after a call from the new Labor government. Hundreds of thousands of American troops passed through Australia, and the two nations fought to repel the Japanese. After the Allied victory in World War II, Australia formed a close political and strategic alliance with the United States, and sided with the Americans in the emerging Cold War. It also fought alongside the United States in the hot war that erupted in Korea (1950–1953), the Vietnam War of the 1960s, and in subsequent conflicts in Iraq (1991 and 2003–2009), and Afghanistan (beginning in 2001 and still involved as of 2010).

Internally, postwar Australia prospered once more as a result of the Cold War that raised the demand for Australian primary products, particularly wool. The nation's terms of trade were very favorable and the high standard of living underpinned twenty-three years of continuous conservative political rule under the Liberal Party after 1949. The social composition of the nation was changed dramatically.

Postwar refugees were welcomed in Australia from Europe, and to supply the labor needed for the nation's expanding factories and mines, workers from Italy, Greece, and other European countries entered in large numbers. As a result the nation became ethnically mixed. Gone was the country largely Anglo-Celtic and composed of the earlier British and Irish immigrants and native-born stock. The ties to the motherland were further undermined by Britain's entry to the European Common Market in 1964, a move that destroyed the old Imperial and Commonwealth trade preference system. Australia now had to find new markets, particularly in Asia, and the old enemy Japan in the 1960s and 1970s became the nation's greatest trading partner. Later in the 1990s and after, China loomed larger as an importer of Australia's mineral wealth. The drift towards Asia continued after 2000 and was reinforced by growing Asian migration.

Not until the 1960s had the White Australia policy, in operation since 1901, been challenged. At first came the admission of Asian students, then a cultural and social revolution from 1970 to 2000, as wave after wave of Asian immigrants from Taiwan,

The strongest initiative that government can take to ensure Australia is prepared for population ageing is to maintain a strong economy, and a secure nation. • **Julie Bishop (b. 1956)**

Hong Kong, Malaysia and other places entered; refugees from Vietnam in the 1970s, Lebanon in the 1980s, and from Africa and the Middle East after 2000 added to the interracial mixture. By 2001, 22 percent of Australians were foreign born. As a result of changing immigration patterns, Islam and Buddhism joined Catholic and Protestant Christian denominations as part of the multicultural mix. Though multiculturalism was widely accepted in the 1980s, the stream of non-white and Muslim immigrants began to produce an anti-multicultural backlash that conservative politicians exploited. A different though complementary problem arose from the nation's dependence on China for energy exports vital to the economy. This complicated fractious debates over climate change. Through its massive supply of coal and gas to Asian industrial powerhouses, Australia's history since 2000 has become increasingly tied to global concerns about carbon dioxide emissions. A third divisive issue was Aboriginal Reconciliation. Aboriginal people received limited but significant legal victories in the early 1990s over lost land rights, and a formal apology for past wrongs committed by earlier generations came from the new Labor government in 2008. Yet the demand for further "reconciliation" and financial compensation for two centuries of discrimination continued to be controversial.

In the year 2010, with a population of about 22 million, Australia stood poised between its European heritage and American alliance on the one hand, and links to Asia on the other. As at every other point, the destiny of Australia was profoundly shaped by the

patterns of trade, economic development, migration, and war that comprised world history.

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See also Australia, Aboriginal; Pacific, Settlement of

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Until recently, it was commonly believed that Aboriginal Australia changed very little from 40,000 years ago until the arrival of the Europeans—that the society remained in stasis with the natural world. The current view, however, is that Aboriginal peoples changed with the natural environment while they exerted control over it.

Aboriginal Australia has been viewed traditionally as a classic example of hunter-gatherer, that is, pre-agricultural, society—a continent of people in equilibrium with the natural environment. More recent perspectives, however, by anthropologists, archaeologists, ethnohistorians, and indigenous people themselves have helped dispel this stereotype. Today it is recognized that a wider range of sociocultural variation existed across the continent and through time than had previously been thought, overlapping in many ways with horticultural and agricultural societies like those of nearby Papua New Guinea. Aboriginal peoples had considerable control over the natural environment and its resources and managed these in ingenious ways.

Society, Religion, Demography

Although over two hundred Australian languages and many dialects were spoken across the continent, Aboriginal society shared many similarities. Society was kinship based; clans (descent groups) inherited land that was overseen by totemic ancestors shaped in the primeval Dreamtime (in Aboriginal belief, the time of creation). Complex patterns of kinship and social networks bound together large sectors of the continent. Trade, exchange, and ritual provided a further

binding force. In some cases, trade and exchange networks extended from one corner of the continent to the other. Basically egalitarian, Aboriginal society also had powerful and influential elders—men and women initiated into the hierarchies of the religious system and its cults. A conservative estimate of some 300,000 for the Australian Aboriginal population at the time of European settlement has been suggested, but more recent studies, which allow for the decimating effects of introduced diseases and conflict (by-products of colonialism), have increased this three- or fourfold. More fertile sectors of the continent, such as the southeast and the eastern and northern coastlines, were densely populated in comparison with other parts of the world inhabited by hunter-gatherers.

Resource Management

Land and resource management practices were central to Aboriginal economies. These involved use of fire, processing techniques, and storage. For example, more intensive and costly strategies, in terms of energy expenditure, were aimed at stockpiling stores for lengthy, populous, intergroup ceremonial occasions that ran for weeks and months of each year. In arid and semi-arid Australia, which comprises two-thirds of the continent, grass seeds and other seeds were managed, stored in quantity and made into bread on a daily basis. In these harsh regions, extensive loose, open social networks cemented relations between far-flung peoples, operating as elaborate safety harnesses that could be called upon in times of need. In richer, humid regions, like the tropical north and temperate southeast, social networks were bounded territorially, reflecting denser, more competitive populations.



Aboriginal rock art, Ayers Rock, Northern Territory.
Photo by Kevin Connors
(www.morguefile.com).

Here, a sedentary way of life also was more common. In Victoria and the Murray River valley, for instance, villages were constructed, often atop large earth mounds. Intensive fishing was undertaken day and night, and extensive drainage systems were dug to control eel runs and their productivity. Along the tropical coast and its offshore islands, specialized fishing societies flourished that focused on hunting dugongs (aquatic mammals similar to sea manatees) from seagoing canoes. Plants were managed in a form of domiculture (symbiotic relationship between humans and undomesticated plants) centered on more sedentary base camps.

Tasmania

The Tasmanians were isolated from mainland Australia for some 12,000 years, but were linked biologically, linguistically, and culturally to southeastern Australians. There were also some differences reflecting no doubt their cultural isolation and history. For example, apart from along the humid west coast, settlement appears to have been more mobile than

in environmentally comparable areas of southeastern Australia. Population densities were also lower than in the latter areas. Fishing no longer was practiced and equipment was generally less extensive, as befits more-mobile economies. Archaeological investigations suggest that during the last 4,000 years rain forests were more extensively utilized, coastal strategies rearranged, and populations may have expanded on the west coast.

Aboriginal Arrival in Australia

Plentiful, well-dated archaeological sites support that Aborigines colonized Australia some time before 40,000 years ago, when both Papua New Guinea and Tasmania were connected to Australia (Greater Australia). Earlier dates, however, are continually being entertained and heatedly debated. For example, recent redating of a Lake Mungo (New South Wales) skeleton, which was originally dated to around 30,000 years, has arrived at dates of twice that age and more. All skeletal data can be linked to the present indigenous population.



Aboriginal peoples throughout history, no longer defined stereotypically as hunter-gathers, had considerable control over the natural environment and its resources. Library of Congress.

Linguistically, Australian languages share much in common and have little close association with languages outside Australia apart from some in Papua New Guinea. Archaeological data indicate that by 35,000 years ago occupation stretched from the tropics to around the temperate Tasmanian glaciers. By 30,000 years ago, most major environments of the continent were peopled, with the arid core being populated shortly after. The human population appears to have had little dramatic effect either upon major vegetation patterns, vulnerable to Aboriginal burning practices, or fauna. People and now extinct Pleistocene fauna (including megafauna) appear to have co-existed for tens of thousands of years. After the glacial maximum 18,000 years ago, the numbers and use of archaeological sites increased in many environments of Greater Australia. This general trend may be a reflection of climatic amelioration and continues throughout the more humid period after 10,000 years ago, becoming most marked in the last 4,000 years, even though climate at that time became drier and more

stressful. In general this trend suggests increasing Aboriginal population sizes and densities even in the face of climatic reversal. Archaeological evidence of related cultural changes begins after 18,000 year ago but is most marked in the last 4,000 years. For example, from 4,000 years ago cemeteries in southeastern Australia, which begin around 13,000 years ago, are larger and more complex, and painted rock art styles in northeastern Australia become highly regionalized. At this time also, in arid and semiarid regions use of grass seeds is intensified and many environments are more intensively occupied, including the harshest deserts, some offshore tropical islands, tropical rain forests, and southeastern wetlands and highlands. This suggests increases in population sizes and densities and more intensive, more territorial socioeconomic patterns.

On reexamination, therefore, Aboriginal Australia, although culturally unique, also begins to demonstrate in many subtle ways some of the same patterns and trends found among hunter-gatherer peoples on other continents. Prior notions of a timeless people in a timeless land have given way to more dynamic portrayals.

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See also Australia; Indigenous Peoples

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We are all visitors to this time, this place. We are just passing through. Our purpose here is to observe, to learn, to grow, to love ... and then we return home. • **Australian Aboriginal Proverb**

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Austro-Hungarian Empire

The Ausgleich of 1867, a compromise between the Habsburg rulers of Austria and the Magyar nobles of Hungary, created the constitutional dual monarchy of Austria-Hungary. The empire grew and developed economically under the shared government by the Austro-German and Magyar (Hungarian) minorities, but the diverse nationalities of its subjects led to its disintegration during World War I.

In 1867 the Ausgleich (compromise) transformed the monarchy of the Habsburg ruling house of Europe, which had existed since 1526, into the dual state of Austria-Hungary. Count Friedrich Ferdinand von Beust (1809–1886), the Austrian foreign minister, and Count Gyula Andrassy (1823–1890), a prominent Hungarian nobleman, conducted the final negotiations of the compromise. The then-ruling Emperor of Austria, Franz Joseph (reigned 1848–1916), viewing his lands essentially in terms of maintaining dynastic power and prestige (*Hausmacht*), sought to avenge losses suffered during the Italian War of 1859 and the Austro-Prussian War of 1866, which had stripped the monarchy of its territories in Italy and undercut its position in Germany. A continuation of the struggle against Prussia, however, required Hungarian cooperation. Hungarian leaders, determined to control non-Magyar (the dominant people of Hungary) populations in their part of the monarchy, wanted to remain connected to a great European state under conditions that maximized Hungary's autonomy within the larger whole.

The Nature of the Dual Monarchy

Extended consultations produced a compromise between the dominant Austro-Germans and the Magyars. The Ausgleich in effect created two distinct states, each organized as a constitutional dual monarchy. Franz Joseph and his successors would tie together the two independent and equal states by functioning as emperor of Austria and king of Hungary. The Habsburg ruler would appoint common ministers of finance, foreign affairs, and war as well as the ministries of the separate states, thereby preserving dynastic authority over the joint armed forces and the conduct of foreign policy. Delegates from the respective parliaments would meet on a rotating basis in Vienna and Budapest to settle matters of shared concern. The Ausgleich soon led to the creation of unified monetary and postal systems, a central bank, an integrated railroad network, and a customs union sheltered behind a single tariff.

Despite the ramshackle character of the dual monarchy, governmental structures functioned with surprising efficiency and allowed Austria-Hungary to retain its status as an important counterweight in the European power balance. However, in an age when nation-states had become the paramount form of political organization in the Western world and when the colonial possessions of the United States, Japan, and a small circle of European countries were becoming the dominant mode of imperial organization, Franz Joseph's empire represented an anachronism as potentially unsettling to continental stability as it was itself endangered by internal tensions and conflicts. For reasons resembling the failure of the new U.S.

republic to confront the question of slavery at the time of its founding, those leaders who negotiated the Ausgleich did nothing to resolve the nationalities problem facing the dual monarchy.

The Ausgleich used the River Leith to divide Franz Joseph's possessions. The empire of Austria (Cisleithania) contained Germans located primarily along the Danube River and in the Alpine areas of the old hereditary lands (Erblände), Slovenes in the provinces to their south, Czechs in the Bohemian Crown lands, Poles, Ruthenians (Carpatho-Ukrainians), large concentrations of Jews in Galicia, and Romanians in Bukovina. Italians inhabited the south Tyrol and the Adriatic coast. In the other part of the dual monarchy, Magyars lived on the plains traversed by the Danube and Tisza rivers and in eastern Transylvania. Slovaks lived to their north, Croats and Serbs to their south. Bosnia-Herzegovina contained substantial numbers of Muslims. In addition to pockets of Germans scattered throughout the kingdom of Hungary, Romanians occupied much of Transylvania. Nowhere did ethnic patterns coincide with historic borders, and nowhere could boundary lines be drawn that did not divide peoples of common descent who spoke the same language and shared a cultural heritage. Both the Germans and the Magyars constituted less than one-half of the population in the areas of the dual monarchy where the Ausgleich had ensured their predominance. The Germans, like the Poles, Ruthenians, Romanians, Serbs, and Italians, were developing emotional ties with peoples of their own nationality inhabiting lands lying beyond the dual monarchy's borders.

Sources of Imperial Strength

Despite its lack of geographical cohesion and the centrifugal (tending away from centralization) forces of nationalism, Austria-Hungary managed to survive until military defeat in World War I finally precipitated its disintegration. The attachment that many of Franz Joseph's subjects exuded for their emperor-king made him an indispensable source of stability. His long



Franz Xavier Winterhalter. *Franz Joseph I, Emperor of Austria* (1865). Oil on canvas. The emperor viewed his lands in terms of maintaining dynastic power and prestige. Private collection.

reign, venerable family heritage, steadfast demeanor, and unwavering commitment to his responsibilities elicited widespread devotion and support. Loyalty to this embodiment of the multinational Habsburg state remained strong in the armed forces, which imparted useful skills and broadening life experiences to soldiers and sailors of diverse backgrounds. Dedication to duty likewise remained high in the civil service, where bureaucrats played an increasingly influential role in society. The Roman Catholic Church, although



Historic map of nationalities in the Austro-Hungarian Empire in 1911.

diminishing in power, as well as the landed aristocracy throughout the empire, continued to pledge firm allegiance to the Habsburg dynasty.

Economic development provided another source of unity for Austria-Hungary. The growth of industry, notably the rising output of porcelain, textiles, and armaments in Bohemia, complemented the agricultural productivity of Hungary. The construction of railroads, expansion of banking, integration of regional markets—and therefore interdependence of various regions—all reinforced the dual monarchy's economic interaction. On the other hand, the spread of industrialization intensified nationality problems, and growing numbers of impoverished peasants, driven

by demographic pressures, streamed into the larger cities, accelerating the urbanization of society.

Vienna, whose inhabitants had numbered around 400,000 in 1848, mushroomed into a metropolis of 1.6 million by 1914. A once-predominantly German population became extraordinarily diverse ethnically, linguistically, socioeconomically, and culturally. As in other urban centers of the dual monarchy, such diversity probably contributed to its flourishing intellectual and artist life. Late nineteenth-century Vienna nurtured the work of Arnold Schoenberg and Gustav Mahler in music, Arthur Schnitzler and Hugo von Hofmannsthal in literature, Gustav Klimt and Egon Schiele in painting, as well as Sigmund Freud

in psychiatry. Its university boasted world-renowned figures in fields ranging from history and philosophy to economics, medicine, and law. Despite its splendor, however, Vienna could not avoid the divisions and strife that came with its size and diversity. Here, as elsewhere in Franz Joseph's domains, national consciousness and accompanying feelings of grievance became more acute whenever economic expectations, educational levels, and degrees of social sophistication rose significantly.

Developments in Austria

Pervasive nationality problems invariably complicated other political problems. Although the Austrian constitution guaranteed many basic rights, including the right of every national group to uphold its own language, religion, and culture, the right to vote operated through a class system designed to ensure the dominance of Germans in parliament. Immediately after 1867, a period of liberal ascendancy under Franz Joseph's prime minister, Prince Carlos Auersperg (1814–1890) brought a series of reforms that broadened trial by jury, introduced free and compulsory elementary education, diminished the influence of the Catholic Church over education and its control over marriage and family law, established universal military service, reduced the severity of the penal code, outlawed discrimination against Jews, and accorded all Christian faiths legal equality.

The creation of the German Empire by Prince Otto von Bismarck after the Prussian defeat of France in 1871 dashed Franz Joseph's aspirations to reassert Habsburg dominance in central Europe. Fears of losing Austria's German-speaking lands to the newly united Germany brought to power a more conservative ministry under Count Karl Sigismund von Hohenwart (1824–1899). It attempted to appease the Slavic population by reorganizing the empire on a federal basis. Efforts to give the Czechs a status equal to that of the Magyars met with unyielding resistance from the two master nationalities, but the Hohenwart ministry did ensure the adherence of Galicia's Poles by granting them administrative and cultural autonomy. Another liberal ministry

led by Prince Adolf Auersperg (1821–1885) introduced the direct election of parliamentary representatives, which resulted in a Czech boycott because the reform favored urban and hence German voters.

Prolonged economic depression, political corruption, and liberal opposition to a foreign policy now directed by Andrassy compelled Franz Joseph to name Count Eduard Taaffe (1833–1895), a conservative Bohemian aristocrat, as his chief minister in 1879. Taaffe organized a political coalition of Slavs, clericals, and German conservatives known as "the iron ring." He achieved stability by making concessions to his supporters without ever addressing their deepest discontents or resolving severe fiscal problems facing the Austrian government. Recurring political crises followed his resignation in 1893. The attempt to diminish opposition among aggrieved minorities with an election law that provided universal manhood suffrage failed to restore order to the parliamentary process.

The Position of Hungary

In their part of the dual monarchy, Hungarian leaders proved unable and often unwilling to address the grievances of subject peoples. Magyar landowners dominated the political process and utilized their power to assimilate or subjugate the other nationalities through relentless efforts at Magyarization. Only Croatia possessed a degree of administrative autonomy that gave its peoples their own diet, courts, and schools. Kalman Tisza (1830–1902), head of the Liberal Party and prime minister from 1875 to 1890, sought to uphold the *Ausgleich* while enhancing Hungary's position within the dual monarchy. A resurgent Independence Party under the direction of Ferenc Kossuth (1841–1914) assumed control of the government in 1890 and complicated relations with Austria until 1910 by pressing for a virtually separate Hungary. Istvan Tisza (1861–1918), who served as prime minister from 1903 to 1905 and again from 1913 to 1917, revised the Hungarian agenda. Determined to uphold the *Ausgleich*, he still increased his country's prerogatives and influence whenever possible.

Foreign Affairs

Unremitting internal difficulties encouraged the leaders of Austria-Hungary to pursue an expansionist foreign policy. For reasons of dynastic prestige, military security, and economic advantage, the imperial and royal army occupied the Turkish provinces of Bosnia and Herzegovina in 1878. This occupation counterbalanced the recent loss of territory in Italy and alleviated fears that an intensifying South Slav *irredenta* aimed at the inclusion of Croatia and Slovenia in an independent Slavic state, and the political aspirations of Serbia, which sought to become the center of this imagined state, might unsettle minorities living within the dual monarchy. But the occupation complicated relations with Serbia, Italy, and Russia, which itself had ambitions in the Balkans, and pushed Austria-Hungary into a defensive alliance with Germany the following year.

The dual monarchy aroused heightened resentments when it formally annexed Bosnia and Herzegovina in 1908. The annexation raised serious questions in every European capital concerning Austria-Hungary's intensions in the international sphere and increased its dependence on Germany, which had provided crucial if reluctant support. The annexation weakened the Triple Alliance, consisting of Germany, Austria-Hungary, and Italy, by alienating Italy and reinforced Russia's commitment to the Triple Entente, which by 1907 had diplomatically tied Russia to England and France. By provoking further Serbian agitation among the dual monarchy's South Slavs, the annexation ensured further trouble in southeastern Europe. Two Balkan wars during 1912–1913 left Serbian territorial aspirations unfulfilled, an outcome for which Serbian nationalists held Austria-Hungary responsible. Then, on 28 June 1914, young Bosnian extremists with connections in the Serbian capital of Belgrade assassinated Crown Prince Franz Ferdinand and his wife in Sarajevo, the Bosnian capital.

Consequences of World War I

The Austro-Hungarian government, feeling threatened, declared war on Serbia on 28 July; Russia's

backing of Serbia and Germany's support of Austria-Hungary, its only reliable ally, set off mobilizations that turned a Balkan crisis into a European war. During the opening campaigns Austria-Hungary's army suffered nearly 50 percent casualties and lost many experienced officers. Yet loyalty to Franz Joseph and his multinational dual monarchy remained strong. Victories in Italy, Serbia, and Romania restored morale but could not prevent hardship within the civilian population, and thus left effective authority with soldiers and bureaucrats. Subsequent military setbacks, restrictions on individual rights, mounting shortages, and a dependence on Germany rekindled nationalist animosities and ambitions.

The last Habsburg emperor-king, Karl I (r. 1916–1918), failed to make a separate peace with Allied leaders in France and England, who belatedly recognized the need to break up his empire after their victory. The collapse of offensives mounted by Germany and Austria-Hungary during spring and summer of 1918 paved the way for an abrupt disintegration of the dual monarchy. In October the leaders of various national groups used Allied recognition to declare the independence of Czechoslovakia, Yugoslavia, and an expanded Romania. Territorially reduced states of Austria and Hungary set up republican governments after Karl I resigned in mid-November. Galicia became part of a new Poland. The end of the monarchy ruled by the Habsburg dynasty for nearly four hundred years left small successor states facing long-standing nationality conflicts in a now deeply divided east-central Europe.

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Automobile

A series of improvements turned the steam-propelled carriages of the late eighteenth century, mere amusements for nobles, into the 600 million automobiles that crowd the roads of the world's developed areas—and automobile and fuel technology innovation is likely to continue. The development of the mass produced personal vehicle has had a profound, though not entirely positive, effect on the Earth's population.

The automobile has been one of the defining technologies of the last one hundred years. From its roots as a European technological curiosity to its reinvention as a mass consumer product to its current status as the product of the largest manufacturing activity on earth, the automobile has fundamentally changed the global economy and the lives of most people, even those who do not drive.

The earliest cars, a strange blend of the eccentric and the practical, were built long before people such as Gottlieb Daimler (1834–1900), Henry Ford (1863–1947), Ransom Olds (1864–1950), Carl Benz (1844–1929), William Durant (1861–1947; founder of General Motors), James Packard (1863–1928), and Clement Studebaker (1831–1901) entered the scene. During the fifteenth century the Italian artist and engineer Leonardo da Vinci thought about carriages that could move under their own power and left drawings showing rudimentary transmission and steering systems. In 1510 the German Renaissance artist Albrecht Durer sketched a complex and undoubtedly heavy royal carriage, propelled by muscle power through geared cranks.

The early history of the automobile gives little indication of the long-range impact of its technology. Beginning in Europe during the 1870s, research and invention led to development of the first gasoline-powered automobiles in the 1880s. The international character of automobile enthusiasts and inventors during the late nineteenth and early twentieth centuries is representative of the scientific and technological culture, where news traveled quickly between continents.

At the heart of any car is its engine, and the development of the internal combustion engine was pursued separately from and earlier than that of the automobile. Initial research into internal combustion engines was motivated by desires to improve on the efficiency and portability of the steam engine.

Full Steam Ahead

Until the first practical internal combustion engine was developed in 1860, constructing a workable steam car was the obsession of scientific geniuses and eccentrics, most of who received only scorn and ridicule for their trouble. Historians can only imagine the scene in Paris in 1769 when Nicholas Cugnot (1725–1824), a French military engineer serving Empress Maria Theresa of Austria, retired from active duty and began working, under royal commission, on his idea for a steam-powered military truck. The truck may have been capable of only 11 kilometers per hour, but it did move. This, the world's first automotive test drive, sufficiently shook loose royal purse strings to fund a second and larger model. Cugnot's second truck had front-wheel drive, with the boiler



A 1960s-era car in London. During the 1960s the British company Austin partnered with Japan's Nissan to design and produce the revolutionary Mini.

hanging off the nose, a design that resulted in such an unbalanced weight distribution that a driver could barely steer the vehicle.

Following in Cugnot's Tracks

After Cugnot, developments shifted to England, where the significance of the technical breakthroughs was met by public apathy. After all, who could imagine that these outlandish contraptions, easily outrun by even the slowest horse, could be practical?

James Watt (1736–1819), the Scottish inventor whose technical innovations made the Age of Steam possible, was granted a patent for a steam carriage in 1786 but did not actually build it. Watt was so afraid of explosions from high-pressure boilers that he had a covenant written into the lease for any potential tenants of his home, Heathfield Hall, stipulating that no steam carriage could approach the house.

In the United States steam pioneers faced ridicule and censure too. Oliver Evans (1755–1819) is not well remembered today, but he built the first self-propelled vehicle in the United States—and it also *swam*. Evans also built the first high-pressure boiler in the United States and created an automation system for a grain

mill that prefigured Henry Ford's assembly-line system by 150 years.

Obstacles to the Dream of Steam

Inventors struggled to make their fire-belching vehicles practical. Nevertheless, English entrepreneur Walter Hancock was the first to offer regular passenger routes of the type that Evans imagined. For five months at some time during the period 1824–1836 Hancock had nine steam coaches taking on paying customers. However, Hancock's revolutionary coach service didn't attract enough passengers, and ultimately failed. It's probably going too far to say a conspiracy killed the steam coaches, but certainly the powerful railroad interests threw some spikes onto the road. As automotive writer Ken Purdy reports in his classic book *Kings of the Road*: "The railroads of the day took a very dim view indeed of the kind of competition steam coaches obviously could offer, and arrangements to make things difficult for the upstarts were not hard to contrive. A four-shilling toll-gate charge for horse-drawn coaches, for example, could easily be raised to two pounds and eight shillings for a steam coach" (Purdy 1949, 196).

Steam carriages during the next half-century would make their mark, particularly in the United States. Government Indian agent Joseph Renshaw Brown commissioned one particularly innovative model, shaped like a railroad locomotive, to carry supplies and food to isolated bands of Sioux before the Civil War, although the bad roads in the hinterlands of Minnesota made the carriage impractical. Brightly painted steam fire engines were more successful in several cities after the war. Steam cars survived the onslaught of internal combustion during the first decade of the twentieth century, and brands such as “Stanley,” “Locomobile,” and “White” had many admirers who loved the cars’ range, silent operation, and absence of a crank handle (a necessity for an internal combustion engine in the days before electric starting). This latter advantage was a prime consideration in an era when misapplied cranking could break one’s arm.

However, Whites and Stanleys could require half an hour to work up a head of steam, frightened people who read accounts of boiler explosions, and consumed great amounts of wood fuel and water. When rapid technological advancements improved

the gasoline engine after 1905, the market for steam cars evaporated.

Current Events

Electric cars developed out of early experiments with electric trains and trolleys and became possible only with the invention of the practical storage battery in 1859. A three-wheeled carriage made by Magnus Volk of Brighton, England, in 1888, may have been the first true electric car.

In the United States electric cars first made a discernible impact through their use as taxis, particularly in New York City. By 1898 the Electric Carriage and Wagon Company had a fleet of twelve electric cabs—with well-appointed interiors able to accommodate gentlemen in top hats—plying the city streets. Drivers, as in contemporary horse carriages, sat outside on a raised platform.

The electric car gradually won acceptance through such small-scale, successful businesses. By 1900 U.S. drivers could choose their form of locomotion, and at the first National Automobile Show, held that



A decorated and decked-out German family camper set to make a tour of Europe.

November in New York City, patrons overwhelmingly chose electric as their first choice. Steam was a close second. Gasoline ran a distant third, receiving only 5 percent of the vote. That year 1,681 steam, 1,575 electric, and only 936 gasoline cars were manufactured.

Unplugged

The self-starter for internal combustion cars—the device that largely killed the electric car as a viable product—was, like the electric car itself, first marketed to women. A 1911 ad from the Star Starter Company (“Any Woman Can Start Your Car”) featured a bonneted woman sitting at the wheel of a crankless gas buggy. By “cranking from the seat, and not from the street,” she was neutralizing one of the last major advantages that early electric cars had.

Recharged?

Electric cars have made sporadic reappearances, mostly in response to fuel crises such as the oil embargo by the Organization of Petroleum Exporting Countries (OPEC) in 1973. However, most electric cars have been underdeveloped conversions, such as the utility-endorsed Henney Kilowatt of 1959 to 1961, which started life as a French Renault Dauphine gasoline-powered car. About 120 Henneys were built, which is a good run for a postwar electrical vehicle (EV).

The Gas-Powered Automobile

In 1860 the Belgian inventor J. J. E. Lenoir invented a gas engine that was similar to James Watt’s double-acting steam engine, except that when the piston rose it drew a mixture of coal gas and air into the cylinder. The mixture was ignited by an electric spark. Lenoir’s engine, although plagued by overheating, was a commercial success. The market for gas engines opened, and similar inventions followed, the most important of which was the gas engine of the German inventor Nicolas Otto, who patented his engine in 1866 and exhibited it at the Paris Exhibition of 1867, where it won a gold medal. Otto’s engine, unlike Lenoir’s,

compressed the gas before igniting it, with the small detonation pushing the piston up and forming a near vacuum under it. Otto’s engine weighed nearly a ton and produced all of two horsepower. However, the piston was vertical and occupied a small space, making it practical in workshops that were too small for a steam engine. Otto’s engine was an immediate success, and his company was soon overwhelmed by six thousand orders during the next five years. By 1869 Otto was licensing the invention for production in the United States, Britain, France, and elsewhere. However, his engines required gas mains to carry the gas to the engines; therefore, they were not portable in the sense that a liquid-fuel engine would be.

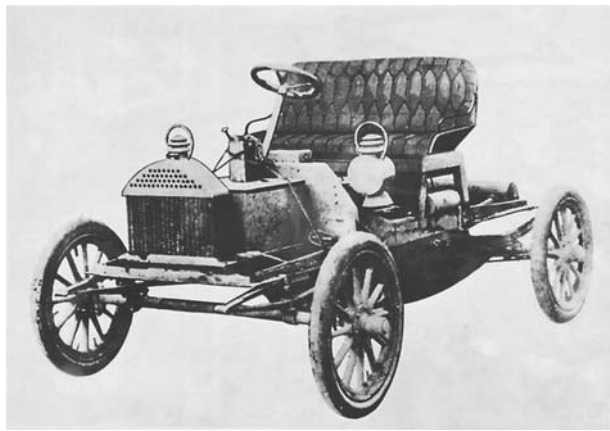
The internal combustion engines of the 1870s required gas to be compressed and ignited—properties not possible with liquid fuel. The invention that made liquid fuel usable was the carburetor, a device that vaporizes gasoline and makes it possible to be compressed and then ignited. The carburetor was the first product of the company formed by Wilhelm Maybach and Gottlieb Daimler of Germany. By 1885 the two men had attached their gasoline engine to a bicycle to produce the world’s first motorcycle. In 1886 they attached their engine to a carriage to produce an automobile. In 1890 they formed the Daimler Motor Company to manufacture automobiles. They also sold their engines to the Peugeot carriage company in France.

In 1892 the German engineer Rudolf Diesel applied for a patent on a more powerful double-acting, liquid-fuel engine. His engine compressed air to heat it to the fuel’s ignition point, then introduced the fuel, which instantly ignited, producing power without further heating of the air. Diesel’s principle led to a more efficient, more powerful engine that ran on a less refined product of petroleum oil than gasoline—a fuel now called “diesel.” Diesel wanted to challenge the steam engines used in ships and locomotives—a goal he reached by the turn of the century.

Heavy Traffic

Automobiles were a common sight in European and U.S. cities by the twentieth century. But to become

An idealist is a person who helps other people to be prosperous. • **Henry Ford (1863–1947)**



1904 Buick, one of the first cars designed by the engineer Walter Marr for David Buick. New York Public Library.

a worldwide phenomenon, automobiles needed to be less expensive and more useful. Although several inventors focused on making the automobile accessible to the masses, Henry Ford is associated with the milestone of making the world's first motor car for the multitude. Although the Model T was not his first automobile design, Ford began designing it in 1907 with the goal of making a utilitarian car affordable for the U.S. middle class—and in the process redefining that middle class through car ownership. The Model T rolled out in 1908 at a price of \$850, advertised as the car “even you can afford.” But the 1908 Model T was neither the world's least expensive car, nor the one produced in the largest numbers. For the Model T to capture a mass market, Ford had to revolutionize how it was produced. This he accomplished with what Ford called “mass production.” In 1913 Ford opened a plant in the Highland Park area of Detroit, where he installed his first assembly line. Assembly lines and production by machines required fewer skilled laborers. Ford's new production methods changed the character of industrial labor and attracted foreign-born workers, particularly from eastern and southern Europe and the Middle East. In order to retain his employees in this machine-based, repetitive work, Ford doubled their daily wage to five dollars and reduced their working day to eight hours.

Ford's mass production techniques led to cheaper (as low as \$360 in the 1920s) and more numerous Model Ts.

Ford was producing more than 1 million Model Ts by 1920. The amount of materials required to produce that many automobiles had a ripple effect across the world's economy and environment. The demand for commodities such as rubber and oil increased rapidly—creating new socioeconomic dynamics in areas such as Brazil and the Dutch East Indies, where rubber plantations proliferated. In addition, the role of the automobile in warfare, as proven during World War I, had brought a new emphasis in securing these commodities through imperial systems in the Middle East, Africa, and southern Asia. Demands for enough rubber, oil, and steel to produce and operate millions of automobiles also changed the world's environment: steel mills belched smoke into the air from Pennsylvania to the Ruhr Valley in Germany to India, and millions of acres of tropical forests were cleared to plant rubber trees. Oil derricks sprouted from the California coast to the Middle East.

Given the immense number of Model Ts, they and other inexpensive autos inevitably began to appear in places where people had never seen cars before. By 1904 Ford had set up a small subsidiary to sell cars in Canada. By 1910 Fords were being sold around the world, including in Mauritius, Kuala Lumpur, and Turkey. A Ford assembly plant opened in Manchester, England, in 1911 to serve the growing British and European markets. In addition, nearly five thousand U.S. cars, mostly Fords, were being exported every year. This amount only increased with the coming of war to Europe in 1914 and throughout the 1920s.

After World War I the Model T began to lose its overwhelming market advantages as competition from other manufacturers began to increase. Creation of the General Motors conglomerate led to a proliferation of competing car models, many of which had features that Fords lacked. In addition, during the 1930s Nazi Germany introduced the Volkswagen as a car for the masses. However, the worldwide economic depression of the 1930s slowed automobile market

growth. Rapid growth, especially in Asia, would re-emerge after World War II.

The Postwar Picture

Numerous shifts in the international automobile market have taken place since World War II. After the war the United States was clearly the world's dominant supplier, but by the 1960s the global automobile industry was shifting toward Asia. Korea and Japan have developed the most globally significant automobile industries. In Japan companies such as Mitsubishi have been producing vehicles since the 1920s. Japanese automobile factories suffered relatively light damage during the war and, as a result, the automobile industry was one of the first that the U.S. occupation allowed to resume production.

The outbreak of the Korean War in 1950 provided Japan with an export market for vehicles, and by 1952 the Japanese Ministry for International Trade and Industry (MITI) was creating conditions favorable for exporting Japanese autos. Japanese manufacturers also teamed with European companies to produce Hillmans, Austins, and Renaults. In 1955 MITI again directed the industry with a new strategy for small, inexpensive automobiles. Japanese companies began to excel in the production of these cars, creating an international niche where Japanese cars could undercut European and U.S. cars. By the 1960s the U.S. counterculture had found a surprisingly consumerist way to avoid supporting the U.S. automobile industry and its ties to the defense industry—it bought Japanese cars.

The oil crisis of 1973 increased international interest in small, fuel-efficient Japanese cars. The explosion of the international market for Japanese cars was marked by the changing output of the Japanese industry—from less than a half million cars in 1960 to 7 million in 1973. Japan had become the world's second-largest automobile producer, and its automobile industry, along with its consumer electronics industry, was the driving engine of Japan's postwar "economic miracle." Korea followed the Japanese model during the 1970s and by the late

1980s became the first new major exporter to the industrialized nations since Japan's emergence during the 1960s.

The Modern Era: Power and Pollution

The U.S. vehicle population since 1969 has grown six times faster than the human population and two times faster than the rate of new drivers. Despite comprising only 5 percent of the world's population, U.S. drivers own 34 percent of the world's cars. Registrations of new cars in the United States increase by 2 percent each year. By the year 2100 the current 600 million cars registered worldwide (one-third of them in the United States) could reach 4.5 billion. China, the world's most populous and rapidly industrializing country, is leading the Third World rush to "modernize" through the use of private cars. Although almost 80 percent of its travel is now either by foot or bicycle, China could have 100 million cars by 2015. Tata Motors of India, the world's second most populous nation with around a billion people, is helping to make the dream of car ownership a more accessible reality through the manufacture of the Tata Nano, the world's cheapest car at around \$2,300.

Because of this global mania for private automobiles, together with the means to acquire them, experts project a huge increase in the world car population during the next one hundred years. Because cars account for one-third of smog-related emissions and one-quarter of global warming, such an increase would obviously have disastrous consequences for global health. In half the world's cities the greatest source of air pollution is exhaust emissions; the World Bank estimates that in Asia thousands of people die prematurely every year from filthy air. The problem is worst in China, which relies heavily on coal, but the problem is bad elsewhere. In Athens, Greece, the death rate increases 500 percent on bad air days. In Sao Paulo, Brazil, clogged streets and dirty air have forced officials to set up a rotation system for drivers to keep one-fifth of the city's cars off the streets at any given time. In Tel Aviv, Israel, cars are a huge problem: by 2010 smog is predicted to reach the

levels of Mexico City (the worst in the world, with ozone levels three times safe limits); already smog has caused outbreaks of asthma and bronchitis in Tel Aviv and in nearby Jerusalem. In Prague, Czech Republic, smog forces police to set up roadblocks to keep all but essential traffic out of the city center. Drivers in Singapore pay a premium for licenses that allow them unlimited access to highways.

But even as we realize what our continuing reliance on the private automobile is costing us, we add 50 million of them to the global burden every year. Whether they are in China or the United States, cars are pollution factories on wheels. The average gasoline-powered car in one year produces 4.5 metric tons of carbon dioxide, which causes global warming.

Sport Utility Vehicles

Despite Japanese-led efforts to produce lower emissions cars, the rapid growth of the gas-guzzling sport utility vehicle (SUV) has obliterated advances in clean engine technology, especially in the United States. In 1985 SUVs accounted for only 2 percent of new vehicles sold in the United States; in 2003 they were the most popular form of vehicle, accounting for more than 25 percent of sales, and in 2004 SUVs accounted for 24.6 percent of sales. No other country has taken to SUVs so enthusiastically, but they are an increasingly familiar sight on roads around the world.

In the United States SUVs are considered to be light trucks and thus are allowed to pollute more than cars. According to Friends of the Earth, an environmental advocacy group, a Volkswagen New Beetle (a small car) will emit close to 49 metric tons of carbon dioxide during its lifetime, whereas a Lincoln Navigator (an SUV) will emit 90 metric tons. The National Academy of Sciences reports that light trucks (including SUVs, pickups, and minivans) could reach a fuel efficiency of 13 kilometers per liter (30 miles per gallon) with an expenditure of \$1,200 to \$1,300 per vehicle, but they are required to meet only the federal light-truck standard of approximately 9 kilometers per liter (20.7 miles per gallon). In 2000 General Motors and Ford

announced efforts to improve fuel economy for SUVs, but the vehicles still lag behind. The EPA estimates that a 1.2 kilometer-per-liter (3 mile-per-gallon) increase in average fuel economy would eliminate 140 metric tons of carbon dioxide emissions and save \$25 billion a year in fuel costs annually.

Other Environmental Problems

Beyond the tailpipe, one-third of the average U.S. city's land is devoted to serving the car, including roads, parking lots, and service stations. Jan Lundberg, an anti-car activist and founder of the Alliance for a Paving Moratorium, says asphalt covers 96,000 square kilometers of the United States, obliterating 16 million hectares of farmland. Ten percent of the arable (fit for growing crops) land and 2 percent of the nation's surface area are covered, he says.

Daily commutes are also increasing as cities sprawl farther into suburbs. In the United States an hour a day in the car has become the norm. The average U.S. family takes ten car trips a day, mostly to shop, recreate, or socialize. For every 16 kilometers a person travels, approximately 14 kilometers are traveled in a car. The U.S. interstate highway system is completed, but \$200 million is spent every day improving, repairing, and building roads in the United States. Parking enforcement and traffic management on those roads cost \$48 billion annually, and another \$20 billion goes to routine maintenance. However, the National Transportation Board predicts that delays caused by congestion will increase by 5.6 billion hours between 1995 and 2015, wasting 28 billion liters of fuel. The federal General Accounting Office estimates the loss of national productivity resulting from traffic congestion at \$100 billion a year. Seventy percent of all daily peak-hour travel on interstates now occurs in stop-and-go conditions.

Reinventing the Wheel

Fortunately for the human race, alternative fuel technology has continued to develop, and replacements for the internal combustion engine may at last be

practical. Fuel cell technology, which was first demonstrated in principle in 1839, can be compared to car battery technology: both fuel cells and traditional car batteries produce electricity. The difference is that batteries store both their fuel and their oxidizer internally, which means that periodically batteries must be recharged, whereas fuel cells, like a car engine, can run continuously because their fuel and oxidizer are not sealed up inside them.

Although several kinds of fuel cells exist, developers are considering only one type, the proton-exchange membrane (PEM) cell, for cars. The modern work on fuel cells is all fairly recent, but the technical problems of the cells themselves have been mostly worked out, and the main obstacles concern building a worldwide infrastructure for hydrogen production and distribution. Fuel-cell buses preceded passenger cars onto the road, appearing in the late 1990s. Fuel-cell cars keep appearing in very small numbers (not really prototypes, but certainly not production scale vehicles, either). Most automobile developers are putting some varying level of R&D into fuel-cell development. In addition, government labs in most industrialized nations are also researching the problems of manufacturing and distributing hydrogen production technologies. However, even with the presence of fuel cars on our roads, analysts don't expect hydrogen vehicles to have a serious impact on internal combustion cars until 2015 or 2020. When hydrogen vehicles arrive, they promise a new era of sustainable, zero-emission cars and trucks.

Auto manufacturers have been forced to recognize that the future of motoring must change. The global financial and economic crises of that began in 2007 saw a lot of major car companies in serious financial trouble and requiring government bailouts. Combined with growing environmental concerns, car manufacturers have been forced to restructure and abandon some of their longstanding yet inefficient "gas guzzler" models. There is a general push for more compact, fuel efficient, and low emissions cars, including under the leadership of Japanese manufacturers, Toyota (Prius model, now in its fourth generation) and Honda, a surge in "hybrid" petrol-electric

engines. More fuel-efficient and low-emitting turbo diesel engines popular with European manufacturers are also increasing in popularity in other markets.

The Road Ahead

Although people think of the automobile as a symbol of the developed world, its impact in environmental, economic, and social terms has not been limited to wealthy nations. During the twenty-first century virtually every nation produces automobiles and automobile parts, and commodities peripheral to automobiles, from rubber to oil, play major roles in the global political economy. The automobile industry has become global in that automobile manufacturers view the world as a single market instead of as a series of nationally defined, discrete markets. Manufacturers also view production as borderless, with both automobiles and their components moving seamlessly between Europe, the United States, Asia, and Latin America. However, automobiles also present an environmental challenge that is borderless.

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E: The Environmental Magazine

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See also Oil; Transportation—Overview

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Aviation

The airplane invented by the Wrights in 1903 found few practical uses until World War I, when its role in warfare led to rapid improvements in speed, range, and reliability. Further leaps forward during World War II paved the way for the air travel of today—safe and affordable for hundreds of millions of passengers.

Wilbur and Orville Wright are credited with inventing the airplane in 1903. What separated the brothers from all those before them who tried to build such a craft was, simply, that the Wright airplane was capable of sustained, powered, and controlled flight. Air passing over a wing generated lift, while surfaces on the craft manipulated some of the air, providing directional control—all of this sustained by an engine that provided thrust.

For the next eleven years the airplane was a solution in search of a problem: no one seemed to know what to do with it. Even at the start of World War I, aviation's potential remained unclear—at least to the generals. But its flexibility soon became apparent, and the airplane found many roles in the war: air-to-air fighter, bomber, and observation platform.

War often leads to rapid technological advances. At the start of World War I most airplanes were at least biplanes—two wings—and were built of wood and fabric. Yet by war's end the Fokker Company was producing airplanes with welded steel truss fuselages, while the Junkers company built monoplanes made entirely of metal. Speed, range, and reliability increased as well. And while the first four-engine airplane predated the war (Russian designer Igor Sikorsky's *Rusky Vitaz*), multiengine bombers of colossal size were fairly common by the end of it.

Interwar Years—Dawn of Commercial Aviation

In the period between the two world wars aviation's commercial potential blossomed. Not only did planes fly passengers, they carried freight, mail, entertainers, and explorers. At the same time the airplane's use expanded from within the industrialized world to encompass the entire globe.

Europeans were the first to establish regular, lasting commercial aviation. Many of the large, multiengine airplanes that survived the war were modified to carry passengers. Using these, several European nations established national airlines offering service within the continent. Still possessing colonies around the world, these powers saw the airplane as a fast way to move people to and from their possessions. They subsidized the airlines because they were flagships—demonstrations of prestige and power—and because without the subsidy the airlines would have gone bankrupt.

By contrast, the United States was more restrained about direct government subsidies for commercial ventures; lacking a major sponsor, the airplane remained something of an orphan. The U.S. government did offer financial support through the airmail system, and private companies flew the airmail and an occasional paying passenger, but little effort was made to cater to passenger traffic. A pivotal moment for aviation came in 1930 with the restructuring of the method by which companies were paid for the mail they carried. Rather than paying strictly by the weight of the mail, the new formula factored in internal volume. This spurred aircraft manufacturers to design new and larger planes able to carry passengers



J. J. Hammond, the first pilot to carry passengers in a powered aircraft in Australia, and his Boxkite plane at Ascot Racecourse, Sydney, 5 May 1911. Photo by Sam Hood. State Library of New South Wales.

in enclosed cabins. Although the ruling applied only in the United States, it had ramifications the world over, for it led to the modern commercial airliner.

The airplane demonstrated its value in less developed parts of the world as well. Companies in South America employed single-engine airplanes such as the Junkers F-12 to reach remote outposts, while French Latecoeres carried mail from Europe down the west coast of Africa, and even across the Atlantic to Brazil.

Technological Developments

Although wood as an aircraft construction material had a long tradition, metal as an aircraft material grew in both popularity and use. This stemmed from several things: new knowledge about the properties of metal; new alloys; cultural embrace of a new material (such as duralumin) in place of an old one (wood); and aircraft accidents blamed on failed wooden components.

The development of the stressed-skin (monocoque) fuselage increased the useful internal volume of

aircraft. A monocoque fuselage is a shell in which the loads carried by the aircraft in flight are borne by the fuselage's skin. (An aluminum or composite canoe is an example of a monocoque shell.)

First proposed in the late nineteenth century, the idea of a variable-pitch propeller was impractical until aircraft routinely operated at more than 300 kilometers per hour; below that speed a fixed-pitch propeller performs well. The effect of changing the propeller's pitch—the angle at which the blade meets the air—is not unlike having gears on a bicycle.

Researchers found that shrouding the engine with a cowl would provide both better cooling (most engines at the time were air-cooled) and lower drag. This last item translated into higher efficiency and greater speed, and manufacturers worldwide quickly adopted the cowling.

In addition to ground-based weather stations set up to inform airborne traffic of conditions en route, new navigation instruments to assist pilots in finding their way in clouds became available in the 1930s. These included radio navigation, which allowed a pilot to follow a course without any visual references, and

The saying "Getting there is half the fun" became obsolete with the advent of the commercial airline. • Henry J. Tillman (1863–1947)

gyroscopes. The ability to navigate without visual references outside the aircraft was known as "blind flying" or "instrument flight."

In 1930 the Englishman Frank Whittle patented his idea for an aircraft turbine engine. Not long after he received his patent, Hans Joachim Pabst von Ohain, a German aeronautical engineer, conceived and designed his own turbine engine, independent of Whittle's efforts. Whittle was the first to operate a gas turbine aircraft engine, in 1937, but von Ohain's design was the first to actually power an airplane, when it carried an HE 178 into the air in 1939. Both British and German turbojet aircraft saw military service during World War II, but they came too late to prove decisive.

While these technological developments increased the reliability and practicality of airplanes, water remained the preferred landing surface for most long-distance aircraft. This was because land-based runways entailed construction and maintenance costs, whereas water did not, and seven-tenths of the earth's surface is water, affording almost limitless and free runways. Possessing numerous colonies around the globe, European nations found the airplane in general, and the seaplane in particular, the ideal means to establish quick access to other parts of the world. Great Britain led the way, with its large fleet of seaplanes crisscrossing the globe, carrying passengers and mail to Africa, Asia, and South America.

These and other developments came during a period in which there was little widespread public support for aviation. As often as not, aviation appeared more a sport than a practical pursuit, and it was uncommonly dangerous. Ironically, many of the technological advances came during a worldwide economic depression. Much of the push for these developments came from governments willing to support the fledgling technology for its potential, even while the marketplace remained skeptical about its value. This support usually came in the form of military funding, which, in the United States, kept several aircraft companies from failing.

In World War II the airplane was used in much the same way as it had been in World War I: as freighter,

strategic and tactical bomber, long-distance fighter, observation platform, and ground attack machine. One of the few dramatic evolutions was in naval aviation: World War II introduced the airplane as a potent naval weapon flying from floating airports (aircraft carriers). And once again, war led to accelerated technological developments, including the adoption of autopilots, instrument landing systems, turbo-supercharged intercooled engines of extraordinary power and complexity, and the first ejection seats for aircraft. In spite of the similarities in the airplane's use during the two world wars (a sign of a maturing technology), there were notable differences, among them the sheer number of airplanes produced for military use, and their capabilities. Both the Americans and the British, for example, regularly sent more than a thousand bombers on a single mission, each carrying several tons of bombs. The Boeing B-29 had a range approaching 6,500 kilometers and bomb payload of 10 tons. Even fighters could fly nearly 2,000 kilometers with additional fuel tanks.

With its extensive wartime use, the airplane's reliability ceased to be a major concern. Additionally, since most aircraft in the period had flown from land-based airfields, new airports dotted the land. These new airports, coupled with improved engines and greater endurance, spelled the end of the era of flying boats, once the mainstay of international airlines.

Postwar Aviation

Of the wartime developments, the turbine engine has had the greatest impact, for it dramatically increased the speed at which aircraft can fly. But researchers found that as airplanes approached the speed of sound (Mach 1), they encountered compressibility. As an airplane approaches Mach 1 it compresses the air in front of it, creating shock waves that cause a number of problems, chief among them control. A swept wing, with an angle of 35 degrees or more, delayed this compression and reduced the control problems.

Technological Developments

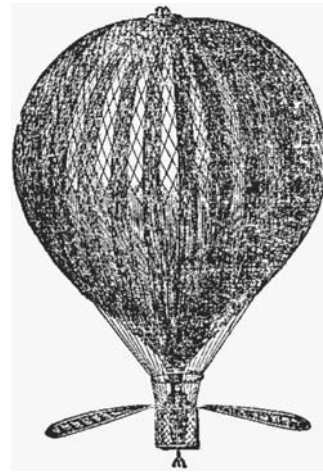
Flying at supersonic speeds—exceeding Mach 1—was the holy grail of the aviation industry. Solving the control issues associated with compressibility enabled the X-1 to exceed Mach 1, in 1947. This success led to true supersonic aircraft, almost all of which were and are built for military use. Two different types of supersonic airliners were built, but they proved too expensive to remain in service.

With the maturation of the airplane's shape and power, the next major development was the systems revolution: the advent of computerized control of aircraft and their systems in place of direct human and mechanical control. Unmanned aerial vehicles, or UAVs, enabled by the systems revolution, were the next step—aircraft that fly autonomously or are controlled by a pilot on the ground.

Computers, once rare, are now almost ubiquitous on modern aircraft, controlling or monitoring nearly everything related to flight. Linked to a network of satellites in the Global Positioning System (GPS), they enable one to navigate with remarkable precision and locate oneself anywhere in the world within a few meters or less.

Commercial Aviation

Following the end of World War II, the British had the greatest technological lead with turbine engines. Their De Havilland DH 106 *Comet* entered service in 1952, the world's first pure jet airliner. That decade saw a number of other jet airliners come to market as well, including the Soviet Tupolev Tu-104, the Boeing 707, the Douglas DC-8, and the Sud Aviation *Caravelle*. Unlike its competitors, the twin-engine *Caravelle* was built with an entirely new idea in mind—short-distance flights between smaller cities, rather than long-distance and even intercontinental flights that best suited the larger, four-engine aircraft. The *Caravelle* pioneered an entire category of commercial aircraft—the short-haul airliner. In all this, flying remained an exclusive, expensive, and fairly uncommon activity.



Unlike this balloon, first launched in 1784 by Vincent Lunardi in London, the Wright brothers' airplane of 1903 was capable of sustained, powered, and controlled flight.

Economy of scale forced a gradual change, however, and commercial airliners grew in size or squeezed more seats into the same space, lowering ticket prices. Once luxurious machines resembling first-class rail cars in their accommodations, airliners increasingly mimicked buses. This change was typified by the Boeing 747, the largest airliner available in 1970, which was so large it had two decks.

Social Impact

In 1927 Charles Lindbergh flew from New York to Paris, claiming the Orteig Prize offered for the first nonstop flight between the two cities. Lindbergh's impact was far from simple record setting: his success convinced many that aviation was more than a lark. One measure of his impact was the jump in air passengers in the years immediately following his flight. Insignificant in numbers before Lindbergh flew the Atlantic, airline passengers in the United States surged from 12,594 in 1927 to 52,934 in 1928. By the end of the twentieth century, jet-powered airliners had become the mainstay of commercial service worldwide, capable of great

speeds (nearly 1,000 kilometers per hour in many instances) and range. These flying behemoths can ferry five hundred passengers at once from place to place, and their efficiency has had a dramatic effect on human mobility.

Despite economic crises, the threat of health pandemics and terrorism, and the occasional air disaster, every year countless people around the world fly thousands of miles in mere hours for both work and pleasure. In 2008, as many as 4.87 billion passengers took to the skies. Travel, once a luxury reserved for the wealthy who had the time and the money for a journey, is now accessible to an extraordinary swath of people. Almost no place on the planet is inaccessible, thanks to the airplane's ability to deliver anyone to any destination quickly. This much air travel can't help but have an impact on the environment; and in an era of heightened concern over carbon emissions and climate change, the air travel industry is having to consider and respond to these concerns.

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See also Space Exploration; Transportation—Overview; Warfare—Air

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Aztec Empire

The Aztec Empire of central Mexico dominated through imperial rule for nearly a hundred years as overlords took control of numerous city-states in the regions, gaining power and wealth. The vast and powerful empire attracted Spanish invaders seeking wealth and treasure. These invaders brought with them disease and advanced weaponry that eventually led to the defeat of the Aztecs and the fall of the empire.

The Aztec Empire dominated central Mexico from 1430 until its conquest by Spanish conquistadors in 1521. At its height it ranged from the Gulf coast to the Pacific, and from nearly 160 kilometers north of Mexico City to the present-day Guatemalan border. It encompassed high plateaus, broad and narrow valleys, daunting mountain ranges, and verdant tropical forests.

Antecedents

As the last great political force in Mesoamerica, the Aztecs drew on the experience and accomplishments of a succession of earlier civilizations. In central Mexico, the monumental city of Teotihuacan flourished from 150 CE until approximately 750. This city established strong regional control in addition to conquering more distant areas, and it engaged in trade with and exercised political influence over polities as distant as those of the Maya in the lowlands of present-day Guatemala. Later, from 950 until around 1150, the city of Tula (in present-day Hidalgo), a major regional center of the Toltec people, gained prominence; it was closely tied to the



city of Chichén Itzá in northern Yucatán. However, Tula does not appear to have developed an empire in the manner of the earlier Teotihuacanos or the later Aztecs.

The Aztecs drew on much of the Teotihuacan experience in developing their own empire: their capital city of Tenochtitlán was laid out on a grid plan (as was Teotihuacan), they engaged in human sacrifice at a state level, they conquered far-flung territories in creating an empire, and they gave prominence in their godly pantheon to the deities Quetzalcoatl and Tlaloc, both of whom appear in somewhat different form at Teotihuacan. From Tula and the Toltecs the Aztecs appear to have gained their understanding of



Teotihuacan, the ancient “City of the Gods” during the Aztec Empire. Tourists stroll down the Avenue of the Dead past the Pyramid of the Sun, left. Photo by Arturo Delfin, (www.morguefile.com).

power politics, and they based their legitimacy to rule on a Toltec foundation. The Aztecs also venerated the achievements of the Toltecs at a nearly mythical level, attributing to the Toltecs all of the fine arts and cultural achievements (such as the calendar and writing) that the Aztecs themselves enjoyed. Aztec appreciation of their predecessors is clear not only from these emulations, but also from their inclusion of images of Teotihuacan, and the presence of other “antiquities” as offerings in buried caches in the Templo Mayor district of Tenochtitlán.

The Basis of Empire

The Basin of Mexico served as the seat of power for the Aztec Empire. This lake-dominated valley had been a popular settlement choice for a long succession

of sedentary peoples, and indeed Teotihuacan is located in its northern region. Beginning around 1200, several hunting and gathering groups moved south into more fertile regions from the dry northern deserts. Leaving their original homeland of Aztlan (as yet unidentified), seven of these groups stopped at Chicomoztoc, or Seven Caves, and undetermined location in present-day northern Mexico. While historical accounts offer varying ethnic identifications, these groups moved south and settled in key locations around the Basin of Mexico and in valleys to the east, south, and west. These included the Acolhua, who established themselves east of Lake Texcoco; the Tepaneca, who settled to the west of the lake; the Xochimilca and Chalca, who took up residence in the south of the basin, and the Matlatzinca, Tlahuica, and Huexotzinca, who settled in neighboring valleys. In

each case, the people and their cultures blended with the resident sedentary populations.

The last to arrive were the Mexica who, after a dramatic arrival and turbulent relationships with resident polities, established themselves on a small island in Lake Texcoco in 1325. They named their city Tenochtitlán; it was to become an enormous metropolis and center of the Aztec Empire.

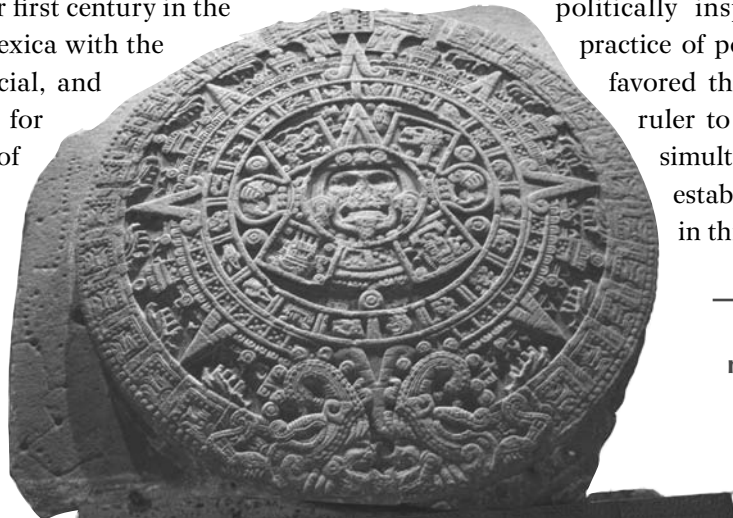
From 1325 until 1428 the Mexica pursued long-standing and widely accepted strategies on their road to ultimate imperial dominance. Renowned warriors, they served as mercenaries to the most powerful polity in the Basin of Mexico, Azcapotzalco (flourished c. 1300–1428). Their successes on the battlefield earned them lands, tributaries, and wealth, which they used to enhance their resource-poor island settlement. They concentrated on building and expanding their urban center beyond its small island setting and into the lake itself by claiming lands from the shallow lake bed. Ultimately (by 1519) the city would house 200,000 to 250,000 people. During this early period they also negotiated strategic elite marriages, particularly with the Colhuacan dynasty in the southern part of the basin. The Colhua claimed descent from the Toltecs, and establishing genealogical ties to that heritage gave the Mexica an enhanced power base and legitimacy to rule. With this dynastic connection forged, subsequent Mexica rulers successfully sought favorable marriage ties with other dynasties in the Basin of Mexico. In short, their first century in the basin provided the Mexica with the military, political, social, and economic foundation for their second century of imperial dominance.

The Growth of Empire

In 1428 the elderly ruler of the powerful city-state of Azcapotzalco died. The

Mexica and their neighbors, the Acolhua of Texcoco, took advantage of the ensuing internal power struggle, conquering that ancient seat of power. In the course of that war, the Mexica and Acolhua also joined with the Tepaneca of Tlacopan on the western shore of Lake Texcoco. These three major city-states joined to form a tripartite alliance, commonly known today as the Aztec Empire or the Triple Alliance (the name Aztec means “People of Aztlan,” although this term did not enter common usage (in scholarship, but not as a term the people used in reference to themselves) until well after the Spanish conquest. Scholars often use it today to refer generally to Nahuatl-speaking peoples in and around the Basin of Mexico in late post-Classic times). The people often referred to themselves as Mexica, Acolhua, Xochimilca, Chalca, and so forth, based on their city-state and ethnic affiliations. The Mexica under Itzcoatl (reigned 1426–1440) and the Acolhua under Nezahualcoyotl (reigned 1418–1472) took the initiative in the alliance’s expansionistic enterprises.

After consolidating their new political position in 1430, the Triple Alliance forces began an aggressive program of military conquest within the Basin of Mexico. The city-states they conquered were obligated to provide tribute to their conquerors on a regular basis, but they were also given opportunities to participate in and reap rewards from Triple Alliance conquests in more distant realms. The Triple Alliance rulers also forged alliances with these tributary city-states, solidifying their dominance through politically inspired marriages. The practice of polygamy among nobles favored this strategy, allowing a ruler to marry several women simultaneously and therefore establish numerous alliances in this fashion. Nonetheless,



The intricately carved, massive *Stone of Sun*, or Aztec calendar, in Mexico City. Photo by Arturo Delfin (www.morguefile.com).

the conquests and alliances were not necessarily easy: for instance, Chalco, in the southeast corner of the Basin of Mexico, waged on-and-off war with the Triple Alliance powers for some three additional decades, finally succumbing to Aztec military might in either 1453 or 1465.

Even before the conquest of Chalco was concluded, the Mexica and their allies were already making military advances on city-states beyond the Basin of Mexico. The Mexica king Motecuhzoma Ilhuicamina (Motecuhzoma the Elder; commonly known in English as Montezuma I; reigned 1440–1468) spent his first decade of rule further consolidating conquests in the Basin of Mexico. Then he and subsequent Mexica rulers Axayacatl (reigned 1468–1481), Tizoc (reigned 1481–1486), Ahuitzotl (reigned 1486–1502), and Motecuhzoma Xocoyotzin (Motecuhzoma the Younger, or Montezuma II; reigned 1502–1520), along with the tenacious Nezahualcoyotl and his son Nezahualpilli (reigned 1472–1515) of Texcoco (who together reigned from 1418 until 1515) led the Triple Alliance to military conquests beyond the basin to ultimately bring much of central and southern Mexico into their imperial net. In these conquests, Tlacopan remained the lesser partner.

This progression of imperial expansion was not without its setbacks. Provinces sometimes rebelled against their overlords, and reconquest campaigns had to be mounted. The Mexica ruler Motecuhzoma Xocoyotzin spent a great deal of military energy simply reasserting imperial power over previously conquered city-states. Indeed, the empire may have come close to its maximum territorial extent by the time the Spaniards arrived in 1519. To the north lay deserts and areas relatively unattractive for conquest, to the east lay the Gulf of Mexico, and to the west sat the powerful Tarascans. To the south lay the rich regions of the Mayan city-states. Their considerable distance from the Basin of Mexico may have been a deterrent to Aztec conquest, since all travel and transport was by foot or canoe. Access to the precious Mayan resources was effectively obtained through the energetic commercial activities of professional merchants, some of them engaged by the Aztec state.

The Aztecs were not invincible. A major war between the Aztecs and Tarascans in 1478 or 1479 resulted in a devastating defeat for the Aztec forces, and the Triple Alliance avoided engaging the Tarascans in a major war again. There were also pockets of unconquered city-states within the imperial bounds. Most notable among these were the Tlaxcallans to the east of the Basin of Mexico, who, although surrounded by the Triple Alliance Empire, remained independent of the Aztec yoke. In 1519 they became decisive allies to the Spanish conquistadors in their conquest of Tenochtitlán.

Further serious problems beset the empire during its short ninety-one-year history. For instance, from 1450 to 1454 a calamitous famine wracked central Mexico, to the extent that thousands of people perished and some that survived exchanged their freedom for maize with the Totonacs of the Gulf coastal region. And in 1503 a devastating flood consumed much of Tenochtitlán, necessitating an energetic rebuilding program.

Structure and Strategies of the Aztec Empire

The primary goal of imperial rule was the acquisition of tribute paid on a regular basis to the Triple Alliance overlords. Upon conquest, a subdued city-state would agree to scheduled payments of locally available goods and products such as maize, chilies, honey, raw cotton, clothing, wood products, incense, warriors' costumes and shields, greenstones, gold, feathers and jaguar skins. As long as these demands were met and the city-state did not rebel, the imperial powers took little interest in the affairs of their subjects. Politically, local rulers were usually allowed to remain in their traditional positions. The most prominent and insistent Aztec presence in conquered areas was in the form of imperial tribute collectors. Only occasionally, in recalcitrant areas, were Aztec officials such as governors installed or military garrisons stationed.

This loose structure disguised a well-considered system of political organization. In the core area of

the empire (the Basin of Mexico), the Aztec Empire had the most time to integrate conquered city-states into its political and economic net. They pursued dynastic marriages with local rulers, then installed the offspring of these royal marriages in the conquered city-state: the new ruler therefore combined local legitimacy with imperial loyalties. In some cases new administrative offices were created, and in a few instances local rulers were actually replaced by those selected by the imperial powers. More subtly, city-states of the basin were often required (or invited) to participate in military ventures as the Triple Alliance advanced to conquer far-flung polities. If successful, warriors of these subjugated city-states could gain gifts and titles as rewards, thus heightening their interest in remaining part of the empire. They were not only attached to the empire, they had become participants in it.

More distant conquered areas saw fewer advantages to their conquest. It was usual that many of the conquered warriors were taken to the Aztec capital cities for sacrifice immediately following conquest. The demands of tribute were unrelenting, and if an Aztec army on the march passed through, the local population could be drained of its subsistence resources to supply the military.

The Triple Alliance employed well-considered strategies in establishing and maintaining its imperial control in outlying areas. An economic strategy focused on the city-states (administratively grouped into provinces) that paid regularly scheduled tribute to the Aztecs. Beyond the Basin of Mexico, this totaled thirty-two provinces that provided much economic support for the rulers and people of the Triple Alliance capitals: maize and other foodstuffs were stored against possible famine; warfare paraphernalia was held for military use; specific goods were stored and distributed as gifts, commissions, or for foreign trading enterprises; the enormous imperial bureaucracy and expensive priestly activities were supported; raw materials were fashioned by urban artisans into luxury wares for the nobility; and in general the extravagant lifestyle of imperial royalty and palatial life was enhanced. The imperial powers maintained this

continual flow of tribute goods through threats of reprisals, usually entailing reconquest and a doubling of tribute demands on a rebellious province. As the empire continued expanding, an additional strategy became useful. This was a frontier strategy, and entailed the establishment of client states along hostile borderlands, astride critical transportation routes, or near critical but contested resources. In place of an outright military conquest, the Aztecs negotiated mutually beneficial agreements with these city-states, cemented with gifts. Client states served the empire by assuring borderland control, open transportation routes for merchants and troops, and access to critical resources. In this strategy, the Aztecs found an inexpensive way of managing their distant affairs. Nonetheless, they did establish fortresses and station garrisons at specific military hot spots, whether along volatile borders or within defiant provinces.

Fall of the Aztec Empire

In early 1519 a small force of Spanish conquistadors landed on the Mexican mainland. They had learned of the large empire led by Motecuhzoma and of his vast wealth; tales of treasures of gold were of special interest to the Spaniards. Under the leadership of Hernán Cortés, they traveled inland with the intent of conquering this rich land. A number of factors contributed to the ultimate Spanish victory. Spanish weaponry had some small advantage, with muskets, cannons, and especially steel swords. Horses provided mobility and height in battle, and ferocious dogs sparked considerable fear in the hearts of the native warriors (the small native domesticated dogs, commonly used as food, were of a different genre entirely from the large European canines). In the heat of battle, a major goal of native (but not Spanish) combat was the capture of the enemy for sacrifice, resulting in valorous risks and high indigenous casualties. Most important was the tenuous hold the Aztecs had on their conquered and client city-states, and the presence of significant unconquered polities. Cortés took early advantage of this loose organization to convince many of these city-states,



and especially the powerful Tlaxcallans, to join him in his goals of conquest; in the end, the small force of Spaniards was massively augmented by native warriors. The seeds of destruction were built into the Aztec imperial structure. Cortés's siege tactics employed late in the conquest took a final toll on a starving Tenochtitlán devoid of allies and wracked with smallpox, a disease that arrived with the Europeans and to which the local population had no immunity. Motecuhzoma had perished and his successor Cuitlahuac fell to the disease during the siege. On 13 August 1521 the last Aztec ruler, Cuauhtemoc, was captured by the Spanish conquistadors, signaling the end of Aztec imperial dominance in Mesoamerica.

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See also Art—Pre-Columbian Central and South America; Mesoamerica; Motecuhzoma II; Trading Patterns, Mesoamerican; Warfare—Pre-Columbian Mesoamerica and North America

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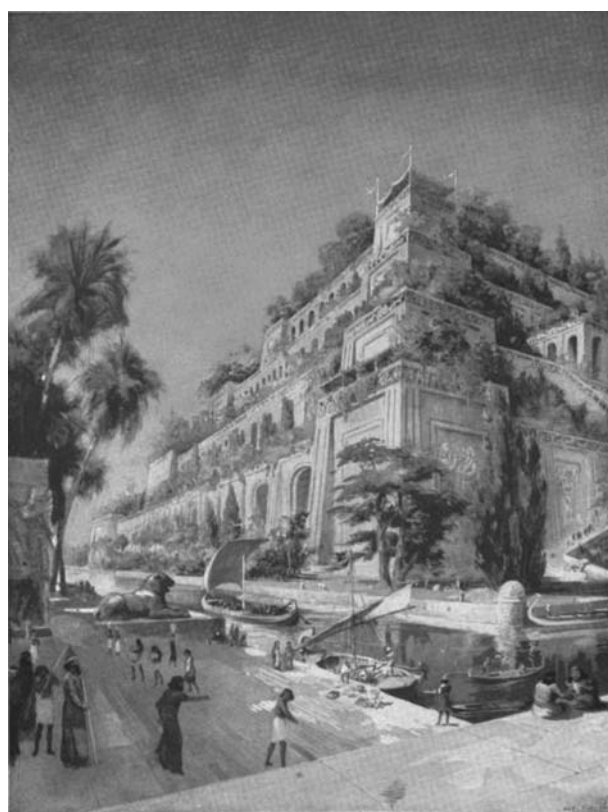
Babylon

Babylon was an important city-state of ancient Mesopotamia. Its remains can be found just south of Baghdad in present-day Iraq. Founded as a relatively small town around the beginning of the third millennium BCE, Babylon has been at the center of the rise and fall of a number of important dynasties and empires, including the Amorite, Hittite, Kassite, and Assyrian.

At its height, Babylon was one of the largest, most important cities of the ancient world. It was located in central Mesopotamia, near the point where the Tigris and Euphrates flow closest to one another. This same region has been home to many capital cities over the centuries: Kish, Agade, Seleucia, and Baghdad among them.

The city's ancient name, Babil, may well be in an unknown language that predates Sumerian and Akkadian in Mesopotamia. It came to be understood in Akkadian as *bab-ili*, meaning “gate of the god,” also written in Sumerian as *ka-dingir-ra*, which has the same meaning. *Babylon* is the Greek version of the name. Today we refer to the southern half of ancient Mesopotamia—the region extending from around Babylon south to the Persian Gulf—as Babylonia, but in ancient times this land was called Sumer and Akkad.

The city of Babylon was well known to Greek and Roman historians. The Greek historian Herodotus, who may have visited the city in the fifth century BCE (or based his account on the reports of eyewitnesses), wrote that “it surpasses in splendor any city of the known world” (Herodotus 1972, 185). Classical authors also credited Babylon with one of the ancient wonders of the world: the Hanging Gardens of Babylon.



An artist's reconstruction of the fabled Hanging Gardens of Babylon, with its tree-lined terraces and the surrounding canal. From *Wonders of the Past*, Sir John Alexander Hammerton (Ed.), published c. 1923–1933.

Babylon is mentioned frequently in the Bible. The Tower of Babel was certainly thought to have been located there; Babylon was the place to which Nebuchadnezzar II (reigned 605–562 BCE) exiled the Jews after the conquest of Judah; and the city was said to be home to Daniel. Therefore, unlike most other cities of the region, Babylon was not forgotten after its demise.

Babylonians exhibit mixed reactions to the Persian emperor Cyrus's invasion in 539 BCE. From *Story of the Greatest Nations: From the Dawn of History to the Present*, by Edward Sylvester Ellis, published c. 1901–1906.



Long after the buildings had disintegrated, the northernmost mound of the site even retained the name Tell Babil. What was forgotten, however, was the long history of the city before the period of Nebuchadnezzar.

Unfortunately, the underground water table at Babylon rose over the centuries, so even archaeologists have had difficulty fathoming the earlier history of the city. The occupation levels from the third and second millennia BCE are largely waterlogged. It is possible that, like the Assyrian city of Nineveh, the site was occupied long before written history, but there is no way to know. What we do know about Babylon before the first millennium BCE comes largely from textual records from other ancient cities.

The earliest known mention of the city of Babylon comes from the time of Sharkalisharri (reigned c. 2217–c. 2193 BCE), a king of Akkad and descendant of the empire-builder Sargon (reigned c. 2334–2279 BCE). The inscription mentions two temples in the city, but little else is known from this early time.

First Dynasty of Babylon

At the beginning of the nineteenth century BCE, the history of Babylon comes into sharper focus. Around

2000 BCE the native Sumerian and Akkadian peoples of Mesopotamia had been subject to an invasion of Amorites, “westerners” who had settled in the river valley and largely adopted local customs. Amorite, like Akkadian, was a Semitic language, but its speakers did not write it down. They continued to use Akkadian and Sumerian in written documents.

Amorite kings took control of several Mesopotamian cities, Babylon among them. Over the next century, the Amorite dynasty of Babylon, founded by Sumu-Abum (reigned 1894–1880 BCE), consolidated its control over the surrounding lands. By the early eighteenth century BCE, a dozen kingdoms, including Babylon, dominated Mesopotamia and Syria, some bound together by alliances, others often at war.

Hammurabi (reigned 1792–1750 BCE) is considered to be the greatest of the kings of the first dynasty of Babylon (also called the Old Babylonian period). From the beginning of his reign he emphasized that he was a king who was concerned with justice. It was traditional at that time to refer to years by names rather than numbers, and Hammurabi’s second year name shows his concern for justice: “The year that Hammurabi established equity and freedom in his

If a man put out the eye of another man, his eye shall be put out.

• **Hammurabi** (eighteenth century BCE)

land” (Horsnell 1999, 2:106). But it was not until very late in his reign that Hammurabi decreed the set of laws for which he has become best known. By that time he had brought much of Mesopotamia under his rule, from Mari in Syria (just north of modern Iraqi border) to the Persian Gulf.

Although Hammurabi was not the first lawgiver (written laws had existed in Mesopotamia for more than two hundred years when he came to the throne), his laws made a strong impression on subsequent generations of Mesopotamian scribes, who copied and studied them for centuries. His laws also had an influence on surrounding peoples such as the Hittites and Canaanites, and eventually on the Israelites and therefore on Biblical law.

Hammurabi venerated many gods, rebuilding their temples and presenting them with thrones and gifts, but he credited his successes mostly to the city god of Babylon, Marduk. The god’s statue was housed in a great temple in the center of the city. Marduk’s cult was an essential part of Mesopotamian religion from this time on.

Hittites and Kassites

Around 1595 BCE, the Hittites (a people from present-day Turkey and northern Syria) seem to have sacked Babylon and taken many Babylonians captive. They also captured the statues of Marduk and his wife Sarpanitum and took them back to their own land of Hatti, where the statues stayed for decades. Unfortunately, this event is poorly understood. It is almost unknown in Babylonian records and mentioned only briefly in Hittite records. No archaeological evidence exists because of the problems with excavating early levels at Babylon. But it is clear that the Hittites did not stay or attempt to rule Babylon.

The century after the conquest of Babylon remains something of a mystery, due to an almost complete lack of textual sources and little archaeological evidence, but by 1500 BCE a new foreign dynasty had taken control of Babylon: the Kassites. Their origin is unclear, their language known only from the evidence of their personal names. Like the Amorites, they adopted

Babylonian ways, and they proved to be adept rulers. Mesopotamia was united and relatively peaceful during the centuries of Kassite rule. The Kassite kings of Babylon communicated regularly with the Hittite kings in Anatolia, the Syrian kings in Mittani, and the New Kingdom pharaohs of Egypt. Their correspondence, found in Egypt and Anatolia, shows that the Babylonian kings sent the Egyptian kings gifts of horses and lapis lazuli, in exchange for which they always wanted gold. They also wrote extensively about the marriage alliances that were set up between them. Several Babylonian princesses became queens of Egypt.

By the thirteenth century BCE, a new power began to assert itself to the north of Babylon: Assyria. From this time onwards, Babylonia and Assyria became the chief powers and rivals in Mesopotamia. Although the region suffered a decline during the twelfth and eleventh centuries BCE, during which time the Kassite dynasty collapsed, the division of the land into two halves continued.

Babylon during the Assyrian Empire

During the time of weakness that marked the end of the Kassite period, yet another foreign people from the west, the Arameans, entered the land in large numbers, sometimes as immigrants, sometimes as invaders. But whereas the languages of the Amorites and Kassites seem to have been lost over time, the Semitic language of these new arrivals, Aramaic, began to replace the ancient language of Akkadian as the spoken tongue of the Mesopotamian people. Aramaic was widely used in both Babylonia and Assyria, even though for centuries Akkadian remained the standard written language. Aramaic was to be the predominant language in the region until the spread of Arabic over 1,500 years later in the seventh century CE.

Between the end of the Kassite dynasty and the eighth century BCE, six local dynasties ruled Babylon, none of them able to achieve the type of power that had been characteristic of Hammurabi’s dynasty or of the Kassite kings. They were sometimes on good terms with the Assyrians, but at other times



they were hostile, especially as Assyria became more and more powerful.

The Assyrians seem always to have respected Babylonian culture and venerated Babylonian gods. Their powerful emperors generally treated the Babylonians with much more generosity than they did their other neighbors. But still, warfare often broke out between the two lands, with several Neo-Assyrian kings claiming direct control over Babylonia or placing puppet kings on its throne.

In the eighth century BCE a fourth major group of settlers and invaders appeared in Babylon. These were the Chaldeans, who came from the marshes in the south. Although they seem to have spoken the same Akkadian language as the local Babylonians, they were regarded as the enemies of the Babylonians for many years. Eventually, though, the Chaldeans, like the Kassites and Amorites before them, became rulers of Babylonia.

The Neo-Babylonian Period

The second great period of Babylonian dominance, the Neo-Babylonian period, came a thousand years after Hammurabi's empire collapsed. The Babylonians, collaborating with the Medes, overthrew the Assyrian Empire in 612 BCE and took over control of much of the region. The dominant figure from this time was the Chaldean king of Babylon, Nebuchadnezzar II, who was both a conqueror and a prolific builder.

It is the Babylon of his reign that is the best known—a city of unprecedented size and grandeur. This is the city that was described by Herodotus and the one that has been excavated and partially reconstructed. The immense city walls were 18 kilometers long, with at least eight monumental gateways, and they surrounded an area of 850 hectares. Inside the city, the ziggurat (stepped tower) of the temple to Marduk, the Esagila, was built up to great height, visible from far and wide. It is believed to have been the inspiration for the Bible's story of the Tower of Babel. Unfortunately, it was completely dismantled in ancient times, so no one can reliably determine how tall the tower actually stood.

Everywhere, construction was of baked brick, not the usual sun-dried brick that had dominated Mesopotamian architecture for millennia. Whole regions of the city, such as the processional way leading to the Ishtar Gate, were faced with glazed bricks in a vivid blue, decorated with images of lions and dragons sculpted in relief and glazed in bright shades of yellow, black, and white.

Archaeologists have found no clear evidence for the famous Hanging Gardens, which are described in classical sources as terraced gardens on an artificial structure—a “wonder” because of the technology it would take to grow trees on top of a building. Nor did any contemporary source mention the gardens. Herodotus does not even mention them in his otherwise detailed description of Babylon. It has recently been suggested that these gardens were not, in fact, in Babylon, but were located in Assyria. The Assyrian king Sennacherib (reigned 704–681 BCE) boasted of creating just such a terraced garden, watered by an aqueduct, in his capital city of Nineveh.

The Neo-Babylonian period proved to be short-lived, lasting less than a century. The last of the Babylonian kings was an elderly, eccentric man named Nabonidus (reigned 555–539 BCE) who neglected the annual festival in honor of Marduk and who was deeply devoted to the moon god. The Babylonian population seems to have disliked him so much that they put up little resistance to the Persian emperor Cyrus II (c. 585–c. 529 BCE) when the latter invaded in 539 BCE.

Persian and Hellenistic Periods

Initially, under Cyrus and his successors on the throne of Persia, life in Babylon was relatively unchanged. Cuneiform documents that recorded the business transactions of Babylonian merchants and entrepreneurs show that Babylon was still a rich city. The kings of Persia spent their winters in Babylon and seem to have been well disposed to the place. This was true, at least, until the reign of Xerxes I (reigned 486–465 BCE). Xerxes was infuriated by a rebellion mounted by the Babylonians, and he took out his anger on the beautiful buildings of Nebuchadnezzar,

even destroying the temple to Marduk. It is unclear whether the temple was ever properly rebuilt after that time. Xerxes imposed crushing taxes on the Babylonians once he had brought the rebellion under control.

When Alexander the Great (reigned 336–323 BCE) took over the Persian Empire in 330 BCE, he seems to have fallen under Babylon's spell. He thought that it would be one of his capital cities and had grand plans to rebuild the ziggurat of Marduk's temple. His workmen did succeed in dismantling the ruins of the earlier ziggurat, but a new one probably was not constructed before Alexander's death. The Macedonian king died in Babylon on 13 June 323 BCE, perhaps of malaria or alcohol poisoning.

Alexander's successor in Mesopotamia, the general Seleucus (reigned in Babylon 312–281 BCE), was less fond of Babylon. He built a rival city just 90 kilometers to the north and called it Seleucia; it became the Royal City in 275 BCE. Gradually trade and business activity began to move to Seleucia, making Babylon less relevant to the local or imperial economy. An edict issued by Antiochus I (281–261 BCE) required all Babylonian residents to move to Seleucia. It is clear, however, that they did not all obey, because Babylon continued to be occupied, though it was much less important than it had been. By the first century BCE, just a few buildings were left standing in Babylon, surrounded by the still-impressive city wall. The grand avenues that had once been flanked by tall buildings were gone, turned into grazing grounds for sheep and goats.

The Present

Since the Mongol invasion and conquest of Iraq, first in 1258 by Hulagu, grandson of Chinggis (Genghis) Khan, and then again in 1401 by the Turkic warrior Tamerlane (Timur), the region and its antiquities have suffered considerably. In the late nineteenth century a German team of researchers began to excavate at sites in Babylon. They dug up large areas of the Neo-Babylonian city and transported much of the Ishtar Gate to Berlin, where it can still be seen in the Pergamon Museum. Excavations

then continued under Iraqi leadership. In the late twentieth century, Saddam Hussein (1937–2006; president of Iraq 1979–2003), who saw himself as a modern-day Nebuchadnezzar or Hammurabi, had the Iraqi Antiquities Administration restore the ruins of Babylon to a semblance of their former glory. Like Nebuchadnezzar, his name was inscribed on many of the bricks used in the reconstruction. The result was a fascinating place to visit, though archaeologists lament the fact that many of the real archaeological ruins have been covered up by the modern reconstructed walls. Further damages and loss of antiquities have resulted from the United States–led war in Iraq beginning in 2003. In the early days of the war the National Museum of Iraq in Baghdad, home to thousands of manuscripts and relics from across Mesopotamian civilization, was looted. As of late 2009, less than half of the stolen items had been recovered. The U.S. military also attracted criticism for building a military base, including a helipad, on the site of ancient Babylonian ruins, causing damage to important archeological sites, including the replica Ishtar Gate. While Iraq in 2010 is far from being a popular tourist destination, it is possible that in the future visitors from around the world will be drawn again to Babylon to see the remains of what was one of the world's greatest cities.

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See also Hammurabi; Mesopotamia; Persian Empire

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Bahá'í

Founded by Baha'u'llah in the nineteenth century, the Bahá'í faith is a monotheistic religion that grew out of Islam. It recognizes Muhammad as a prophet, but not the last prophet. At the core of Bahá'í faith is the belief that all of humanity is spiritually unified and that Bahá'í will guide civilization toward an age of peace and prosperity.

The Bahá'í religion was founded and initially propagated toward the middle of the nineteenth century in the (then) Ottoman regions of Iraq, Turkey, and Palestine by a Persian-born messianic claimant named Mirza Hoseyn Ali Nuri (1817–1892), who adopted the title Baha'u'llah (Baha' Allah), meaning the “Splendor of God.” Ranging across more than two hundred counties, his followers today number 5–6 million and are known as Bahá'ís (literally “radiant ones”). Given their range throughout the world, the modern Bahá'í religion can no longer be viewed as a purely Middle Eastern movement, an Islamic “sect,” or a merely eclectic religious phenomenon.

Baha'u'llah was born a Shi'ite Muslim in a troubled Persian Islamic society. He called all humankind to a revolutionary and modernist post-Islamic religion, initially that of his predecessor the Bab (literally the “Gate”) and subsequently to the Bahá'í religion, which he founded. To some, his message transcended and superseded Islamic legal and other religious norms as the new Bahá'í religion, not only for the contemporary world but also for times extending a millennium or more into the future. The developed Bahá'í religion is centered upon actualizing a spiritual unity in diversity of all humankind

in a future world characterized by millennial justice and peace. Religion and science, Baha'u'llah and his successors indicated, should both harmoniously contribute to an advancing civilization in which racism, excessive nationalism, and materialistic capitalism are transcended.

The Religion of the Bab

Baha'u'llah became a follower of another young Persian messianic claimant, Mirza 'Ali Mohammad (1819/ 1820–1850), the Bab, at the outset of his religious mission in May 1844. He considered the Bab to be his divinely inspired forerunner. The Bab gradually established his own post-Islamic religious system and revealed new books in Arabic and Persian collectively known as the Bayan (Exposition). He was imprisoned for much of his six-year religious ministry, which ended with his execution for heresy in 1850. Several thousand of his followers were also martyred for apostasy and heresy. Though best known today as the Bab (gate to the messiah), this Persian Sayyid (descendant of Muhammad) actually claimed to be the awaited Islamic eschatological savior, the Qa'im (Ariser) or Mahdi (Rightly Guided One). He also subsequently claimed to be a divine “Manifestation of God” and underlined the eternally progressive continuity of religion, thereby transcending the Muslim concept of the finality of prophethood in Muhammad (Qur'an 33:40).

With his many revelations, the Bab claimed to disclose the deeper senses of the Qur'an and of pre-Islamic scripture, and to prepare the way for another messianic individual greater than himself. In claiming to supersede Islam, the



Modern-day view of the tomb of the Bab, who is considered the divinely inspired predecessor of Baha'u'llah. Mount Carmel, Israel.
Photo by Tom Habibi.

Bab also spoke of endless future messiahs. These superhuman, divine figures were actually preexistent and theophanic manifestations of

God, the next of whom might appear imminently or perhaps, for example, after 9, 19, 1,511, or 2,001 years.



In the Bahá'í religion the greatest name for god, Bahá', means "glory" or "splendor." The photo shows the name as it appears inside the Bahá'í House of Worship in Wilmette, Illinois. Photo by Sean M. Scully.

Bahá'u'llah and Religion Renewed

Bahá'u'llah followed and propagated the religion of the Bab from its inception in 1844 until the latter years of his exile from Iran to Iraq (1852–1863), when he began to gradually declare his own global mission. On announcing his mission on the outskirts of Baghdad in 1863, he outlawed the propagation of religion by the sword, indicated that his religion would continue for at least a millennium, and voiced doctrines indicative of the equality and oneness of all humanity.

Like the Bab, Bahá'u'llah composed thousands of scriptural "tablets" in Arabic and Persian over a forty-year period (1852–1892). These 20,000 or so revelations vary in length from a few lines to weighty books and treatises such as his *Kitab-i iqan* (Book

of Certitude, 1852), *Kitab-i badi'* (Innovative Book, 1867), and his major though slim book of laws, *al-Kitab al-Aqdas* (The Most Holy Book, 1873). Like his forerunner, he placed great emphasis upon the nonliteral interpretation of the Bible and the Quran and often gave figurative interpretations to messianic signs and latter-day prophecies. Apocalyptic upheavals and catastrophes, he explained, had been realized or would come to be fulfilled either literally or spiritually. Hopes of a new age and of the millennial future of humanity would, he predicted, definitely come to realization in a future Bahá'í-inspired new world order.

Despite being exiled and imprisoned for religious heresy for several decades of his life by Persian and Ottoman leaders, Bahá'u'llah continued to address weighty and theologically authoritative epistles to various kings, rulers, and ecclesiastics of his day.

Among those he called to God and to righteous rule were the British queen Victoria (1819–1901), the French emperor Louis-Napoleon (Napoleon III; 1808–1873), the Russian czar Nicholas II (1868–1918), and the Italian pope, Giovanni Maria Mastai-Ferretti, Pope Pius IX (1792–1878).

It was clear from his *Kitab-i 'Ahdi* (Book of My Covenant) that on Baha'u'llah's passing in Palestine in 1892, his saintly and learned eldest son 'Abd ol-Baha' (1844–1921) would succeed him. His son wrote several books and many thousands of letters expounding his father's message and visited several western countries between 1911 and the outbreak of World War I in 1914. "The Master," as 'Abd ol-Baha' was respectfully known, was in turn succeeded in 1921 by an Oxford-educated great-grandson of Baha'u'llah named Shoghi Effendi Rabbani (1896–1957), the last single head or Guardian of the Bahá'í religion. In 1963, the globally elected Universal House of Justice came to direct and govern the Bahá'í world from its center in Haifa, Israel.

Baha'u'llah's oft-repeated statement that the Earth is but one country and all humankind are its citizens continues to underpin many activities of the Bahá'í faith today. Its adherents claim that its promotion of the spiritual dimensions of the oneness of humanity, the equality of the sexes, international justice, and world peace makes the Bahá'í religion a channel for the realization of a twenty-first-century religiosity that transcends contemporary secularism and exclusivism. The faith's continuing championing of a globally selected or newly-devised universal auxiliary language and its close relationship with the United Nations since the inception of the latter in 1945 in working towards a peaceful global society are proclaimed as some of the major contributions which the Bahá'í international community has made to world history. Under the direction of the Universal House of Justice, the Bahá'í International Community has consultative status with UN organizations including United Nations Economic and Social Council, United Nations Children's Fund,

World Health Organization, United Nations Development Fund for Women, and the United Nations Environment Program.

In recent years, the Bahá'í international authority known as the Universal House of Justice has issued a statement entitled "The Promise of World Peace" (1985) addressed to the peoples of the world and another called "To the World's Religious Leaders" (2002) containing advice for the evolution towards a united humanity.

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Bands, Tribes, Chiefdoms, and States

The cultural anthropologist Elman Service devised a model in 1962 for classifying human societies into four general categories—bands, tribes, chiefdoms, and states—based on their capacity to support larger populations at higher densities. Societies are said to vary in complexity from bands, loosely organized groups of a few dozen people, to states, highly centralized and efficient societies comprised of millions, even billions, of people.

The differences among human societies around the world and through time are often striking and often challenge our understanding. Although a simple distinction between “primitive” societies and “civilization” has been popular and persistent in the West, this distinction obscures significant variation within the “primitive” category and has not been useful for investigating the processes that led to the development of civilization. When addressing such issues, anthropology has found that a model recognizing four levels of sociopolitical complexity—band, tribe, chiefdom, and state—has greater utility. These levels are based on cross-cultural ethnographic (relating to the study of cultures) data as well as archaeological evidence from both prehistoric and historic periods.

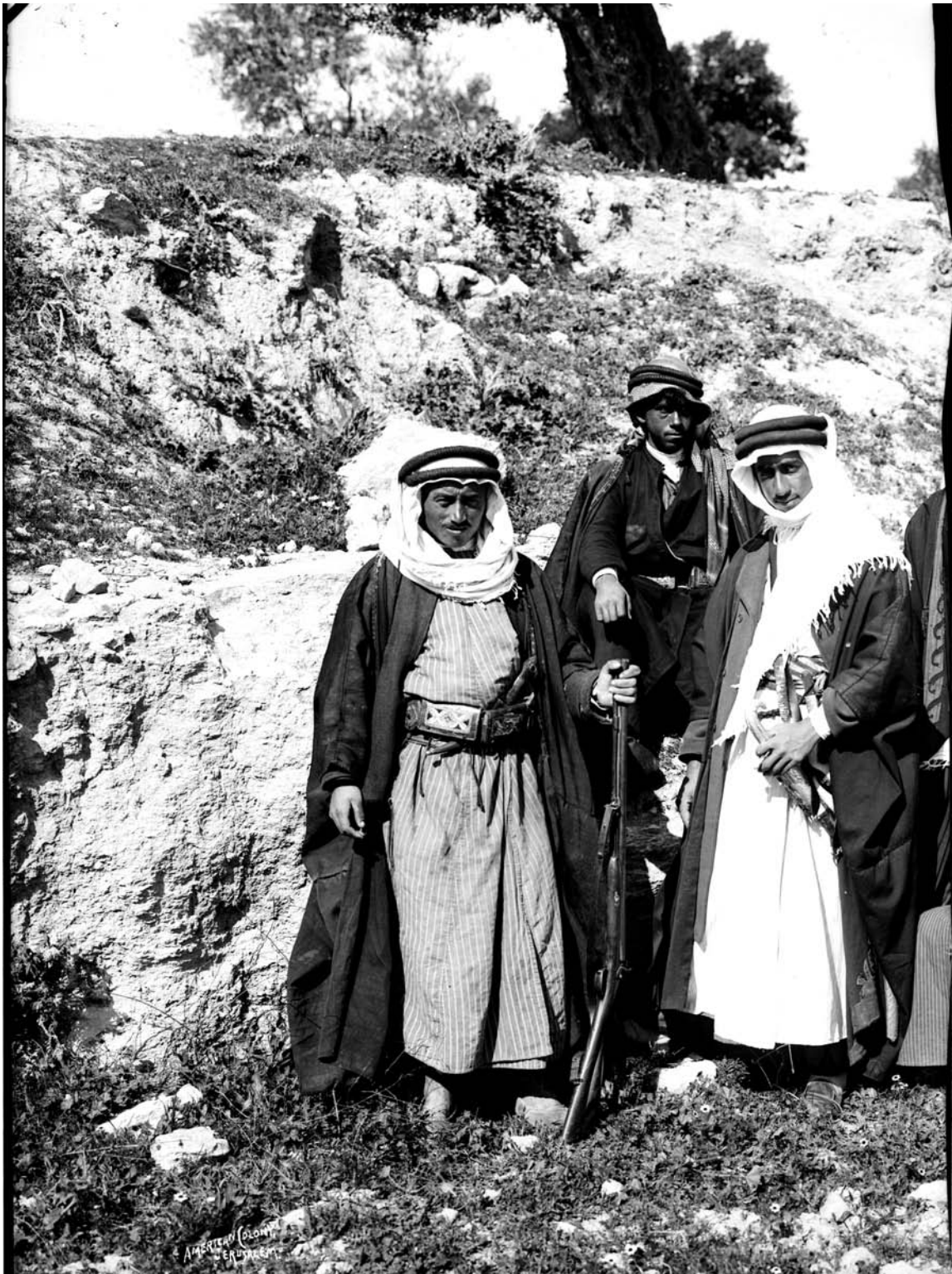
In this context complexity is seen as society’s ability to integrate people into larger, more diverse groups and more densely populated communities. This ability is closely linked to political integration in the form of increasingly centralized decision making and hierarchical power relations and economic integration by which individuals and communities become less self-sufficient and more dependent on others for critical resources, including food. The classic

model was first proposed by the U.S. anthropologist Elman Service (1915–1996) in 1962 and, with minor modifications, is still widely used by anthropologists and archaeologists as a generalized descriptive framework.

Bands

Bands are the smallest and least sociopolitically complex human groups. A band usually consists of related families who camp together and collaborate closely, rarely numbering more than one hundred people and frequently closer to one dozen or two dozen. Most bands are hunters and gatherers or foragers who do not use domesticated plants or animals for food. In order to exploit the wild foods available in their environments most efficiently, many bands are nomadic, moving within a large, vaguely defined territory to take advantage of seasonal bounties and allow declining resources time to recover. This strategy is generally feasible only when population densities are very low, and bands usually have densities below one person per 2.5 square kilometers.

When so much space and so few people exist, centralized political control is difficult: people avoid socially aggressive or disagreeable people by moving elsewhere or joining another band. Consequently no formal offices of leadership exist, group decisions require consensus, and social relations are highly egalitarian; age, gender, and personal abilities are the primary determinants of social status. Some statuses—for example, those of shaman or healer, good hunter, good gatherer—are more valued, but these must be achieved by a person’s actions, and groups welcome as many talented people as they can



Bedouin tribesmen in the Middle East pose for a photo in 1914. Formed from several different kinship groups, their tribe functioned as a political organization.

attract. When coordination with other families or bands is necessary (during a communal hunt, for instance), such highly competent and respected people can become situational leaders. Their authority, however, ends when the situation does, and their attempts to dictate to others on unrelated points are not tolerated. When a more hierarchical society came into contact with such a group, the society expected to deal with a single “headman,” but—to the society’s frustration—this headman was not able to bind the whole group by its decisions and agreements.

Low levels of economic integration reinforce the difficulty of political control. Bands tend to use simple technologies by which every family can make all of the tools it needs to acquire the necessities of life. This material self-sufficiency encourages high levels of autonomy, and nomadism (as well as the lack of domestic animals to transport family possessions) discourages the accumulation of wealth. Economic relations are based almost entirely on the principle of reciprocity, the mutual exchange of food surpluses and symbolic, relationship-affirming gifts.

People often consider bands to be the original form of human society, the norm before the development of farming about 10,000 BCE. However, most bands inhabit marginally productive environments unsuitable for farming, and groups inhabiting more bountiful environments in the preagricultural past may have had more complex societies.

Tribes

In common usage the word *tribe* often refers to any “primitive” society, and so we hear of “tribal art” and “tribal warfare.” In Service’s model, however, *tribe* has a narrower, more specific meaning: a tribe consists of a number of small communities, often semi-autonomous bands or villages that consider themselves to be a collective unit. This unit usually numbers from hundreds to a few thousand people. Whereas some tribes are foragers, most practice horticulture (small-scale hoe or spade farming) or pastoralism (animal herding).

Tribes, like bands, have generally egalitarian social relations and informal leadership. The feature that

distinguishes tribes from bands is the stronger sense of connection between a tribe’s constituent communities, as opposed to the more independent bands. Although these constituent communities retain significant levels of autonomy in day-to-day affairs, they come together in mutual support and act as one unit when under threat, which includes environmental stresses such as crop failure as well as competition from outsiders. This coordination is fostered by social groups who cross-cut the allied communities, creating and maintaining the interpersonal relationships that bind members of the tribe together. These allied communities can be kinship-based clans, age-grade divisions, and/or voluntary associations such as dance and curing societies.

In some more complex tribes, powerful people known as “Big Men” can emerge as local leaders. Like headmen, Big Men have achieved status and no formal authority; their elevated status comes principally from their skill at manipulating reciprocity relationships. By accumulating surpluses of food and symbolic wealth, they are in a position to make loans and give gifts to others and demand social and political support until they have been repaid. Their positions are rarely hereditary, however, and because several people usually are competing for the status at any given time, little centralization of political control is seen.

Why Become Complex?

In bands and tribes each family meets its own basic subsistence needs. At higher population densities, by contrast, more sophisticated and costly technologies are necessary to intensify food production, and increased competition for resources increases the need for mediation and resolution of social conflicts, both internal and external. To meet these needs in a larger society, a variety of full-time specialists exists: craftspeople, secular and religious leaders, and warriors. These specialists support the larger society with their skills and services, permitting it to become more efficient, and in return are supported by the surplus production that their services make possible.

Such specialization, however, creates fundamental differences in access to resources and power within

Death is the universal salt of states; blood is the base of all things—law and war.

• Philip James Bailey (1816–1902)

a society and provides the basis for hierarchical systems of social inequality. Although a perennial debate exists regarding the balance between the beneficial and exploitative facets of elite management of society (probably an unresolvable debate because that balance is different in each society and changes through time), experts broadly recognize the correlation between complex society and social inequality. As sometimes needs to be pointed out, states with egalitarian ideologies exist, but no egalitarian states exist. In fact, these internal sociopolitical divisions are precisely what make some societies more “complex” than others.

Chieftdoms

Chieftdoms have populations ranging from several thousand to hundreds of thousands of people. Although some chieftdoms may be supported by foraging in extremely rich environments, most rely on intensive agriculture or pastoralism, which provide the reliable food surpluses needed to maintain their comparatively small number of specialists. Scholars make a distinction between simple chieftdoms, which are smaller and have a single level of elites, and paramount chieftdoms, which have a hierarchy of chiefs and “chiefs over chiefs” who build larger polities (political organizations)—at the price of greater political instability as the different chiefly lineages compete for dominance.

Chieftdoms have social ranking by which high status is normally ascribed or inherited rather than achieved. Certain families or lineages retain possession of high-status positions, which are a small number of full-time offices with formally recognized duties and powers. Political power is centralized, to a greater or lesser extent, in the hands of the ruling chief, who has the authority to make decisions for the whole group and to use coercion to bring disruptive members in line. This authority is frequently legitimated by religion, by which the chiefly lineage has access to supernatural favor and power by virtue of divine ancestors whom “commoners” lack.

Chiefs also play an important role in the economic integration of their chieftdoms through redistribution, the collection—in the form of tribute or taxes—and

management of surplus production. This surplus production supplies the chiefly lineage with its subsistence base, but it is also given back to society in the form of support for religious and craft specialists attached to the chief’s household; feasting and gift giving that legitimate his position; funding for military action or the construction of aggrandizing monuments such as temples, palaces, or tombs; and the provision of survival rations in times of need.

States

Today every human being is part of a state. States, highly centralized and highly efficient polities, can integrate populations numbering from the hundreds of thousands to more than a billion. To maintain this level of intensification and control, states have sophisticated recording systems and rely on large numbers of specialists, who often congregate in cities. These cities—the word *city* coming from the Latin word *civitas*—and literacy are two of the hallmarks of “civilization.” Only intensive agriculture can provide the food surpluses needed to feed the dense populations of cities.

Whereas chieftdoms may have only two social levels (chiefs and commoners), states have at least three: the “upper class” of ruling elites; the “middle class” of bureaucratic managers and merchants, who are often literate; and the “lower class” productive base, including most craft specialists and agricultural laborers. Such social statuses are ascribed; the possibility of social mobility distinguishes class societies, where mobility is possible, although rarely easy, from caste societies, where opportunities for changing one’s social status can be virtually nonexistent. To maintain social order in their internally diverse, often multicultural, populations, states have formal legal codes and restrict the use of coercive force to their authorized agents. By assigning responsibility for conflict resolution to officers of the state rather than leaving it in the hands of private citizens, states minimize the disruption caused by kin-driven blood feuds and faction fighting that make large paramount chieftdoms so unstable.

States use redistribution to fund the state apparatus or government, but the dominant economic



mode in society is market exchange. This exchange allows the government to divest itself of the often-onerous responsibility for the distribution of resources throughout its territory by encouraging private citizens to move local surpluses to less-favored regions in hopes of profit. States encourage market exchange by recognizing standardized units of exchange, such as an official currency, and tap into the wealth generated by this exchange through taxation.

A World of States

Given their ability to amass substantial labor and commodity surpluses, states have an enormous competitive advantage over nonstate societies. History and archaeology amply illustrate this fact and document the trend through time toward a smaller number of larger sociopolitical units. In the study of state formation a term—*secondary states*—exists for societies that become states under the influence or pressure of neighboring states. This trend is not uniformly upward, however: numerous states have collapsed as the result of political and/or environmental instability. In these cases the affected populations restructured themselves at a lower level of sociopolitical complexity, often chiefdoms or tribes, that could be supported under the new conditions.

Nevertheless, this trend, which is widely but not unanimously seen as driven by population growth, has led to a dramatic loss of nonstate societies, especially during the last few centuries. Even in the mid-1900s, ethnographers could find and study autonomous bands, tribes, and chiefdoms. Now, at the dawn of the twenty-first century, these levels of sociopolitical complexity are essentially extinct. As bands, tribes, and chiefdoms cease to exist as functional units, some scholars see this model and its hierarchical rankings as an exercise in legitimating inequality and maintaining the marginalized status of “less-complex” groups. For those people involved in the study of social complexity, however, the model continues to provide

a utilitarian framework for understanding the social, economic, and political variation among societies.

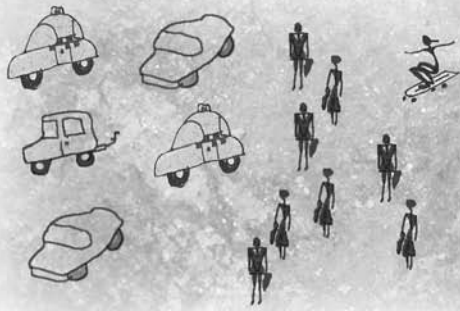
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See also Foraging Societies, Contemporary; State, The

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Barter

The practice of swapping one good or service directly for another, without the use of money as an exchange medium, is known as barter. Because the relative value of one good against another varies with need, availability, and social context, barter transactions are not inherently simple, but often involve complex social relations.

Barter may be loosely defined as transactions involving the direct exchange of goods and services. It stands in contrast to exchanges facilitated by money, which enable the acts of buying and selling to be separated. The conception and use of barter very firmly reflect the society in which it is employed. The way in which barter is understood and carried out in a Pacific society, for example, where it might be linked to social rites that govern relations with neighboring islands, is different from the use of barter in communities today in the United States, in which neighbors might exchange food preserves for help with plumbing.

Characteristics of Barter

Trying to define barter with any precision is difficult. This is because barter transactions typically involve complex social relations (though a number of anthropologists have argued to the contrary, that barter is largely devoid of social ties). The social anthropologists Caroline Humphrey and Stephen Hugh-Jones, while recognizing that any attempt to provide a general definition or model of barter usually involves the loss of the crucial social context which conditions the act of barter, nevertheless suggest a number of characteristics.



Arab women sort through goods for barter at a market in the early twentieth century. Library of Congress.

Barter results from a demand for goods or services one does not already have. A man with a pig might want, for example, a canoe. The participants in the exchange are free and equal. Money, by which the value of the goods to be bartered might be measured, is not present; there is no independent means



On market day in Argos, Greece, circa 1901, young and old barter for the necessities of life.

of judging the value of the items to be bartered. The two parties must come to an agreement that the items to be exchanged are of equal value (a process in which bargaining is usually critical). Finally, the acts of buying and selling occur simultaneously, even though the completion of the transactions (delivering the goods, performing the service) may take some time.

Barter and the Study of the Economy

The traditional view of barter in European economics may be understood through the work of two men. The Greek philosopher Aristotle (384–322 BCE) provides the earliest surviving discussion of the role of barter in the development of exchange. His account (*Politics* Book I, chapter 9) is also important for its attempt to perceive the political and social implications of what might appear to be a simple economic process. The practice of exchange, he noted, did not exist in the earliest form of association—the household, which was self-sufficient—but arose when larger social groups developed and households began sharing things. The mutual need for different goods, he

claimed, was the essential reason for these exchanges. For Aristotle the original purpose of barter was to re-establish nature's own equilibrium of self-sufficiency. But it was out of this exchange, he warned, that money-making arose—a practice which he regarded with disdain as contrary to nature, in that it served no useful purpose but simply promoted the accumulation of more wealth.

In his 1776 book *The Wealth of Nations*, Adam Smith offered a more mechanical view of the function of barter. With the emergence of a division of labor, he argued, each man only produced a small part of the total range of goods he desired. They had to resort to barter, “which must frequently have been very much clogged and embarrassed in its operations” (Smith 1998, 32) for a person could not always find someone with the goods required that wished to barter for what was on offer. As Smith (1998, 32) explained it:

One man, we shall suppose, has more of a certain commodity than he himself has occasion for, while another has less....The butcher has more meat in his shop than he himself can consume, and the brewer and the baker would each of them be willing to purchase a part of it. But they have nothing to offer in exchange, except the different productions of their respective trades, and the butcher is already provided with all the bread and beer which he has immediate occasion for. No exchange can, in this case, be made between them.

In order to alleviate the inconvenience of barter, money was invented. Barter, for both Aristotle and Smith, is then constructed as a feature of economic activity in societies at their earliest stage of development.

Barter versus Gift Exchange

Barter played an important role in many non-European societies prior to contact and integration with modern Western economic systems. Its use (and the presence of different social and economic values) is often recorded by explorers: Captain Cook, for example, traded guns for pigs in the Marquesas

That which costs little is less valued. • Miguel de Cervantes (1547–1616)

Islands on his first visit in April 1744, but found the supply of pigs quickly dried up. Having no understanding of the important role of the animal in commemorative feasts (which limited the number for sale), he assumed that he and his crew had simply oversupplied the market with guns.

Modern anthropologists recognize an important distinction between commodity exchange and gift exchange. They perceive barter as one form of commodity exchange (commodities are items that are sought after, such as animals or cars, that have both a use value and an exchange value). While the aim of commodity exchange is to obtain goods, the aim of gift exchange is to place the person (or group) that receives the gift under an obligation. The anthropologist Christopher Gregory, in a detailed study of this distinction, argued that commodity exchange establishes a relationship between the objects exchanged, while gift exchange establishes a relationship between the subjects making the exchange. Barter, as thus described, is identified as an exchange of items that are not tied to social systems (as gifts are) through the hands of more or less strangers. No form of dependence (social or political obligation) is supposedly created in these transactions. In reality the distinction is not so clear-cut. In situations where the exchange of gifts precedes the exchange of commodities, for example, a web of links ties the two types of exchange together. Indeed, simple acts of barter can often be part of a much more complex process of political, social, and economic interaction between people.

Barter Today

Barter is still a significant form of economic activity today, even in societies that use money. Despite the theories of Aristotle and Smith, barter cannot be associated merely with primitive economies. It is increasingly used by businesses: the International Reciprocal Trade Association in the United States claimed that in 2001 the barter of products between companies was worth over \$7.5 billion.

There are numerous barter clubs and associations in the United States that facilitate low-level transactions, mostly involving household goods. But not all barter is associated with strong economies. In Argentina, for example, the depressed value of the currency, the closure of banks, and mass unemployment have contributed to an increased use of barter. *The Guardian*, a British newspaper, reported on 25 April 2002 that with the shortages of cash, barter clubs emerged (sometimes located outside shopping centers) in Buenos Aires to enable people to exchange goods and services that they themselves made or supplied. Barter is thus very much a part of modern economic activity, both in strong economies and weak ones.

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Benin

Centered in what is now south-central Nigeria, the long-lived Benin Empire influenced much of Africa through military power and trade beginning in the eleventh century. Ruled by a sophisticated mixture of monarchy and oligarchy, the people of Benin enjoyed a standard of living that rivaled any of the world's great cities, until the British conquered them in 1897.

The empire of Benin was among Africa's most important, with roots going back to the eleventh century, and it lasted until its conquest by Britain in 1897. Benin, one among many large empires of the Guinea Belt (the forest region of the southern half of west Africa), was located in the south-central part of what is now Nigeria (and not be confused with the modern nation of Benin).

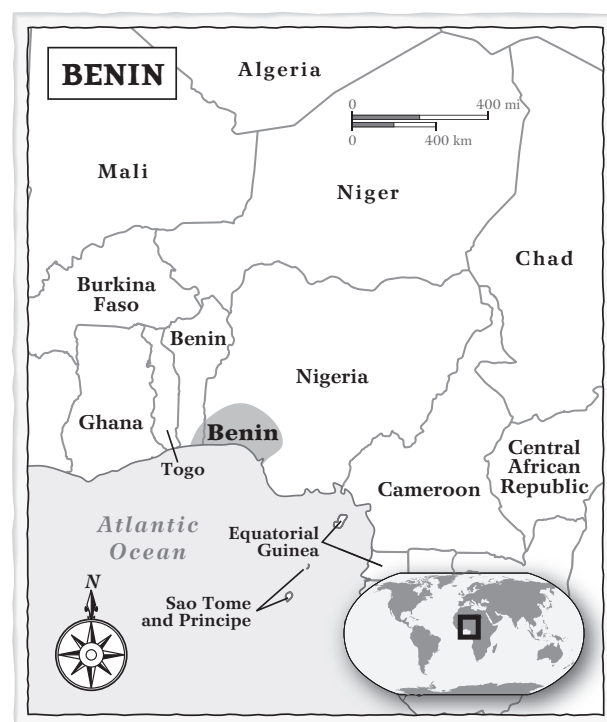
Oral tradition reveals that the people of Benin (who now refer to themselves as "Edo") migrated from the east. They likely settled first at Ile-Ife before founding Benin City around 1000 CE. Little is known of Benin's earliest history. Oral tradition records thirty-one kings from the Ogiso dynasty, of whom Owodo was the last. Owodo was so cruel and inept that he was banished. The chiefs of Benin then ruled as a council with one of their own elected as ruler.

This oligarchic (relating to government by the few) experiment collapsed when the head of the chiefs attempted to make his position hereditary. Unable to resolve the crisis the people of Benin requested that a son from the royal house of Oduduwa, the mythical ruler of Ile-Ife, rule them. Oduduwa sent his son Oranmiyan. Historians debate whether the story of

Oranmiyan represents dominance or conquest by the Yoruba people. Oranmiyan eventually left the city in frustration, and the next *oba* (the title by which the king of Benin was henceforth known) was his son, Eweka I. The *obas* of Benin claimed divine descent from Oranmiyan, and this pedigree was central to royal authority.

Political History and Transformation

Tension between the *oba* and the chiefs remained a central part of Benin's politics. Ewuare (reigned 1440–1473) was likely Benin's most famous king and



Historical illustration of the city of Benin in 1670, some two hundred years before the British made it part of their protectorate in Nigeria.



is credited with turning the kingdom into an empire. He came to power after a violent succession dispute and introduced a new level of militarism. Benin conquered many of its neighbors, including the western Igbo, some Yoruba kingdoms, and various riverine peoples of the Niger River delta. The empire was indirectly ruled; indigenous leaders were left in power so long as they paid tribute.

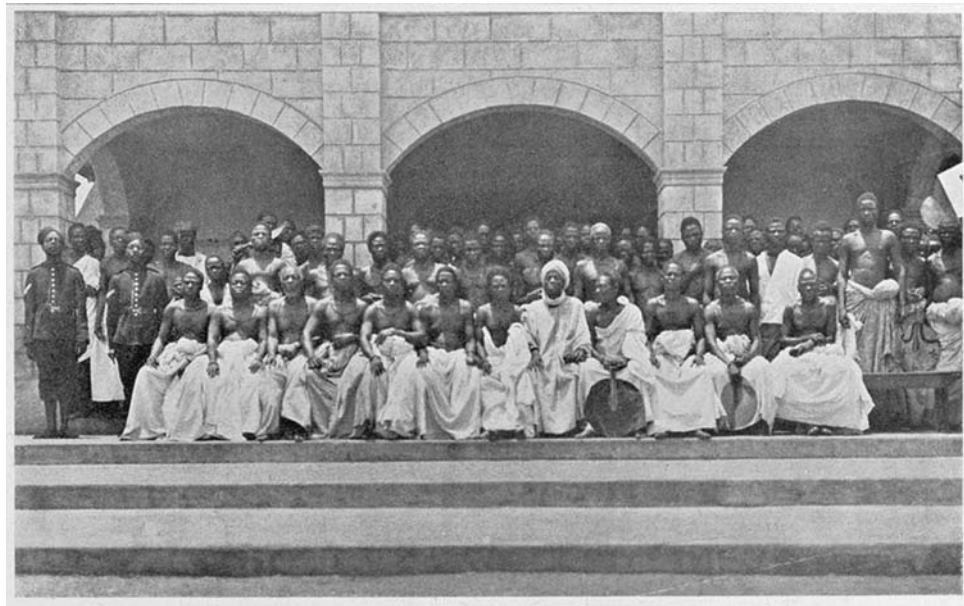
Ewuare redesigned the capital by separating the palace (*ogbe*) from the town (*ore*) by a broad avenue. The densely populated city of intersecting streets featured craftspeople, artisans, merchants, blacksmiths, and priests organized by guilds and age grades. Ewuare created two important associations: Eghaevbo n'Ogbe (Palace Chiefs) and Eghaevbo n'Ore (Town Chiefs), who were his highest advisers, although none of the offices was hereditary. In time the Town Chiefs became a permanent source of opposition to the palace, particularly its head, the Iyase, who was commander of the army. Ewuare created an elaborate annual cycle of royal ceremonies and introduced coral beads as

a symbol of royal power. A century of expansion continued after Ewuare under Ozolua, Esigie, and Orhoghua.

Royal power was supplemented by religious power from the head priests, the Osa and Osuan. The Emeru (Seven Caretakers of Sacred Brass Vessels) and Ooton (Seven Caretakers of Royal Ancestors) also lent their supernatural power to the *oba*. Like many peoples of the Guinea Belt, the people of Benin engaged in human sacrifice. Written accounts indicate that human sacrifice was restricted to royal rituals and involved a limited number of victims.

Succession disputes were common in Benin's history. The royal line had become so dissipated by the seventeenth century that extreme competition developed among rivals. As the power of the *oba* weakened, the strength of the chiefs increased. This increase culminated during the late seventeenth century in a civil war between *obas* Ewaukpe and Akenzua and Ode, who was the Iyase. The war strengthened the power of the Ezomo, a chief who controlled the village of Uzebu. The Ezomo gained the right to appoint his

Beni Chiefs Sitting Outside the New Court House, a photo taken by Sir Walter Egerton prior to 1924. New York Public Library.



own chiefs, becoming, in essence, a secondary *oba*. From this period onward royal art grew increasingly important and innovative as it became a political tool to assert royal control. Benin emerged from the civil war stable and prosperous for most of the latter half of the eighteenth century. The political history of Benin during the nineteenth century consisted of complex interplay between the *oba*, Ezomo, Eghaevbo n'Ogbe, and Eghaevbo n'Ore.

Benin and Africa

Military might largely held the Benin Empire together. In an indirectly ruled empire local leaders had a large degree of autonomy. Benin's military ensured that local leaders paid their tribute. Local rulers did sometimes break way from Benin, as the trading state of Warri did during the nineteenth century. Relations with various Yoruba kingdoms to the north were often violent, particularly with the growth of the areas of Ilorin, Oyo, and Nupe during the seventeenth and eighteenth centuries. Benin served as a nexus for trade goods from throughout the region, including textiles, beads, slaves, ivory, pepper, coffee, palm oil, woods, leather goods, horses, and salt. Via Hausaland, Benin participated in trans-Saharan trade.

Benin and the World

Benin's first contact with Europeans came during the reign of Ewuare. The first visitors were impressed with what they saw and remarked on the hospitality of the people, the safety of the streets, and the high standard of living and cleanliness. Records show that the people of Benin probably lived as well as people in any major city of the time. Europeans of the sixteenth through eighteenth centuries saw Benin as a sophisticated civilization. The Portuguese sent Catholic missionaries to Benin during the reign of Esigie, but few converts were gained.

As European interest in African slaves grew, Benin participated in the transatlantic slave trade. Although a significant source of income, slave trade never dominated Benin's economy, nor was it related to Benin's territorial expansion. Scholars traditionally argued that the slave trade lowered the value of human life in Benin, leading to an increase in the volume of human sacrifice. Current scholarship suggests that nineteenth-century European accounts of widespread human executions were exaggerated to justify conquest. Despite heavy resistance, the British captured Benin in 1897 and integrated it into the British protectorate of Nigeria. This

The King of Benin . . . has great influence among all the surrounding peoples . . . His authority stretches over many cities, towns, and villages. There is no King thereabouts who is in the possession of so many beautiful cities and towns, or is his equal. • **Olfert Dapper (1636–1689)**

conquest ended the *oba*'s political power, but the institution of the *oba* continued. The memory of the empire of Benin remains important in south-central Nigeria, and the *oba* retains great ritual and symbolic importance.

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Berlin Conference

Contrary to popular belief, the purpose of the Berlin West African Conference of 1884–1885 was not to partition control of Africa amongst the European powers. Officially, the conference merely established free trade areas on the Congo basin and set rules for new occupations of Africa’s coast, but in the periphery, representatives during the conference (not at the conference) negotiated territories.

The Berlin West African Conference of 1884–1885 was the result of a joint initiative of German chancellor Otto von Bismarck (1815–1898) and French prime minister Jules Ferry (1832–1893), undertaken in response to the Anglo-Portuguese Treaty of 26 February 1884, by which Britain recognized Portuguese sovereignty over the entire mouth of the Congo River. France and Germany were opposed to this unilateral action, and they invited Great Britain and Portugal to take part in an international conference to be held in Berlin. The conference was to deal with freedom of trade in the basin and mouth of the Congo, with freedom of navigation on the Congo and the Niger, and with defining the formalities to be observed when taking possession of new territories on the African coast. After Britain and Portugal agreed to participate, other countries were also invited to attend, beginning with those having interests in the regions concerned—the Netherlands, Belgium, Spain, and the United States. The International Congo Association, although a non-state actor with ostensibly humanitarian aims, but in reality an instrument for Belgian King Leopold II’s imperialist ambitions and a check on colonialist activities that could threaten Belgium’s neutrality, was also present. The remaining nations were invited

purely for show, or, as the letter of invitation more elegantly put it, “to ensure general agreement on the conference resolutions.” These countries were Austria-Hungary, Sweden-Norway, Denmark, Italy, Turkey, and Russia. The invitations went out in October and the conference opened on 15 November 1884.

The Conference

Already during the opening session the British representative, Edward Malet, made it clear that Britain considered the Niger as its exclusive sphere of influence and therefore refused to discuss it on a par with the Congo. With Britain indisputably the paramount power on the Niger, the others agreed, and thus in actual practice the Berlin West African Conference became the Berlin Congo Conference, the name by which it is now generally known. Two important points remained to be dealt with: determining the size of that part of the Congo area where free trade would be the rule, and the formalities for new occupations on the African coasts.

The general feeling of the conference was that the free-trade area should be as large as possible. The result was that two free-trade zones were approved. The first was defined as “the basin of the Congo and its tributaries” and stretched from the Atlantic to the Great Lakes in the Great Rift Valley of east central Africa. On the coast the northern boundary was fixed at 2°30′2″ south, while the mouth of the Loge River was adopted as the southern limit. This coastal outlet was therefore fairly narrow, but immediately behind it the region fanned out broadly to the north as well as to the south. To the east of it lay the other free-trade area, termed the eastern maritime zone, which stretched from the Great Lakes to the Indian Ocean.



Its northern coastal boundary was fixed at 5° north and its southern boundary at the mouth of the Zambezi River. The two free-trade territories, the Congo basin and the eastern zone, were jointly referred to as the conventional Congo basin.

The last item on the agenda was the formalities for new occupations. This point is the most important historically, because it has given root to the theory that at the Berlin Conference Africa was divided up by the European powers. This is not true. As the invitation letter indicated, the conference was only to deal with new occupations, not already existing ones, and only with the African coasts, not with the interior. These restrictions are quite understandable. About the interior Europeans and Americans knew next to nothing, and in order to deal with the already existing claims, they would have had to make an inventory of all the regions concerned and all the powers involved. When one delegate suggested doing that, the French ambassador observed that that would be “tantamount to a partition of Africa,” which was not within the competence of the conference. Therefore it was decided, that the conference should stick to the text of the letter of invitation and only deal with *new* occupations on the African *coasts*. Therefore in the General Act of the Conference it was declared that any signatory of the Act that was taking possession of a new coastal region or setting up a protectorate over it had to notify the other signatories of its actions and to exercise a measure of effective authority. In light of the fact that scarcely any coastal parts remained unoccupied, however, in practice this proviso meant virtually nothing.

Implications of the Berlin Conference

The Berlin Conference has often been described as the conference at which the Europeans divided up Africa. The first president of Ghana, Kwame Nkrumah, for example, wrote, “The original carve-up of Africa was arranged at the Berlin Conference.” Many textbooks, too, have expressed this mistaken point of view. Africa was *not* divided at Berlin, and the subject was not even on the agenda; indeed, the idea of a partition of Africa was explicitly rejected by the conference.

There was, however, some partitioning going on in Berlin, not at the conference but in the corridors. That was an altogether different business, one not of principles and international law but of negotiating and horse-trading. That was not a matter of conference diplomacy, meaning multilateral diplomacy, but of bilateral diplomacy, and though it took place *during* the conference, it did not take place *at* the conference. The Congo Free State founded by Leopold II of Belgium, for example, was seeking recognition and acceptance of its borders. Some of that business had already been done before the conference opened, but the most important bilateral treaties between the Free State and the Western powers were signed in Berlin. The result of this was the creation of one of the biggest European colonies in Africa, the Congo Free State, which would later become the Belgian Congo.

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See also Africa, Colonial

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Big History

The study of big history places the history of humanity and Earth in the largest possible context, that of the universe. In 1991, David Christian coined the term *big history* in an article he wrote for the *Journal of World History*, although the first courses utilizing the concept of big history were taught in the late 1980s.

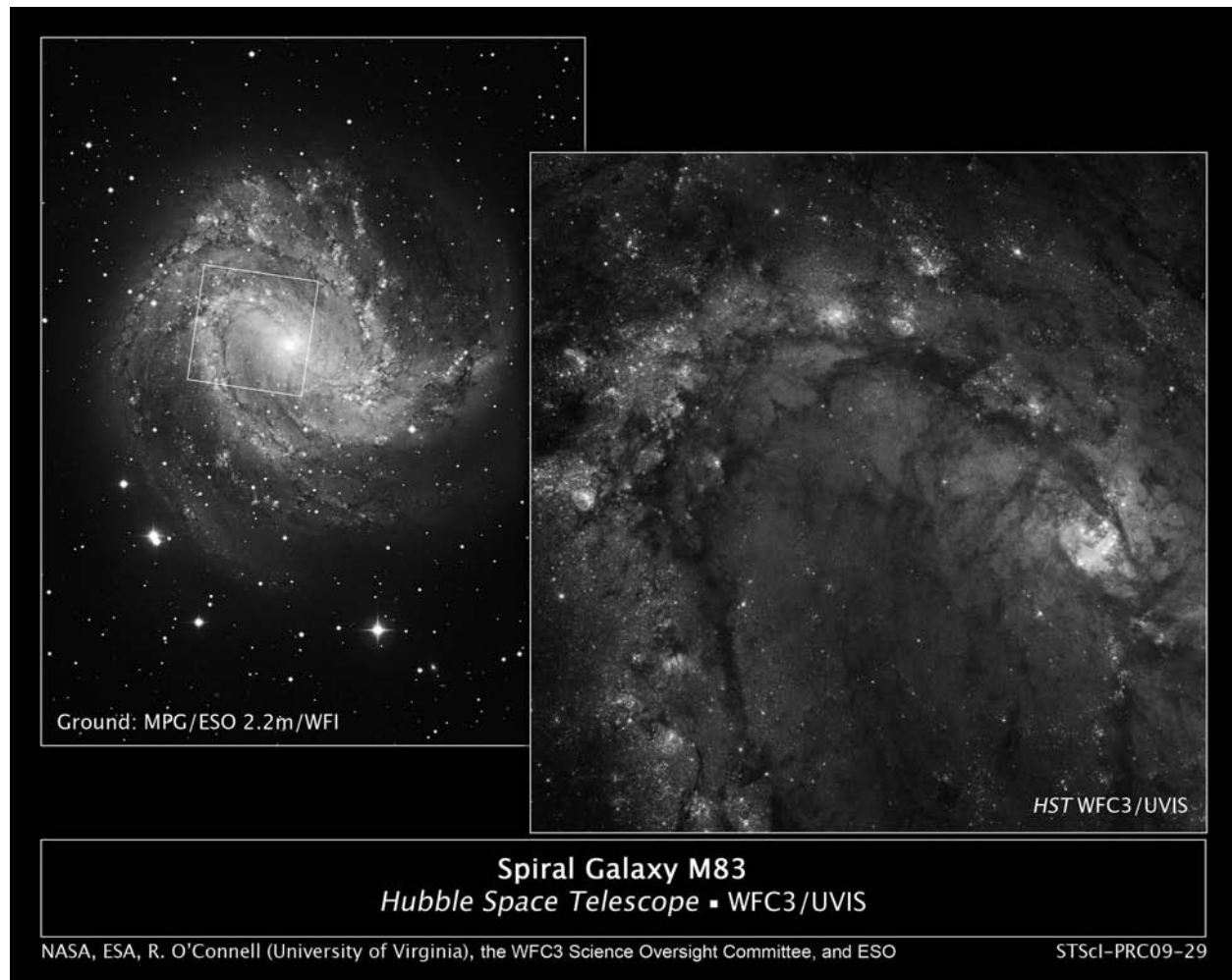
Describing the content of a typical course in big history may convey something of big history's scope and scale. Such courses normally begin with the origins of the universe and the first stars and galaxies, surveying some of the central ideas of modern cosmology and astronomy. The creation of new chemical elements in dying stars and supernovae allowed the creation of more chemically complex entities such as planets, and leads naturally to the earth sciences and biology. Big history courses survey the origin and history of our Earth and the origin and evolution of life on Earth—the only planet so far where we know for certain that life exists. The evolution of our own species, *Homo sapiens*, leads naturally to a survey of human history. Within this large story the distinctiveness of human history stands out, for we can see the large patterns that are hidden at the scales of traditional history teaching. We see how our species began to display a unique capacity for sustained adaptation and innovation, which allowed its members to extract more and more resources from the biosphere, to begin supporting larger populations, and eventually to create more complex human communities, which generated new adaptations even more rapidly in a complex but powerful feedback cycle. This accelerating process of adaptation through cultural change is easiest to see during the last 10,000 years since the

appearance of agriculture, but it was already apparent in the Paleolithic (foraging) era in the technological innovations that allowed our ancestors to settle all the world's continents apart from Antarctica. Today we can see that our remarkable propensity for sustained and accelerating innovation has its dangers. So courses in big history inevitably raise large questions about the future of our species and its relationship with the biosphere, as well as about the future of our Earth and of the universe as a whole.

In the late 1980s the U.S. astrophysicist Eric Chaisson taught one of the first courses in big history; he was soon followed by David Christian in Australia and John Mears in the United States. (Christian actually coined the term itself in a 1991 article for the *Journal of World History*.) Today such courses are still rare, though their number has increased. Courses in big history can now be found in Russia and the Netherlands as well as in Egypt, Australia, India, and Korea; analogous courses have also been taught in geology departments (by Walter Alvarez, for example). Their growth has been driven, at least in part, by the thirst of students for a more unified vision of the past and of scholarship in general, and for approaches that help overcome the extreme intellectual fragmentation of modern education and scholarship.

Universal History: An Ancient Tradition

Today, big history may seem anomalous. Yet the questions it pursues are ancient. Most societies we know of have tried to construct coherent and unified accounts of the entire past using the best information available to them, in order to explain the existence and



Spiral Galaxy M83 as photographed by the Hubble Space Telescope. Looking at the formation of other galaxies helps us understand the creation of our own. National Aeronautics and Space Administration.

nature of the universe we inhabit and the communities of which we are members. This is what traditional creation myths did. All literate cultures have also produced analogous accounts of origins at multiple scales. Christian cosmology described a universe approximately 5,000 to 6,000 years old, with the Earth at its center. That story provided the basic framework for historical thinking in the Christian world for 1,500 years, and some still think within the same framework today. Even after the Scientific Revolution had undermined the credibility of Christian cosmology, historical thinkers continued to construct universal maps of space and time, although now they did so within more secular traditions of thought whose basic

parameters were provided by Newtonian science. Universal histories were constructed during the Enlightenment and during the nineteenth century. This was the tradition within which both Georg Wilhelm Friedrich Hegel and Karl Marx wrote. Even Leopold von Ranke, who is often thought of as the pioneer of modern traditions of detailed, empirical historical research, insisted that the ultimate goal of historical scholarship should be the creation of universal histories, and in his final years he attempted to write such a history himself.

Yet today this ancient tradition of writing universal history is barely remembered. It vanished, suddenly and decisively, at the end of the nineteenth



Within fifty years after the 1906–1907 excavations of the Iron Age burial grounds pictured here at Smörkullen (Alvastra, Östergötland, Sweden), radiometric-dating techniques began to revolutionize our understanding of the past.

century. Why it vanished remains unclear. Nationalistic perspectives on the past discouraged the search for commonalities between societies and encouraged geographical and cultural specialization. The growing prestige of the natural sciences raised standards of rigor and precision in all scholarly disciplines and showed how flimsy were the empirical foundations of even the most interesting attempts at universal history. Eventually historians turned away from large, speculative histories toward detailed empirical research, often modeling their scholarship on the techniques of archival research associated with the work of Ranke.

Many historians may have hoped that sustained empirical research would spontaneously generate new, more “scientific” accounts of the past at large scales. After all, something like that seemed to have occurred in biology, where Charles Darwin provided a wonderful model of how sharply focused empirical research might yield grand unifying theories. But in history no grand unifying story emerged, and the very

idea of universal history began to seem Utopian. H. G. Wells attempted a universal history in the 1920s, but his work was ignored by professional historians, and probably with good reason. Like the great universal histories of the nineteenth century, Wells’s *Outline of History* contained too much speculation and too little hard information, particularly about the deep past. Eventually many historians began to think there was something fundamentally different about history. R. G. Collingwood argued, for example, that history was different from the natural sciences because it dealt with an unpredictable world of conscious actions rather than merely with events. “The events of nature are mere events, not the acts of agents whose thought the scientist [i.e., historian] endeavors to trace” (Collingwood 1994, 214). The historian’s goal, therefore, was not to seek general laws, but to “penetrate” the thoughts that motivated past actions. That was why historians seemed to occupy a different epistemological universe from natural scientists.

In the 1960s, Arnold Toynbee, one of the few historians who regretted the passing of universal history, complained in an interview with the writer Ved Mehta (1962, 143) that “the microscope historians . . . whether they admitted it or not, had sacrificed all generalizations for patchwork, relative knowledge, and they thought of human experience as incomprehensible chaos.” But he also believed the days of microscope history were numbered: “in the perspective of historiography, they were in the minority, and Toynbee, in company with St. Augustine—he felt most akin to him—Polybius, Roger Bacon, and Ibn Khaldun, was in the majority” (Mehta 1962, 143).

Fifty years later, Toynbee’s remarks look more prescient, as universal history makes a comeback in the new form of big history. Why are some historians returning to the idea of universal history? The main reason is that we can now study universal history with a rigor and precision that was unthinkable in the nineteenth century. A century of detailed research, not just in history, but also in neighboring disciplines such as archaeology, paleontology, linguistics, and genetics, has revolutionized our understanding of

Observe constantly that all things take place by change, and accustom thyself to consider that the nature of the Universe loves nothing so much as to change the things which are, and to make new things like them. • **Marcus Aurelius (121–180 CE)**

the human past, extending it both in time and space. Meanwhile, the natural sciences look more historical than they did a century ago. Astronomy became a historical science with the rise of big bang cosmology; the theory of plate tectonics re-affirmed the historical nature of the earth sciences; and the discovery of DNA clinched the evolutionary nature of biology. One of the most fundamental changes has been the appearance of new dating techniques that have revolutionized our understanding of the past at all scales. Sixty years ago, absolute dates could be confidently assigned to past events only if there existed written records. So no reliable historical timeline could extend back more than a few millennia, and all earlier periods were lost in a sort of chronological haze. In the 1950s, Willard Libby established the first reliable techniques of radiometric dating, based on the regular radioactive breakdown of carbon-14. As radiometric methods have been improved and applied more widely, and eventually joined by other chronometric techniques, we find ourselves able to construct rigorous timelines that extend back not just to the origins of our species (c. 100,000 years ago) or even of our Earth (c. 4.5 billion years ago) but to the very beginnings of the universe, which we can now date, with remarkable precision, to about 13.7 billion years ago. This dazzling “chronometric revolution” has provided the chronological framework for a new, scientific account of the past at all scales (Christian 2008a and 2009).

Some Themes in Big History

Can there be any thematic coherence in a discipline that spans so many different spatial and chronological scales, and such a diversity of modern scholarly disciplines? It is already apparent that there is a coherent story of origins to be told within big history as it surveys the origins of the universe, the Earth, of life on Earth and of humanity. But unifying themes are also emerging. All the entities that stand out in the story of big history are complex: they are composite entities, formed according to precisely specified patterns, and they display novel “emergent properties.”

They are also characterized by significant energy flows that sustain their complexity. So it is no accident that complex entities such as the biosphere can be found on the surface of bodies close enough to a star to benefit from the huge energy flows that stars pump into the cold space surrounding them. As the astrophysicist Eric Chaisson has pointed out, the density of these energy flows may allow us, loosely, to order complex entities by their degrees of complexity. Such calculations suggest that living organisms may be significantly more complex than stars or planets, and modern human society may be one of the most complex entities we know of. These considerations suggest that the slow emergence of new forms of complexity can provide a common theme and a common research agenda, encouraging scholars in many different disciplines to explore similar questions about complexity itself, and the different forms it takes within our universe.

The theme of rising complexity also suggests that human history may be peculiarly interesting. If living organisms are distinguished by their remarkable capacity to adapt to changing environments, our own species is distinguished by the fact that it can adapt continuously. While most species (including highly intelligent species such as the great apes), are limited by their genetic endowments, humans can adapt continuously because the remarkable efficiency of human speech allows us to exchange learned information in great volume and with great precision. As a result, learned information can accumulate culturally, and that is why our species alone seems to continually develop new patterns of behavior and new ways of extracting resources from its environment. This remarkable ability, which we can call “collective learning,” shapes the evolution of human societies as powerfully as natural selection shapes the evolution of biological species, but it operates much faster. And eventually it explains the increasing size and complexity of human societies. Our ability to learn collectively is the glory of our remarkable species, but also potentially its downfall, for we have acquired such power over our world that we are in danger of laying it to waste.



Big History and World History

There is a natural affinity between world history and big history. Big history considers the past at such huge scales that it can attempt, as more conventional types of history cannot, to understand the trajectory of human history as a whole. Because of its willingness to draw on information from multiple disciplines, it is not confined, as traditional “Rankean” forms of scholarship were, to the several millennia since the appearance of writing. It therefore provides a natural framework for the type of world history that will be needed increasingly in a world facing challenges (from the threat of nuclear war to that of ecological collapse) that cannot be tackled nation by nation. Big history provides a natural framework for the construction of a modern history of humanity.

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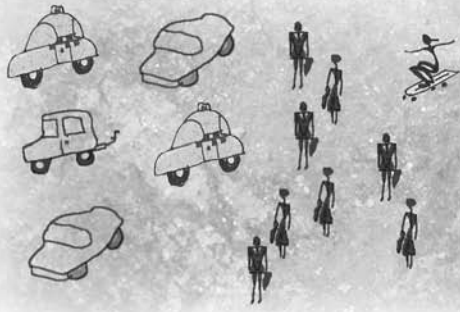
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See also Cosmology; Universe, Origins of; World History, Writing of

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Biological Exchanges

With few exceptions, the spread of plants, animals, and diseases was limited to geographically bound regions for much of the Earth's history. Humans facilitated biological exchange, intentionally and accidentally carrying species across natural borders. As opportunities for human travel increased, so did the opportunities for biological exchange, often with dramatic consequences.

During most of the history of life on Earth, geographic barriers such as oceans and mountain ranges divided the planet and inhibited migrations of most kinds. Only birds, bats, flying insects, and good swimmers consistently bucked the trend. A few other species did so occasionally, thanks to sea-level changes and land bridges or to chance voyages on driftwood. However, for most species most of the time, biological evolution took place in separate biogeographical provinces.

Intracontinental Biological Exchange

This long phase of separation ended when human beings began their long-distance migrations. Deep in prehistory hominids (erect bipedal primate mammals) walked throughout Africa and Eurasia, occasionally bringing a plant, seed, insect, microbe, or rodent to a place it would not have reached on its own. With plant and animal domestication ten to twelve thousand years ago, people began to transport such things on purpose and more frequently. Most of the plants and animals susceptible to domestication lived in Eurasia, and those sensitive to

climate or day length (several flowering plants take their cues to bloom from day length) spread most easily along the east-west axis of that continent. The sets of domesticated plants and animals on which Eurasian and North African agriculture and herding are based spread almost instantaneously by the standards of the past, although in fact the spread took a few millennia. This process of spreading no doubt proved highly disruptive biologically as local biogeographic provinces were invaded by alien creatures spread by humanity. It also proved highly disruptive historically, obliterating peoples who did not adapt to the changing biogeography, the changing disease regimes, and the changing political situations brought on by the spread of farmers, herders, and eventually states. Out of this turmoil of Afro-Eurasian biological exchange emerged the great ancient civilizations from China to the Mediterranean. They all based their societies on intersecting but not identical sets of plants and animals.

Biological homogenization within Afro-Eurasia had its limits. The links between northern Africa, say, and eastern Asia before 500 BCE were slender. Varying topography and climate also checked the spread of species. The process presumably accelerated when interregional contacts flourished, for example, when empires created favorable conditions for the movement of goods and people. The era of the Han dynasty (206 BCE–220 CE) in China and the Roman Empire, for example, when the trans-Asian trade route called the Silk Roads was a well-beaten path, unleashed a small flood of biological exchanges. The Mediterranean acquired cherries at this time, and possibly smallpox and measles, too; sorghum made its way from east Africa to India to China, and grapes,

camels, and donkeys arrived in China from southwest Asia and northern Africa.

Within Eurasian history two more moments of heightened biological exchange occurred. The next moment occurred during the early Tang dynasty (618–907 CE) in China. The Tang rulers came from various ethnic and cultural traditions and for a century and a half showed keen interest in things foreign: trade, technology, culture (e.g., Buddhism), and plants and animals. The court imported exotica: curious creatures, aromatic plants, ornamental flowers. Much of this exotica was inconsequential in social and economic terms, but some of it, such as cotton (imported from India), was not. The Tang were culturally receptive to strange plants and animals, but political conditions helped too: their political power on the western frontier, and the geopolitical situation generally before 750, promoted the trade, travel, and transport that make biological exchange likely.

For roughly a century and a half (600–750 CE) the numerous political organizations of Central Asia were frequently consolidated into only a few, simplifying travel by lowering protection costs. A handful of large empires held sway throughout Central Asia, making the connections between China, India, and Persia (modern-day Iran) safer than usual. These geopolitical arrangements fell apart after 751, when Muslims defeated Tang armies, and after 755, when rebellion shook the Tang dynasty to its foundations. Thereafter, both the stability of the geopolitical situation and the receptivity of the Tang to things foreign changed, waning more often than waxing, and the opportunities for biological exchange grew scarcer.

Another moment of heightened biological exchange within Eurasia occurred with the Pax Mongolica (Mongol Peace) of the thirteenth and fourteenth centuries. By this time most of the feasible exchanges of plants and animals had already taken place. However, the heightened transport across the desert-steppe corridor of Central Asia may have brought carrots and a species of lemon to China and a form of millet to Persia. Quite possibly this transport also allowed the quick diffusion from Central Asia of the bacillus that causes bubonic plague, provoking the famous Black

Death, the worst bout of epidemics in the recorded history of western Eurasia and northern Africa. Plague may also have afflicted China during these centuries, although the evidence is ambiguous.

Although this process of Eurasian (and North African) biological exchange never truly came to an end, it slowed whenever political conditions weakened interregional contacts. It also slowed in general after around 200 CE, with the erosion of two eras of peace—the Pax Romana (Roman Peace) and Pax Sinica (Chinese Peace), which had encouraged long-distance travel and trade within Eurasia. By that time sugarcane had taken root in India, spreading from its New Guinea home. Wheat had spread widely throughout most of its potential range, as had cattle, pigs, horses, sheep, and goats. Less and less was left to do even when political and economic conditions encouraged biological exchange.

Meanwhile on other continents, similar, if smaller-scale, processes of biological exchange and homogenization were in train. In the Americas maize spread both north and south from its Mesoamerican home (the region of southern North America that was occupied during pre-Columbian times by peoples with shared cultural features), slowed, it seems, by difficulties in adapting to different day lengths at different latitudes. In Africa the Bantu migrations of two thousand years ago probably diffused several crops throughout eastern and southern Africa and possibly brought infectious diseases that ravaged the indigenous, previously isolated, populations of southern Africa. These events in Africa and the Americas, too, must have been biologically and politically tumultuous, although the evidence is sparse.

In biological terms the process of human-promoted biological exchange selected for certain kinds of species, those that co-existed easily with human activity: domesticates, commensals (organisms that obtain food or other benefits from another without damaging or benefiting it), and plants that thrive on disturbed ground, most of which we usually call “weeds.” These species prospered under the new regimes of expanded human migration and interaction; for them, history had taken a favorable turn. Indeed, humanity was



in a sense working for them, spreading their genetic footprints far and wide within the continents and into the future.

Biological Exchange and Biological Invasion

Intercontinental biological exchange also has a long pedigree. The first people to migrate to Australia may have accidentally brought some species with them forty thousand to sixty thousand years ago. About thirty-five hundred years ago, later migrants to Australia purposely brought the dingo (a large dog), the first domesticate in Australian history. The dingo quickly spread to all Aboriginal groups outside of isolated Tasmania and also formed feral packs. It proved an effective hunting dog and led to the extinction of some indigenous mammals. The dog (not the dingo) was also the first domesticated animal in the Americas, brought across the Siberian-Alaskan land bridge with some of the first settlers during the last Ice Age. Here dogs probably played a significant role in reducing the populations of large mammals, many of which became extinct soon after humans arrived in North and South America. Initial human settlement of unpopulated islands also wrought major ecological changes throughout the southwest Pacific and Polynesia, including numerous extinctions, from about four thousand years ago until the colonization of New Zealand roughly seven hundred or one thousand years ago.

All of these instances were invasions of “naive” lands—continents and islands that had no prior exposure to humanity and its fellow travelers or to the intensified fire regimes that human presence normally brought. This fact helps to explain the dramatic effects, particularly the rash of extinctions that followed upon human settlement of Australia, New Zealand, and the Americas.

Eventually people began to transport animals, plants, and pathogens from one human community to another across the seas. In many cases the only evidence for such transfers is the existence of the imported species. The sweet potato, a native of South

America, somehow arrived in central Polynesia by 1000 CE and subsequently spread widely throughout Oceania (lands of the central and southern Pacific). It is a delicate crop and could not survive a driftwood voyage: no one doubts that people transported it, although no one knows just when, how, or even who. It eventually became a staple food in the western Pacific, highland New Guinea, and to a lesser extent the eastern Asian archipelagoes and mainland.

A second mysterious transoceanic crop transfer took place across the Indian Ocean some time before 500 CE. Somebody brought bananas, Asian yams, and taro to eastern Africa. These crops had much to recommend them because they do well in moist conditions, whereas the millets and sorghum that Bantu expansion brought into central and southeastern Africa were adapted to dry conditions. Plantains, of which bananas are one variety, had existed in the wild from India to New Guinea. Linguistic and genetic evidence suggests they arrived on the east African coast as early as three thousand years ago and reached the forest zone to the west of Africa’s Great Lakes around two thousand years ago, just about the time of the Bantu migrations. Quite possibly the success of Bantu speakers, often attributed to their use of iron, owed something to their successful adoption of these exotic crops. As relative newcomers to eastern and southern Africa, they had less invested in prevailing ecological patterns and fewer disincentives to experiment. Bananas, taro, and yams were probably introduced to eastern Africa more than once and almost surely were brought again in the settlement of Madagascar that took place not long before 500 CE. These Asian crops assisted in the epic (but unrecorded) colonization of central Africa’s moist tropical forests by farmers, as well as in the settlement of Madagascar.

Several other significant intercontinental biological transfers took place before 1400 CE, mainly between Africa and Asia, a route that posed minimal obstacles to sailors. Africa’s pearl millet, derived from a western African savanna grass, is the world’s sixth-most-important cereal today. It was introduced into India three thousand years ago and today accounts for about 10 percent of India’s cereal acreage. East

African sorghum entered India at about the same time and eventually became India's second-most-important grain after rice. Sorghum stalks were also useful as fodder for India's cattle. Finger millet, also from Africa, arrived in India only around one thousand years ago. It became the staple in Himalayan foothill communities and in far southern India. The transfer of African crops to south Asia mainly provided India with drought-resistant dryland crops, opening new areas to settlement and providing a more reliable harvest where water supplies were uncertain. These examples suggest a lively world of crop exchange—and probably weeds, diseases, and animals, too—around the Indian Ocean rim from about three thousand to fifteen hundred years ago. The regular monsoon winds of the Indian Ocean helped make this region of the world precocious in its maritime development and hence biological exchange.

Whereas south Asia received new crops from Africa, it sent new crops to the Middle East and the Mediterranean. Facilitated by the relative peace supervised by the Abbasid dynasty (749/750–1258), between the tenth and thirteenth centuries Arab trading networks brought sugar, cotton, rice, and citrus fruits from India to Egypt and the Mediterranean. These plants, and the cultivation techniques that came with them, worked a small revolution on the hot and often malarial coastlands of northern Africa, Anatolia in Turkey, and southern Europe. They caused many coastal plains to be brought under cultivation on a regular basis, often for the first time since the Roman Empire. Sugar and cotton could flourish with unskilled and unmotivated slave labor; their introduction may have quickened the slave raiding that kept Mediterranean and Black Sea populations anxious for centuries. Keeping an army of laborers at work on deadly malarial coasts—in the Levant (countries bordering on the eastern Mediterranean), Egypt, Cyprus, Crete, Sicily, Tunisia, and Andalusia in Spain, to mention a few centers of sugar production—required constant topping up from poorly defended peasantries. This quest took slave merchants and raiders to the Black Sea coasts but also across the Sahara Desert and along Africa's

Atlantic coast. Saadian Morocco, a state originally based on plantations in the Sous and Draa River valleys, brought sugar and African slaves together in a profitable mix that would soon be transplanted to Atlantic islands such as the Canaries and Madeira and then to the Americas.

A second avenue of exchange linked the Mediterranean basin to western Africa. Although this exchange was not genuinely intercontinental, the Sahara Desert for several millennia functioned somewhat like a sea, as the Arabic term for “shore” (*sahel*) for the western African desert edge implies. One thousand years before Christopher Columbus crossed the Atlantic, some unknown soul crossed the Sahara, reuniting the Mediterranean and the *sahel*, which the increasingly arid Sahara had divided since about 3000 BCE. Trans-Saharan trade developed in salt, slaves, and gold. However, this reunification no doubt included a biological dimension. Large horses seem to have made their debut in west Africa via trans-Saharan trade. Linguistic evidence suggests they came from the Maghreb region in the north. Horses eventually became a decisive element in a military revolution in the *sahel*, creating a mounted aristocracy who by the fourteenth century built imperial states. The Jolof, Mali, and Songhai empires of west Africa depended on horse cavalry, which underwrote their military power and, via slave raiding, their economies. When ecological conditions permitted, these empires bred their own warhorses, and when conditions did not permit, the empires had to import them, usually from Morocco. In any case, the social, economic, and political history of west Africa took a new direction with the arrival of large horses.

These events show that long before the great age of oceanic navigation, the links of trade and colonization in the Pacific Ocean, in the Indian Ocean, and across the Sahara Desert brought biological exchanges that powerfully influenced the course of history. The further exchanges attendant upon the voyages of Columbus, the Portuguese navigator Ferdinand Magellan, the British sea captain James Cook, and others extended this process, wrenchingly, to lands formerly quite separate in biological (as in other) terms.

Biological Globalization

After 1400 CE mariners linked almost every nook and cranny of the humanly inhabitable Earth into a biologically interactive unit. The world's seas and deserts were no longer isolated biogeographical provinces. The world became one without biological borders as plants, animals and diseases migrated wherever ecological conditions permitted their spread, although how soon and how thoroughly they did so often depended on patterns of trade, production, and politics.

Columbus inaugurated regular exchanges across the Atlantic whereby the Americas acquired a large set of new plants and animals as well as devastating diseases that severely depopulated the Americas between 1500 and 1650. Simultaneously, Africa and Eurasia acquired some useful crops from the Americas, most notably potatoes, maize, and cassava (manioc). Ecosystems and societies in the Americas were remade with new biologies and new cultures. The same thing was true, however, even if less catastrophically, in Africa and Eurasia. The new food crops fed population growth in Europe and China and possibly in Africa, too (no firm evidence exists). Maize and potatoes changed agriculture in Europe, as did maize and sweet potatoes in China, allowing more intensive production and allowing lands not suited to wheat, barley, rye, or rice to come into production. In Africa maize, cassava, and peanuts became important crops. Today 200 million Africans rely on cassava as their staple food. Many of the rest, mainly in the south and east, rely on maize.

These modern biological exchanges had political meanings and contexts. European imperialism, in the Americas, Australia, and New Zealand, simultaneously promoted, and was promoted by, the spread of European (or more usually Eurasian) animals, plants, and diseases. Europeans brought a biota (the flora and fauna of a region) that worked to favor the spread of European settlers, European power, and Eurasian species and thereby to create what Alfred Crosby, the foremost historian of these processes, called "neo-Europes"—including Australia, New Zealand, most

of North America, southern Brazil, Uruguay, and Argentina.

Beyond the neo-Europes, in the Americas something of a neo-Africa emerged. More than 10 million Africans arrived in the Americas in slave ships. In those same ships came yellow fever and malaria, which profoundly influenced settlement patterns in the Americas. The ships also brought African rice from the west coast, which became the foundation of the coastal economy in South Carolina and Georgia during the eighteenth century and was important in Suriname in South America as well. Other African crops came, too: okra, sesame, and (although not in slave ships) coffee. African biological impact on the Americas did not cease with the end of the slave trade. Much later African honeybees imported into Brazil crossbred to create an "Africanized" bee that since the 1950s has colonized much of the Americas.

The age of sail brought the continents together as never before. But sailing ships did not prove hospitable carriers to every form of life. They filtered out a few, those that could not for one reason or another survive a long journey or that required conditions that sailing ships could not provide. The age of steam and then the age of air travel broke down yet further barriers to biological exchange, adding new creatures to the roster of alien intruders and accelerating the dispersal of old and new migratory species alike.

The advent of iron ships toward the end of the nineteenth century, for example, opened a new era in biological exchange involving species of the world's harbors and estuaries. After the 1880s iron ships began to carry water as ballast. Soon special water ballast tanks became standard, and thus, for example, a ship from Yokohama, Japan, bound for Vancouver, Canada, would suck up a tankful of water and, more than likely, a few marine species from Japanese shores, cross the wide Pacific, then release its Japanese water and sea creatures in Puget Sound before taking on a Canadian cargo. During the 1930s Japanese clams hitched such a ride and upon arrival began to colonize the seabeds of Puget Sound, creating a multimillion-dollar clam fishery in British Columbia and Washington State. A jellyfish that devastated



Black Sea fisheries came from the East Coast of the United States in about 1980. The zebra mussel, a Black and Caspian seas native, colonized the North American Great Lakes and river system from a beachhead established near Detroit in 1985 or 1986. It has cost the United States and Canada billions of dollars by blocking water intakes on city water systems, factories, and nuclear power plants.

A more recent invader of the North American Great Lakes is the fishhook flea, a crustacean that is a native of Caspian and Black sea waters. It first appeared in Lake Ontario in 1998 and is now in all the Great Lakes and New York's Finger Lakes, menacing sport and commercial fisheries and disrupting the lakes' food web. The failures of Soviet agriculture and the expanded grain trade from North America during the 1970s and 1980s created a new pattern of ship traffic that quickly brought disruptive biological exchanges. Nowadays thirty-five thousand ocean-going ships and three thousand marine species are in transit at any given time, linking the world's harbor and estuarine ecosystems as never before. The exchanges via ballast water are but a single variety of the swirl of biological exchange going on in modern times. Transport, travel, and trade take place on such a scale now and with such rapidity that a vast homogenization of the planet's flora and fauna is under way.

Perspectives

From the Olympian height that allows a view of all life on Earth over its entire history, the last ten thousand years appear as an instantaneous homogenization of ecosystems, a new era in Earth history. Humankind has connected formerly distinct spheres of life through trade and travel, reprising in the blink of an eye what previously happened through continental drift. Some 300 to 250 million years ago the world's continents fused to form a single supercontinent, called "Pangaea." Creatures formerly kept apart from one another now rubbed shoulders. Large numbers of them became extinct by about 220 million years ago, perhaps in part on account of this new familiarity (although other theories exist). Reptiles inherited the Earth,

spreading throughout the globe. During the last few millennia the human species has once again fused the continents, and to some extent the seas, and is probably provoking (through this and other means) the sixth great extinction spasm in the history of Earth.

From a less Olympian height, other vistas present themselves. The process of biological exchange is much influenced by the technology of transportation. The invention of ships, of ocean-going ships, of ballast tanks, of railroads and airplanes all led to changes and surges in the pattern of biological exchange. Transport technology provides one rhythm. Another rhythm is political.

Some states and societies showed great eagerness to import exotic species. Monarchs of ancient Egypt and Mesopotamia buttressed their prestige by maintaining gardens and zoos filled with exotic plants and animals. The Tang dynasty, as noted, showed a similar enthusiasm. Thomas Jefferson tried his best to establish rice and silkworms in Virginia. Later, the U.S. government employed an army of plant prospectors, who scoured the globe for potentially useful species and brought tens of thousands to the United States. During the nineteenth century Australia and New Zealand featured "acclimatization societies," which imported species that met with their approval (usually from Britain). Nowadays the United States, Australia, New Zealand, and many other countries spend vast sums trying to prevent the importation of unwanted species, hoping to forestall biological invasions rather than foment them. Altogether, biological invasions now cost the United States more than all other natural hazards combined, including floods, hurricanes, tornadoes, earthquakes, and so forth.

Beyond the disposition that any society might have toward exotic species, the changing nature of geopolitics also affected biological exchange. Trade and travel—and presumably biological exchange—expanded in times of peace and contracted in times of war, brigandage, and piracy. Probably eras of imperial unification provided the best political environment for biological exchange, when a single power enforced a general peace. Anarchic systems of competing states probably

checked biological exchange by slowing trade and travel, notwithstanding the effects of mobile armies and navies. Furthermore, imperialism also seems to have inspired, as well as eased, the process of collection: botanical gardens and the like. Kew Gardens outside of London proved a crucial link in transferring rubber seeds from Brazil to Malaya at the end of the nineteenth century, starting a new plantation economy in southeast Asia. The swings between moments of consolidated imperialism and anarchic struggle established another rhythm governing the history of biological exchange. This rhythm, of course, was influenced in turn by biological exchanges, as in the case of horses on the African savanna.

One can only postulate such patterns in the history of biological exchange. Demonstrating their validity would require quantitative evidence beyond what one can reasonably hope to find. Yet, one may be sure that time and again during the past ten millennia biological exchange has altered history. The next ten millennia will be quite different: fewer exchanges of existing species will take place because so many already have. Newly engineered species will occasionally depart from their creators' scripts, however, fashioning unpredictable biological dramas. Some of these surely will help shape the future.

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See also Columbian Exchange; Diseases—Overview

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Birth Control

Birth control encompasses a range of tactics, devices, medications, practices, and procedures designed to deliberately prevent or reduce the likelihood of pregnancy or childbirth. During the twentieth century, motivation for birth control ranged from individual choice to concern about increasing populations. In the twenty-first century birth control is seen as the responsibility of both sexually active men and women.

The history of birth control enables us to understand the global reverberations of an agenda for wider dissemination of contraceptive information that began in the early twentieth century. For most part, advocates of birth control in countries such as India, Japan, South Africa, Canada, Great Britain, and the United States came from privileged social, cultural, and economic backgrounds. Advocates of birth control found eugenic, Malthusian, and demographic arguments most compelling in making a case for national and international support for birth control and contraception. Some advocates also linked the demand for birth control to improved maternal health and national well being.

No history is complete without a set of historical actors; important participants in the debates on birth control dating from the 1920s onwards included such players as Mary Burgess, Kamaladevi Chattopadhyay, Ragnunath Dhondo Karve, A. R. Kaufman, Edith How-Martyn, Eileen Palmer, Narayan Sitaram Phadke, Aliyappin Padmanabha Pillay, Margaret Sanger, Ursala Scott, Kato Shidzue, Marie Stopes, and Elsa Woodrow. As the above list—which does not purport to be complete—suggests, far from being a solely Western phenomenon, the demand for birth control was a

complex intercontinental movement, with an active cohort that supported and sometimes competed with one another's work across national boundaries. This cohort of activists collectively created a global propaganda effort to gain acceptance for their controversial demand both within and beyond their nations.

Domestic resistance and political realities made it important for many advocates to seek a larger global platform to win support for their cause. For instance, international prominence and recognition greatly facilitated the work of Margaret Sanger, a U.S. activist, since she faced strong opposition against birth control in the United States due to the Comstock Act (1871), which forbade any dissemination of contraceptive knowledge through the postal system. A similar law banning birth control was passed in Canada in 1892 and was not repealed until 1969. There were no legal bans imposed on birth control in India, Japan, or Great Britain during this time.

International Conferences and Publications

The early advocates of birth control worked on a global platform and were in dialogue with one another from as early as the 1920s, exchanging and borrowing ideas. Their modes of intellectual exchange included organizing international conferences such as the International Birth Control Conference, held in London in 1922 and in New York in 1925. Indian advocates such as Gopaljee Ahluwalia attended both these conferences, as did many other participants from across the globe. Another large population conference was organized in India in 1936; Sanger was among those invited.

The early advocates also published journals that became important intellectual sites for international exchange and discussion on the subject of contraception and birth control. Some of the important journals published from London, New York, Madras, and Bombay (now Mumbai) in the 1920s and 1930s were *Birth Control News* (United States), *Birth Control Review* (United States), *Madras Birth Control Bulletin* (India), and *Marriage Hygiene* (India). Again, this is not a comprehensive list, but one that points to the rich international variety of publication on the subject. Advocates solicited articles for these journals internationally, and many of these journals carried specific information on birth control work and clinics around the world.

Birth control advocates also published a large number of monographs and books on the subject, which circulated globally. Books by Sanger and Marie Stopes (a British activist) were read by birth control advocates in India, South Africa, Japan, Britain, and United States. Besides being read by a large body of birth control advocates, these books were also read by lay people seeking to control their own fertility. Many private individuals in India and South Africa who read books by Sanger and Stopes wrote to them asking for further clarification on the methods discussed in their books. Stopes's *Married Love* and *Wise Parenthood: The Treatise on Birth Control for Married People*, both published in 1918, circulated widely in South Africa and other parts of the British Empire. Sanger's books *Motherhood in Bondage* and *The New Motherhood* were popular around the world. International birth control activists also endorsed one another's books; Sanger, for instance, wrote a foreword for Narayan Sitaram Phadke's 1927 *Sex Problem in India*, which gave this book greater credibility in the eyes of domestic readers in colonial India.

Financial and Technological Support

Birth control activists sought financial support for their work from donors across the globe. Stopes, for instance, wrote letters to Indian princes in 1927 asking them to support her clinical work in London, while the Indian advocate Aliyappin Padmanabha

Pillay requested financial help from the London Eugenic Society to continue the publication of his journal *Marriage Hygiene*. Sanger wrote to C. P. Blacker, of the London Eugenic Society, to request funds for her India visit in 1935. Sanger's visit to Japan in 1922 was financed by the Japanese magazine *Reconstruction*. For her part, Kato Shidzue, a Japanese birth control advocate, went to the United States in 1937 to raise money for her work in Japan. She toured in the United States speaking about birth control.

Besides financial networks that crossed national boundaries, reproductive technologies were also transported globally. Stopes supplied contraceptives to South Africans in the 1930s. Stopes's Society for Constructive Birth Control and Racial Progress (SCBC) offered to train birth control activists from India and South Africa. Many advocates also visited Sanger in the United States hoping to gain technical training on the subject. Elsa Woodrow, from the Cape Town Mother's Clinic Committee in South Africa, contacted Stopes in 1931, seeking advice on how to set up a clinic and the costs associated with it. Her organization associated itself with the SCBC and ordered contraceptive supplies from Stopes. The Mother's Welfare Society of South Africa received financial support from Stopes in 1938–1939. On her various visits to India, Sanger and her assistant Edith How-Martyn carried contraceptive technology with them, which they distributed to the various clinics in India. They also presented advocates with gynecological plaques, which were used by doctors and advocate to demonstrate the use of different contraceptive methods.

Discursive Parameters

Early advocates of birth control drew upon a range of intellectual ideas to make a strong case for the dissemination of contraceptive information. Many advocates found it beneficial to deploy a numerical argument, relying heavily upon census figures that were increasingly becoming available in most countries during the early twentieth century. For instance, the colonial census of 1931 in India revealed



Mrs. Margaret Sanger, the great birth control advocate, and her two sons.

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A 1921 ad for *Woman and the New Race*, Margaret Sanger's advocacy of contraception, warns: "If you fail to read this book do not ever complain of an unhappiness that may be yours, resulting from the lack of knowledge of the married state."

a sharp rise in population. This data was used to promote a Malthusian argument for birth control as a remedy for controlling spiraling demographic growth. Nationalist advocates of birth control were also quick to draw a connection between national poverty and size of the nation's population. None of the early advocates of birth control called for resource redistribution to alleviate national poverty,

however. Interestingly enough, Mohandas Gandhi, who strongly opposed the use of any chemical and mechanical contraceptive device, appears to have been one of the first to call for resource redistribution as a solution to India's growing population problem. He was strongly opposed to birth control on moral and philosophical grounds, and debated with Sanger on the subject in 1936.



Indian feminists such as Kamala-devi Chattopadhyay joined Sanger and Stopes in making a case for birth control as a means of improving women's maternal health. Lower maternal and infant mortality figures, it was argued, were important indicators of national well-being. Birth control activists also argued that lower fertility figures were a sign of modernity, especially for non-Western nations, which were seen to have higher fertility figures than Western nations such as France and Canada. Fertility figures in France and Canada had been declining from the late nineteenth century onwards, which led to a strong opposition to birth control in those countries.

Tension between Rhetoric and Technology

Examining the writings of the various advocates of birth control might leave one with the impression that they had something concrete to offer in terms of contraceptive technology. On closer examination, however, it seems that the international birth control movement was long on rhetoric but short on technology, especially before the invention and testing of the contraceptive pill in 1960.

In the period between 1930 and 1950 birth control activists greatly differed among themselves about the most appropriate contraceptive technology. Sanger and Lydia DeVilbiss were promoting a spermicidal douche powder that had been tested in Britain. The powder was in use in some of the southern states in the United States. It was marketed in India too. There were complaints against the powder, however; in India women complained about vaginal irritation and also about the difficulty in using this method given the lack of privacy in their working-class homes. In the face of these complaints, Pillay recommended condoms as the most reliable form of contraceptive. Stopes, in the meantime, claimed that she had discovered the ideal method for working-class women of London and for poor women in India and South Africa. The method Stopes was promoting was a cotton waste pessary dipped in olive oil. This method was not endorsed by Indian doctors and advocates.

In India, practitioners of Ayurveda, a traditional Indian system of medicine, advertised their products in vernacular magazines such as *Madhuri* and *Sudha* in the 1930s, while biomedical journals such as *The Indian Medical Gazette* carried advertisements for various commercially marketed contraceptives. Most of these advertisements provided addresses of local chemists who carried these products, but some advertisements in Indian medical journals gave only a London address, which indicates that birth control technologies circulated globally and that consumers shopped in a global market. But it should also be pointed out that consumers of these global products, especially in countries such as India, were primarily members of social and economic elites who could afford to pay for the product and its international postage cost.

Counter-Histories of Birth Control

In the late twentieth and early twenty-first centuries, scholars shifted their focus away from celebrating the work of birth control pioneers and have begun examining how this work was experienced by less powerful social and economic groups in different countries. Native American groups in the United States have spoken out against contraceptive technologies, which they argue have been used to police their sexuality rather than to empower native women to make informed reproductive choices. The history of the birth control movement in India has brought to light the call of the Indian feminist leader Begum Hamid Ali for the sterilization of the "unfit" in her enthusiasm for controlling India's population. Likewise Puerto Rican scholars tell a sad history of Puerto Rican women who, without knowing and without giving consent, became the guinea pigs used for testing the contraceptive pill in the 1950s. And there are at least two sides to the story following the more widespread and regulated introduction of the pill in the early 1960s. For some it is regarded as one of the more significant medical achievements of the twentieth century. Oral contraception is thought of as playing a significant

role in the women's liberation movement, particularly in regard to the sixties' era of greater sexual freedom. At the same time the pill brought with it considerable controversy in respect to side effects and ongoing health concerns and, no less significantly, debates surrounding sexual promiscuity and teenagers taking the pill. These revisionist histories force us to examine the real human costs that underwrote the efforts to manage human fecundity.

Future Agenda for Reproductive Health

Feminist scholars working on reproductive health issues are constantly asking themselves what the future agenda for reproductive health should look like. Feminist researchers, policy makers, and activists all agree that the success of contraceptive technology in the future will lie in democratic approaches, attentive to local needs and beliefs, seeking to empower women in making informed choices.

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See also Women's Reproductive Rights Movements

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Bolívar, Simón

(1783–1830)

SOUTH AMERICAN LIBERATOR

Simón Bolívar's aristocratic background, education, and his Grand Tour experience in 1799 resulted in his exposure to European revolutionaries in the early days of the Napoleonic era; in 1805 he made an oath to free South America from Spanish rule. He achieved his goal twenty-one years later, after failed attempts, exile, and a decade of war, thereby earning his title of "Liberator."

Simón Bolívar, the future Liberator of South America, was born to an aristocratic Creole family with extensive property surrounding Caracas in 1783. His parents had dramatic personalities (his father was a notorious womanizer and his mother managed the family estates aggressively), but Bolívar was orphaned at a young age, and the person who had the greatest impact on him as a child was a slave woman named Hipólita, by whom he was raised in his uncle's house and for whom he retained fond feelings throughout his life. He was a handsome, active boy, doted upon by his sisters and other female relatives. Young Simón was not a diligent student; he preferred an athletic life in the wild outdoors to time spent in a library with his tutors. Nevertheless, he was clever and received the best education that his family's wealth could provide and his disinclination to study would allow.

Bolívar's most influential teacher was Simón Rodríguez, an unorthodox freethinker who later became famous for his translation of Chateaubriand's *Atala* and for teaching anatomy to his students in the nude. In 1799, Rodríguez took his impressionable young charge to Europe for the typical gentleman's Grand Tour to complete his education. In Madrid, he was invited to play badminton with the future



A portrait of Simón Bolívar, known as the Liberator of South America, painted in 1883 by Martín Tovar y Tovar. *Historia de Venezuela en Imágenes*, El Nacional, 2001.

King Ferdinand VII; recalling the accident in which he accidentally knocked off his opponent's hat, Bolívar later mused, "who would have prophesied . . . that

this was a sign that one day I might tear the costliest jewel from his crown?" (Worcester 1977, 8). Teacher and student moved on to Paris where they spent much time in the salon of the infamous Fanny du Villars. It was the early Napoleonic era and when Bolívar and Rodríguez met with naturalists Alexander von Humboldt and Aimé Bonpland, they spent much time discussing the destinies of great men and the revolutions they make. In 1805, at Monte Sacro in Rome, Bolívar took a symbolic oath that he would liberate his countrymen from the Spanish yoke.

In 1806, Bolívar returned to Venezuela via the United States. He traveled with his new wife, a beautiful young Spanish girl named María Teresa Rodríguez del Toro. By all accounts he was devoted to her and was devastated when she died of typhus shortly after her arrival in Caracas. Although he had many subsequent relationships with women, Bolívar never married again and left no children. Instead, he turned his attention to local politics and accepted a position as the lieutenant chief justice of the Yare Valley. In 1810, when a constitutional crisis opened the possibility for Spanish-American *cabildos* (town councils) to seize temporary powers to rule in the king's name, Bolívar sensed that his historical moment had arrived. He went to London as a member of the three-person delegation hoping to secure British military protection for the Caracas junta and perhaps some sort of political recognition as well. Those goals may have proved too optimistic, but the brief time Bolívar spent in London initiated a devotion to British-style aristocratic reformism and constitutional monarchy that lasted for the rest of his life.

Bolívar was twenty-seven years old when he returned to Caracas in September 1810. He was a charismatic figure whose intellectual training and vast fortune ensured that his voice would be heard in the deliberations over the momentous decisions facing his country. In the beginning, Bolívar was willing to serve as a commander under the more experienced General Francisco de Miranda when the inevitable Spanish royalist counterattack began; by 1812, however, Bolívar had started to doubt the older man's competence. In a highly controversial episode, Bolívar's

garrison surrendered to the royalist Monteverde's forces and Miranda was taken captive. Bolívar's detractors see this a betrayal of both the Republic and a personal betrayal; Bolívar himself saw it as a patriotic act that saved his countrymen further bloodshed from Miranda's disastrous leadership. With the First Venezuelan Republic (1811–1812) in ruins, Bolívar and the rest of the patriotic leadership fled to exile in New Granada and islands in the British Caribbean with rulers sympathetic to his cause.

In 1812, Bolívar wrote his first significant political treatise, the Cartagena Manifesto. In 1813, he declared "war to the death" against the Spanish presence in South America, wholly dedicating his life and energies to the cause; he declared the Second Republic and took the title of *Libertador* (Liberator) for himself. What followed was a decade-long brutal civil war that pitted members of important families—including Bolívar's own—against each other. In 1816, Bolívar wrote another famous tract, known as the Jamaica Letter, while he was trying to gather men and material for an expedition to Venezuela. He sailed past Haiti, where he received further assistance from the mulatto leader Alexander Pétion in exchange for a promise to abolish slavery in the future Venezuelan republic. Bolívar's multinational forces eventually included a large group of British soldiers, known as the Irish and British Legions, and a homegrown band of fierce plainsmen known as the *llaneros* under the command of José Antonio Páez.

Bolívar's forces invaded the mainland in 1817 and made slow but steady advances. By 1819, they had secured a large part of the Orinoco delta and had set up a patriot headquarters at Angostura. Under Bolívar's watchful gaze, his partisans called a congress to declare the Third Republic, write a constitution, and declare the Liberator to be the first president. The Angostura constitution provided for separation of powers and many other liberal measures influenced by the United States, Britain, the Cádiz Constitution of 1812, and the Greek and Roman classical heritage. Now confirmed as a legitimate head of state, Bolívar pressed onward to two decisive victories over the royalists at Boyacá

Judgment comes from experience, and experience comes from bad judgment. • **Simón Bolívar** (1783–1830)

(1820) and Carabobo (1821). Shortly thereafter, the independence of northern South America was guaranteed in a formal capitulation and the Congress of Cúcuta created the Republic of Gran Colombia. Always restless, Bolívar could not bring himself to stay in one place and govern while Spanish forces remained on the continent; he left Gran Colombia in the care of his vice president, Francisco de Paula Santander, and headed westward to join in the liberation of Peru. After their fateful meeting at Guayaquil in 1822, Bolívar's only hemispheric rival, Argentine general José de San Martín, went into self-imposed exile and the Liberator emerged as the towering hero of the continental independence movement. By 1826, the last remaining royal strongholds fell and the grateful former Peruvian province adopted a new name, Bolivia, in honor of its liberator.

Simón Bolívar had accomplished his life's goal. He enjoyed unimaginable popularity as the Liberator of a continent, but the territories quickly proved ungovernable. Racial tensions worsened when the patriots did not emancipate the slaves immediately as they had promised. Regional jealousies quickly surfaced and there was growing hostility between those who favored a decentralized federal system and those like Bolívar who increasingly wanted a strong centralized authority to deal with the unrest. His enemies quickly depicted him as a closet monarchist, intent on securing an American crown for himself. In the late 1820s, he survived a series of assassination attempts, one time by jumping out of a window while his would-be murderers were at the door.

He grew increasingly pessimistic and planned to leave for England. Before he could depart, however, an exhausted Bolívar succumbed to tuberculosis in December 1830. His legacy is vast. Not only did Bolívar inspire the independence movements of

northern South America and use his considerable military skills to defeat the Spanish forces throughout the region, he conceived of a continental system that was the forerunner of modern Pan-Americanism. He has achieved iconic status throughout the Americas, and has lent his name to two South American republics (Bolivia and the Bolivarian Republic of Venezuela) and one national currency.

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See also Warfare—Post-Columbian Latin American

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Bows and Arrows

For millennia before the invention of guns and gunpowder, bows and arrows were the most efficient human instruments for killing at a distance. Their advantage was so great that bows and arrows spread across the Old World, with innovations across cultures, from the undetermined place they first appeared, and were still expanding southward in the Americas when Columbus arrived.

Arrowheads, found scattered across most of the Earth, count as one of the most common objects of archeological significance, outnumbered only by broken bits of pottery. It is easy to imagine how an arrow aimed at a distant human enemy or hunted animal often missed its target and got lost to remain undisturbed in its lodging place for uncounted centuries, only for us to find it by chance. But isolated arrowheads, separated from other human artifacts, are usually impossible to date and tell us little or nothing about who made and used them.

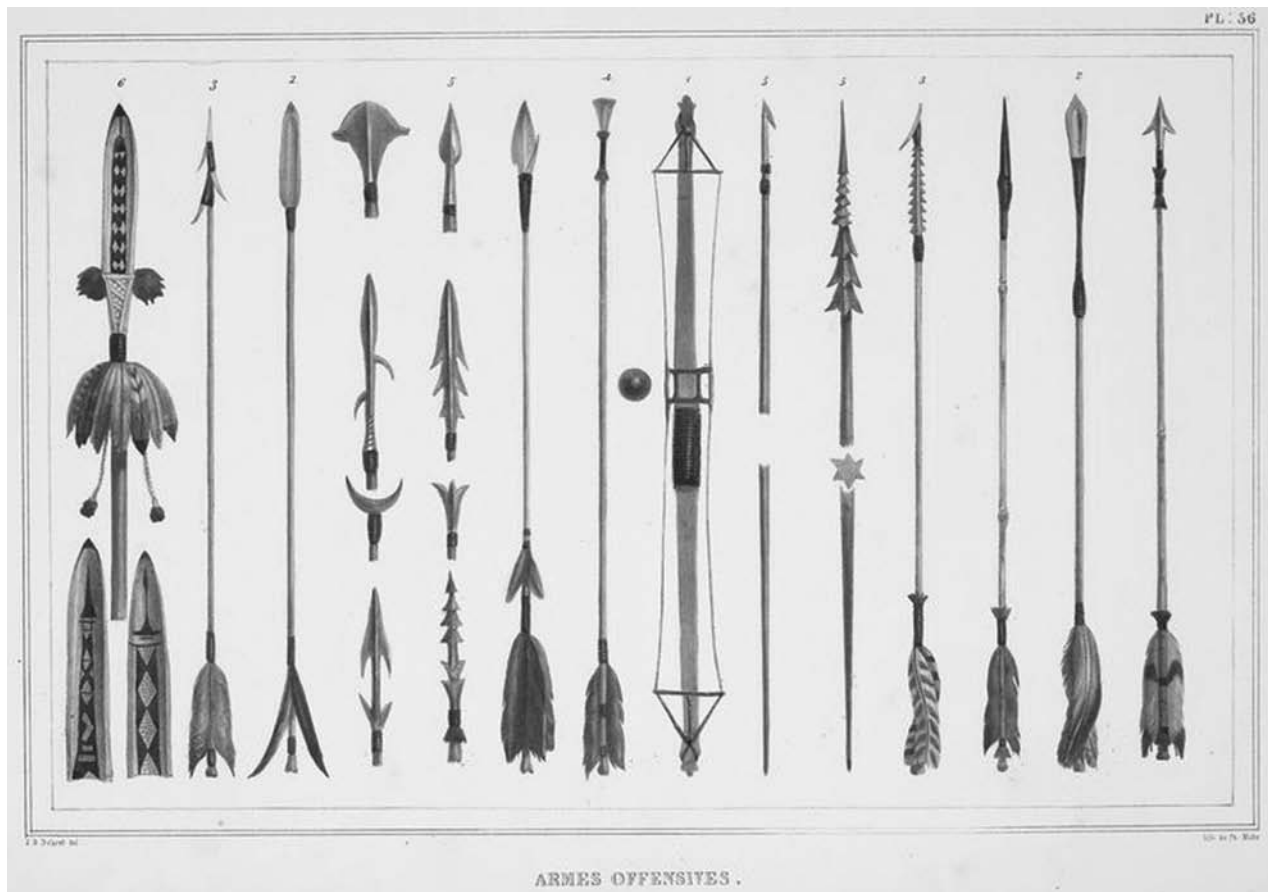
A few rock paintings of bowmen running and shooting in North Africa and elsewhere show that as much as 10,000 years ago archery had come to dominate local warfare. And again it is not difficult to see why that was so, for a weapon that can wound or kill at a distance of up to hundred yards far out-ranged older projectiles, and the peoples who first possessed them could attack others with impunity. So once lethally powerful bows and arrows were invented—wherever and whenever that may have occurred—they were bound to spread, and did so throughout Eurasia and Africa, before carvings and written records began to supplement sporadic, undated arrowhead finds.

Uncertain, Ancient Origins

Next to nothing can be said of how bows became so powerful. They must have been invented somewhere in Asia or Africa, and sometime between about 30,000 and 15,000 years ago. They may have been derived from small, soft-strung bows used to twirl a fire drill (a pointed stick) fast enough to start a flame: by wrapping the bow string around the stick, pressing the point against a block of wood and then pulling the bow back and forth quickly, the heat of friction ignited a pile of specially prepared dry tinder. But far bigger bows, resilient enough to launch lethal arrows, were much harder to construct than the small and weak bows needed to twirl fire drills.

These large bows needed to be symmetrically shaped and made of tough, resilient kinds of wood able to bend and then spring back into shape time and again. Strings strong enough to bend such bows must have been even harder to make and fasten securely to the tips of the bow, since they had to withstand repeated tests of sudden high tension and instantaneous release. Arrows that could fly straight were almost as difficult to fashion. Attaching stone heads to wooden shafts firmly, and arranging suitably trimmed bird feathers at the rear to assure a smooth path through the air, required precise skill, as well as strong glues and/or some sort of slender binding material.

It may have taken many centuries for humans to solve all the problems of making such bows and arrows—and even when they knew how, it was never assured that people living in different regions and climates of the Earth would find suitable raw materials. But as soon as these formidable weapons did



Jean Baptiste Debret (1768–1848) illustrated this assortment of Brazilian arrows and other spear-like weapons labeled in French as *armes offensives*.

appear, neighbors immediately needed them too for self-defense; without bows they were liable to speedy extermination by those who did have them.

Innovations across Cultures

It is also clear that improvements in the design of bows did not cease. In particular, bows made only of wood, which remained usual in most of the world, were overtaken by more complicated compound bows as early as 2200 BCE in Mesopotamia, where a stone carving shows an Akkadian king carrying a shortened bow with the distinctive shape associated with the compound bows that later generations of steppe nomads used with great effect. Compound bows were cunningly constructed of wood, bone,

and sinew to increase their resilience and power. They had the additional advantage of being short and easy to use on horseback, so these powerful bows remained the supreme weapon of Eurasian steppe warriors until infantry guns matched and surpassed them after about 1700 CE.

Even more efficient (and far more difficult to manufacture) were cross-bows, invented in China about 350 BCE; they were cocked by using both hands (later by winding a winch) and released by using a trigger. The winch could bend stiffer bows (eventually made of steel) and fired short, metal arrows that could penetrate most forms of armor. But cross-bows needed metal parts for trigger and cocking mechanisms, and except in China, where large numbers of infantrymen used them against

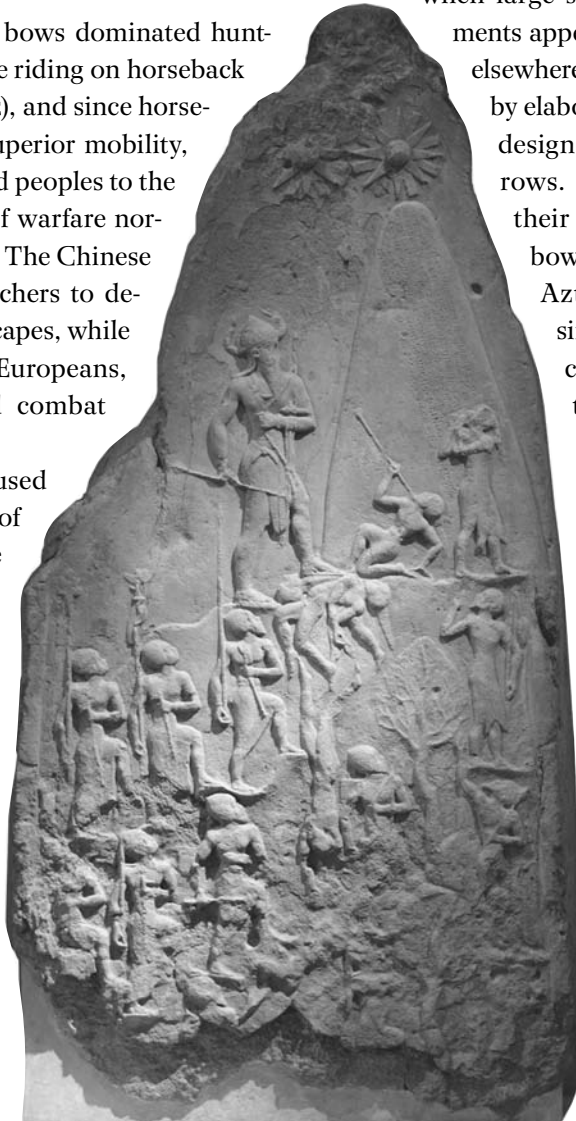
invaders with considerable success, they never became very numerous.

Within Eurasia and Africa, bows and arrows assumed different societal roles. As Homer's *Iliad* makes clear, ancient Greeks thought that archers were cowardly because they did not expose their bodies to the risk of wounds and death in hand-to-hand combat. With some exceptions Europeans long preferred spears and swords to bows. So when Catalan cross-bowmen handily defeated French knights in Sicily (1282), and when English (often Welsh) bowmen shot down French knights during the Hundred Years' War (1338–1453), their successes shocked the upper classes of western Europe.

On the steppes, however, bows dominated hunting and warfare from the time riding on horseback became common (by 350 BCE), and since horsemen had the advantage of superior mobility, they often conquered civilized peoples to the south and made their style of warfare normative through most of Asia. The Chinese relied mainly on infantry archers to defend fortified cities and landscapes, while Japanese fighting men, like Europeans, honored face-to-face sword combat more than archery.

Ancient Egyptian armies used bows and chariots like those of Mesopotamia, but too little is known about sub-Saharan Africa to allow historians to say anything in detail about the use of bows and arrows for warfare and hunting in that part of the continent.

The Naram Sin stele, now at the Louvre, shows an Akkadian king (c. 2200 BCE) carrying a shortened bow. Its distinctive shape is associated with compound bows used to great effect by later generations of steppe nomads.



We do know that Australians never learned to use bows before Europeans arrived, but in the Americas bows showed up in Alaska among Inuit peoples sometime between 100 CE and 500 CE, and soon spread southward among Amerindian tribes.

Very likely it was the arrival of bows and arrows that compelled salmon fishers along the Pacific coast to gather together into large villages for protection about 500 CE, and the disappearance of the Hopewell peoples, who built elaborate ritual mounds in the Ohio River valley between about 500 BCE and 500 CE, may have been due to harassment by peoples from the north equipped with bows and arrows. At any rate,

when large so-called Mississippian settlements appeared at Cahokia, Illinois, and elsewhere after 800, they were defended by elaborate earthworks and palisades designed for protection against arrows. Simultaneously, Toltecs and their Chichimec allies introduced bows to Mexico, but subsequently Aztec warriors rejected them, since they waged war mainly to capture prisoners whose hearts they would offer to the sun god to make sure of divine favor.

In most of South America bows remained unknown when Columbus arrived. But Arawak tribes living along the northern coast of the continent were then using bows and arrows to attack Taino inhabitants of the Caribbean islands—a process interrupted by the arrival of Spaniards who, backed with superior weapons, hastened the Tainos' extinction by bringing novel but lethal diseases onto the scene.

If the invention and spread of bows and arrows profoundly changed human

European merchants supply the best weaponry, contributing to their own defeat. • **Saladin (c. 1137–1193)**



An interest in archery throughout the years spurred some Boy Scouts to make their own bows and arrows. Photo taken during the 1929 Boy Scout anniversary week, 8–14 February.

affairs, what about their effect on animals? The impact of a weapon that killed at a distance upon animal herds is wholly unrecorded, and can only be imagined. Prey animals had to learn to fear and flee from human beings whenever they sensed their presence, and at first, when bows were new, kills must have become far easier. How quickly animals became more wary, making human hunting more difficult again, is unknowable but may have been quite quick. At any rate, no major extinctions can be attributed to bows, for humans had been capable of using spears to extinguish unwary game animals on islands and in the Americas long before bows extended the range of their power to kill.

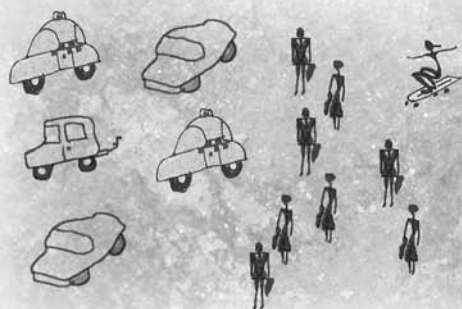
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See also Warfare—Pre-Columbian Mesoamerica and North America; Warfare—Pre-Columbian South America; Warfare—South Asia; Warfare—Steppe Nomads

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British East India Company

Stockholders formed the English East India Company (later the British East India Company) to import Asian goods by sea. With a monopoly enforced by the British crown, the company governed its trading posts, waged wars, and even conquered India, in order to protect its interests. A massive revolt in India caused the British government to take control of the country and dissolve the company in 1859.

The English East India Company was a British trading company, responsible for the import of Asian goods, expanding English and British interests in Asia, and conquering India. The company was dissolved in 1859 when the administration of India passed to the British government.

The English East India Company was created as a stockholders' company in 1599 and granted monopoly for trade with East India in 1600 by Queen Elizabeth. The British initiative followed the successes of the Dutch East India Company and Portuguese traders that imported Asian goods by sailing around the horn of Africa, surpassing the traditional caravans. The seventeenth century was marked by intense competition and frequent battles between the European companies.

Main products from Asia in the seventeenth century were pepper and spices, which demanded a high price per quantity in the home market. However, a successful voyage demanded planning, strong support, and patience as it took about two years to be completed. Dangers faced by the traders included storms, tricky waters, pirates (especially European competitors), and diseases, which combined to regular losses of sailors and ships. Consequently, state

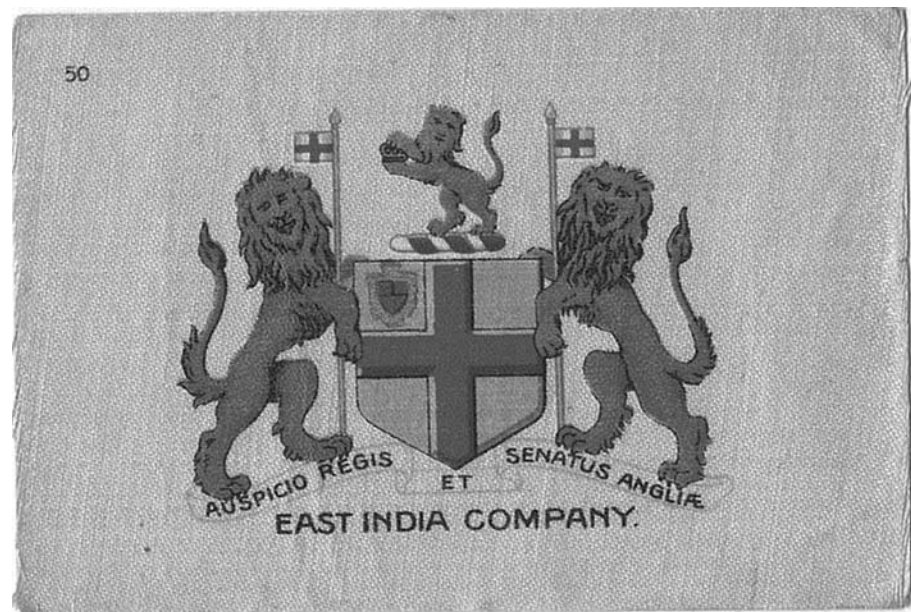
backing and shareholders who could afford to wait for returns on their investments were essential, while the final rewards were significant.

From the 1640s cotton and silk cloth became important trade objects. Most cloth was from India, though calico patterns, popular in Europe for their aesthetic and exotic quality, were actually patterns adjusted to European taste. By 1700 the English East India Company clearly controlled the European market for Indian cloth, with annual imports approaching one million pieces of cloth. The imports led the English textile industry to protest against foreign competition and a law was enacted allowing only raw silk imports, rather than silk cloth, to secure work for English silk weavers. The law had little effect on the company, as much of its market was in continental Europe, unaffected by the English law.

During the seventeenth century trading activities were based from relatively small trading stations, or factories, such as Bantam in Java and Madras in India. These provided a steady settlement in which expatriate employees could worship freely, as Christians for example, and rule by their own laws in agreement with the local rulers. A noticeable exception was China, which, except for the Portuguese in Macao, did not allow foreigners a permanent base, demanding all trade to be conducted through Chinese middlemen responsible for adherence to Chinese rules.

From around 1750 the (now British) East India Company increasingly participated in Indian politics, leading to its conquest of India. It is debated whether conquest was intended from the start, or if it was the unintended consequence of interfering in Indian politics in favor of regional stability for the sake of company trade, but once conquest started,

The British East India Company's emblem, printed on silk backed with paper, bears the motto (translated from Latin): "By the Command of the King and the Parliament of England." New York Public Library.



the company rapidly gained control over parts of India as the ruling Mughal Empire weakened. Most company expansion resulted from local authority being threatened by the Marathas, a major people from the western coast of India whose main families joined in the Maratha confederacy in the eighteenth century and aimed to expand Maratha power at the expense of the weakened Mughals. The company offered armed aid and as reward received land, titles, and influence. Consequently, the company gained control and authority as local rulers became increasingly dependent on it. This process continued until its culmination in 1818, when most of India was under direct or indirect company control. This is a prime example of "reluctant empire," imperial expansion run by private companies, not government policies.

The company ruled India as a military state, organizing a rigid interpretation of Indian traditions and caste, creating an inflexible social system. Apart from trade, a process of attempted Anglicizing began with an influx of Christian missionaries and English values. Among the customs attacked was suttee, the burning of widows; however, the British attempt associated suttee with the higher classes, and thus it became desirable to the lower classes. Other attempts to

strengthen the position of women against "barbaric" traditions had similar effects.

Economically, the industrial revolution in Britain ruined the Indian textile industry in the 1820s and made the company focus on new areas of trade, chiefly opium sold to China. This led to the Opium Wars from 1839–1842 and 1856–1860, which forced China to open up to unfettered British trade. However, opium did not cover the total of the British imports from China, and to cover the deficit, silver from India was used to balance the trade. During the same period, the British parliament abolished the company's monopolies on trade to India (1813) and China (1833).

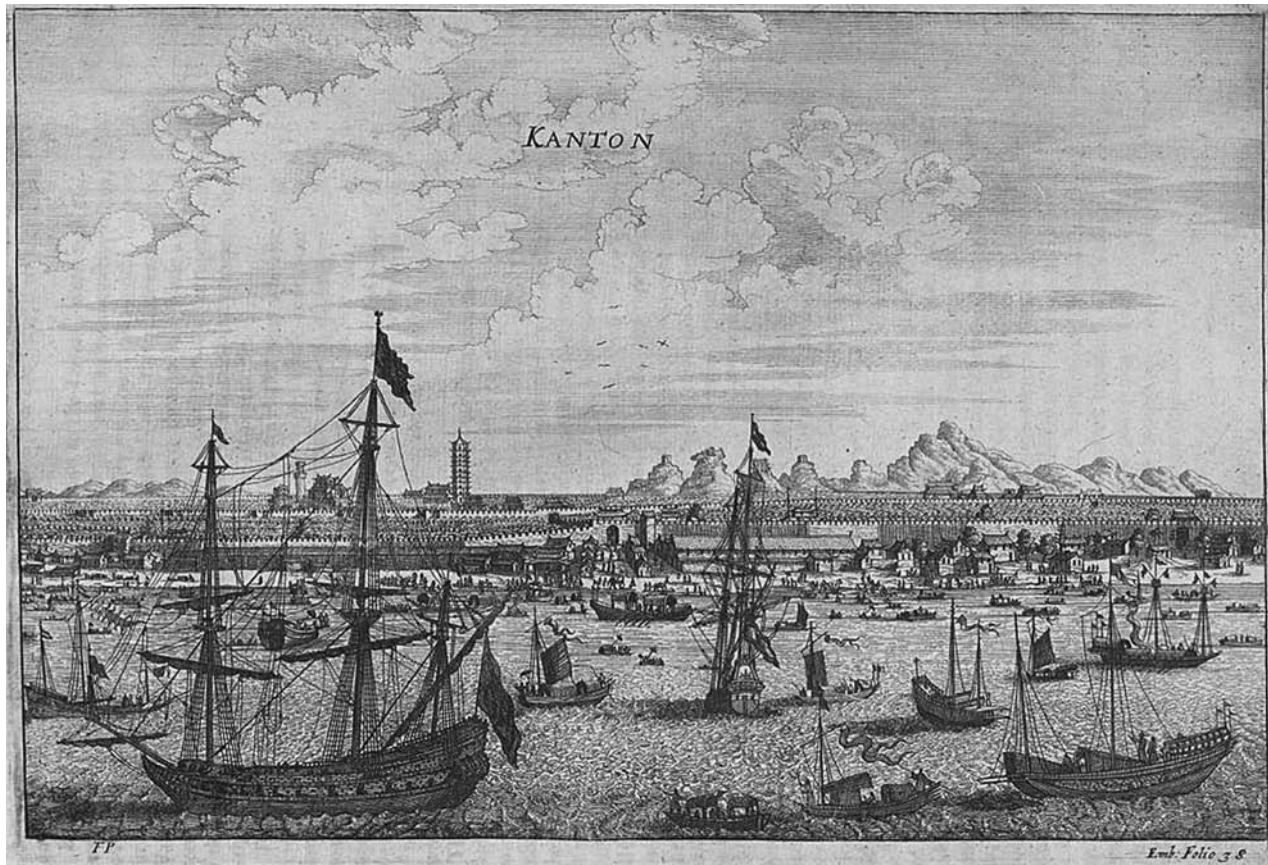
In 1857, millions of Indians rose in revolt in the Great Mutiny. As a consequence, the British parliament decided to take over the government of India from the company in 1859, ending the East India Company's period as rulers of an empire and leading to its complete abolishment.

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See also British Empire

One thing is certain . . . we are not going to get any officer commission in the British or native army . . . The reason is that no Britisher would ever like to be under an Indian's command at present. It will require some generations before this feeling of the conquerors and the conquered, the ruler and the ruled, and of blacks and whites will fall away. • Kunwar Amar Singh



An engraving depicts ships of the East India Company in the harbor of Guangzhou (Canton), China, in 1668. From *An Embassy from the East-India Company . . . in Their Passages from Canton to London*, by Johannes Nieuhof.

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British Empire

Britain played a major role in the globalization of world trade in the seventeenth and eighteenth centuries, as well as in the Industrial Revolution in the eighteenth and nineteenth centuries, and thus exerted an unprecedented amount of power in different parts of the world well into the twentieth century. Nevertheless, the empire became difficult to maintain due to financial woes and the rise of the United States as a global power.

At least five British empires rose and fell between the early seventeenth century and the beginning of the last one-third of the twentieth century. These empires were in different parts of the world and were run on different principles. The one constant was Great Britain's disproportionate ability to project its power abroad. Although none of the five empires remains, their power is still felt in the wide extension of the English language and of the Anglo-American legal tradition around the world.

Sources of British Power

When most societies were still in the second stage of human development (farming), British society entered the third stage (urbanization, world trade, and industrial development).

No longer were the British limited to what their arable land could produce. As in most countries, the farms and forests had provided the foodstuffs, textiles, building materials, means of transport (in the form of horses and their fodder), and burnable fuel. To an ever greater degree as the eighteenth century progressed, however, the British could meet each of these basic economic needs through massive imports—and in the case of building

materials, transport needs, and fuel, major parts of the needs could be met through mining, without taking up any arable land in Great Britain or abroad.

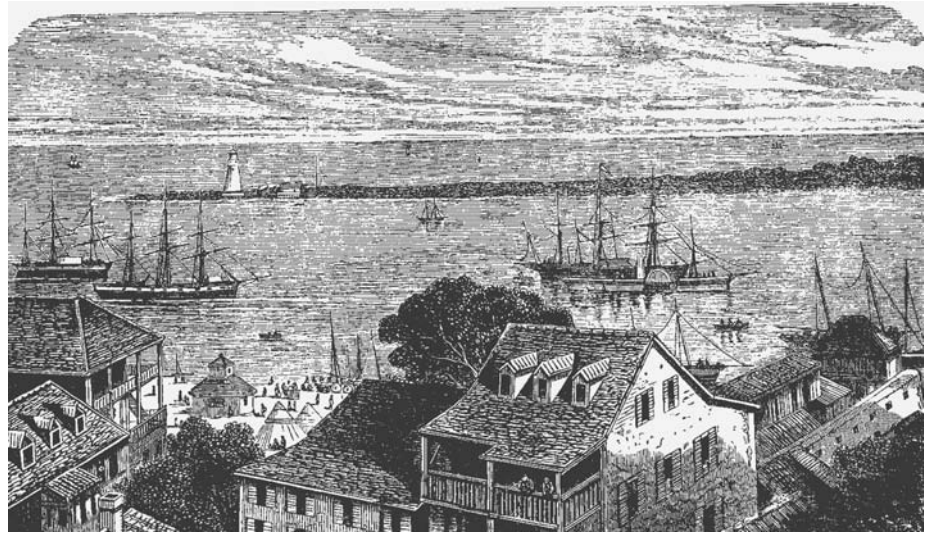
Great Britain's ability to free much of its labor force from the land and shift it into trade and manufacturing allowed for the projection of British power to the ends of the Earth. By 1800 the British navy ruled the waves. The profits and raw materials that poured into the British Isles because of Great Britain's unique place in international trade accelerated the modernization of the domestic marketplace; this modernization in turn further magnified British power.

The First Three British Empires

Great Britain's first empire flourished during the seventeenth and eighteenth centuries. The East India Company was given its Royal Charter and its monopoly on trade with India in 1600. Imperial expansion in India long took the form of coastal trading posts called "entrepôts" or (in an old-fashioned sense of the word) "factories"—where the factors of production (from trading goods to stockpiles of food and materials for repairing ships) were warehoused in areas leased from local powers. The entrepôts also contained the offices and homes of local European agents and native legal experts, translators, and go-betweens (called "compradores," from a Portuguese word). From these entrepôts the East India Company acquired local influence, especially in those areas of India where the East India Company provided weapons or soldiers-for-hire for Indian governments. But no large-scale settlement of British people took place in India.

At the same time, settlement colonies had been established in Virginia in 1607 and Massachusetts Bay

Nassau, capital of the Bahamas. Granted to Britain in 1629, the Bahamas succumbed to Spanish, pirate, and American attacks in the seventeenth and eighteenth centuries until being restored to Britain by the 1783 Treaty of Versailles.



in 1620. Through the Committee on Trade and Plantations (a committee of the Privy Council), the British government tried to maintain a policy of mercantilism, buying only raw material from the colonies and allowing them to buy their finished goods solely from the mother country. This arrangement was designed to maintain the flow of precious metals into Great Britain. Indeed, some evidence indicates that the captive market for British manufactures that was the eastern seaboard of North America may have helped to give the British economy its push into full modernization.

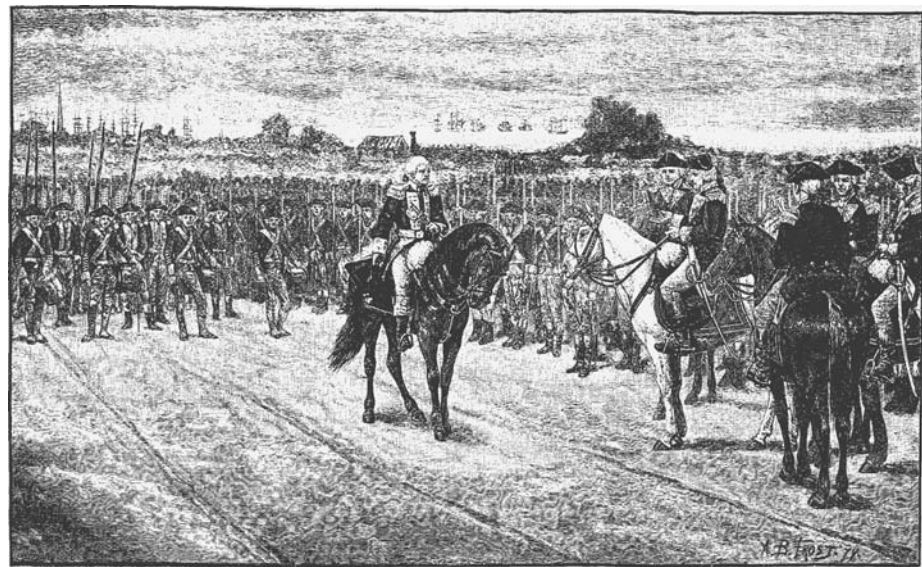
Meanwhile, France's rival imperial tradition was destroyed in the Seven Years' War (1756–1763, called in the United States the “French and Indian War”), which was fought largely over trading opportunities. The British victory stripped the French of their North American colonies and their position in India. The French revenge was to bankroll the American Revolution against the British (1775–1781), a war fought over the tax and mercantile policies that were stifling colonial development. (French support for America's successful revolution, in turn, helped bankrupt the French state and prepared the way for the French Revolution that began in 1789.)

With the loss of the American colonies and the step-by-step expansion of British military and political control in India, British imperial attention turned to India itself and the slave-worked sugar plantations of

the Caribbean. Thus began the second British Empire, which lasted from the 1780s to the 1830s. It coincided with the beginnings of the Evangelical Movement—the development of a more personally committed, morally stringent form of Protestantism than the Anglican Church of the eighteenth century had been providing for its adherents—and the rise of mass middle-class political involvement within Great Britain. Many people, having it better than ever before, looked around them and found to their shock that many other people were being ground into the dust. Robert Clive and Warren Hastings, two East India Company Governors' General in India, were questioned by Parliament in London over how they had enriched themselves at the expense of the Indian people. Clive committed suicide in 1774 and Warren Hastings was impeached in a major state trial that lasted from 1787 till 1795—at which point he was acquitted. Meanwhile the military conquest of whole Indian provinces continued.

The first great middle-class reform movement after the expansion of the voting franchise among the richer sectors of British society in 1832 was the abolition of slavery in the British Empire in the 1830s (the original act abolishing slavery, later modified, was passed in 1833). The result of abolition was to permanently injure the economies of the sugar islands of the Caribbean—and make England a more humane nation.

The greatest loss for the British Empire turned out to be their 1781 surrender to the Americans at Yorktown.



SURRENDER AT YORKTOWN.

Another result was the third British Empire. The Caribbean was now of only marginal concern. The focus shifted to a new set of settlement colonies, so that mid-nineteenth-century England exported its parliamentary procedures (although usually on a more democratic franchise) to Australia, New Zealand, and southern Africa (the first two countries had been claimed from nonwhites in 1788 and 1840, respectively; southern Africa, originally Dutch, had been taken from the French emperor Napoleon as a stopover on the way to India).

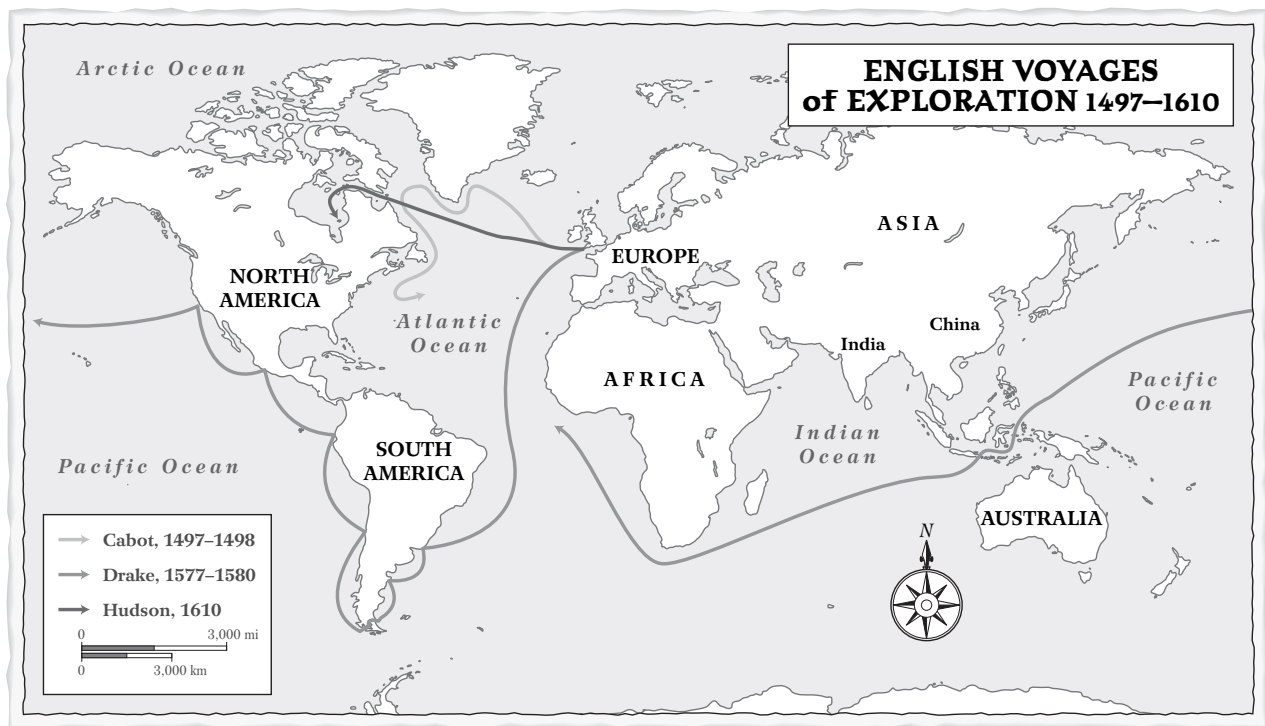
Self-governing institutions were in place in most settlement colonies by the end of the 1850s. Yet smaller outposts, and those without many European settlers, did not have such institutions. In no two colonies were the institutions the same. Until 1859, furthermore, India was the possession of a private company that was merely under British government regulation. In short, no imperial “system” existed, merely the Colonial Office (and after 1859 the India Office), which sent out governors and reviewed local regulations or laws. Rather than any imperial system, instead a diverse imperial heritage existed.

The Fourth and Fifth British Empires

By the late nineteenth century Great Britain’s economic superiority was being lost to competition from the

newly industrializing areas, chiefly continental Europe, North America, and Japan. Still, the British retained two key advantages. First was the city of London, the world’s financial center. The city was the source of England’s continuing balance-of-payments surplus (in the form of the profits on “invisible” financial dealings) long after England was running a trade deficit in tangible goods. Second was England’s head start in developing a disproportionate, superpower-scale military establishment, with a worldwide network of coaling stations and a tradition of imperial and military service among the upper and middle classes.

The fourth British Empire was the result of the scramble among Great Britain, France, and the newly Unified German Empire, among others, for Africa (and other tropical colonies) during the 1880s and 1890s. During the twentieth century many people assumed that Great Britain had seized these colonies in order to make money. But modern scholarship suggests that it was never profitable to administer the interior of Africa or isolated islands in the South Pacific. Three other explanations exist for the scramble for Africa, or at least for Great Britain’s share in the scramble: (1) the desire to freeze out other European powers or to avoid being frozen out by them; (2) the recurrent instability of frontiers with less-developed, less-industrialized societies; and



(3) the wish on the part of governments for cheap victories to impress the newly enfranchised common people (four-fifths of British men could vote after 1884–1885).

The fifth (and final) British Empire was what was gained through League of Nations mandates during the twentieth century. The British took these mandates, such as Palestine, and yet after the Second Boer War (1899–1902), many British people doubted the justice of Great Britain's imperial activities.

Imperial affairs after 1918 were dominated by the questions of how and when Indian independence would come (it came in 1947). The status of the white settlement colonies was also a question (namely Canada, a federation since 1867; Australia, federated in 1901; the Union of South Africa, set up as a federation under the rule of the defeated Afrikaans-speaking Boers in 1910; New Zealand, which had governed itself since the 1850s; and eventually Ireland—after the 1921 Anglo-Irish Treaty). The other powers at the Versailles Peace Conference (ending World War I) in 1919 had denied

that any of these colonies were independent states. The representatives of the colonies had to sign the Versailles Treaty not as independent powers but underneath the British signature, and with an indentation to show that they were subparts of the British Empire.

The Statute of Westminster in 1931, which created the British Commonwealth of Nations, granted full independence and the right to maintain independent international diplomatic relations to self-governing colonies. Under the Statute of Westminster, government by a local parliament with a prime minister who effectively chooses the monarch's representative (the governor-general)—a model that had originated in the mid-nineteenth century—was now formalized. Under this model the newly independent states that left the British Empire during the 1950s and 1960s were organized, although many of these states would soon abandon their British-style constitutions and the institution of governor-general in favor of their own presidents. These states nonetheless tended to remain members of the Commonwealth, whose head was the British monarch.



Ideologies of British Imperialism

The British nawabs (rulers) who, working for the East India Company, ruled India during the late eighteenth century maintained no pretense that they were in India for any noble purpose or that they had any cultural superiority to the Indians. The nawabs were there to make money, and on those frank terms they mixed equally in the wealthier reaches of Indian society. Many cross-cultural marriages and affairs occurred.

After the Evangelical Movement in the first one-third of the nineteenth century had accustomed the British to asking themselves the moral groundings of their actions—and after the violent suppression of the Indian “Mutiny” of 1857–1858—people developed the idea of a British mission to bring order and economic progress to peoples who, it was now assumed, would kill each other without the pacifying hand of British oppression. The British rulers stopped mixing with the Indian ruled and developed a self-image of stoicism and suffering.

In Great Britain itself the spread of literacy and education during the mid-nineteenth century led many people to ask why their country was in front of the world in so many ways. That Great Britain was in front of the world was plain to see from the halls of the Great Exhibition (1851): half the products on show were from one island off the northwest coast of Europe, and half were from the rest of the world, combined—and this was a fair sampling of who was producing what.

The English philosopher John Stuart Mill (*On Liberty*, 1859) and others looked to the economic effects of English political freedom for an explanation of Britain’s global power. After publication of the English naturalist Charles Darwin’s *The Origin of Species* (1859), however, many writers began to work out ideas of racial or biological superiority. Later generations simply took British power and racial superiority for granted. The statesman Winston Churchill, for example, stayed loyal throughout his life to his sentimental attachment to the Empire that had painted all the schoolroom maps “British Empire Red.” As he wrote his associate Anthony Eden in 1944, “hands off

the British Empire is our maxim and it must not be weakened or smirched to please sob-stuff merchants at home or foreigners of any hue” (Cain and Hopkins 2002, 628).

After World War II, fewer British people would share this view. British Prime Minister Harold Macmillan, in his “Winds of Change” speech in South Africa in 1960, proclaimed the coming of African independence—which had actually become inevitable with Great Britain’s U.S.-mandated withdrawal from Suez in Egypt in 1956. In an egalitarian age, Great Britain found itself the junior partner of the new superpower, the United States, which was against British imperialism. Plus, for some time after World War II Great Britain was financially strapped. For both reasons, the British Empire could not be maintained. Most of the colonies were given their independence by 1970. Except for the Falkland Islands and a few other outposts (the largest in population, at 65,000, is Bermuda, a colony since 1609), the empire of the world’s first industrial country has ceased to be—although it continues to exert its cultural influence in a world dominated by the English-speaking powers and the English language itself.

Empire of the English Language

After 1492, when newcomers from the Old World found themselves in the New World among natives who had not been exposed to the diseases of the Old World of Afro-Eurasia—Africa, Eurasia, and their environs—the natives tended to die in large numbers, often with the active help of the newcomers (as in the case of the cholera-infested blankets given to the native North Americans during the eighteenth century and the random shootings of Australian Aborigines during the nineteenth). The population of the New World was reduced by 90 percent during the thirty years after 1492 and by 50 percent in the remainder of the population during the ninety years after that. During the nineteenth century the population of Tasmania disappeared completely.

Thus, ample room for British settlers seemed to exist. They included poor people looking for a better life, but

One day the war will be over. And I hope that the people that use this bridge in years to come will remember how it was built and who built it. Not a gang of slaves, but soldiers, British soldiers, even in captivity.

• Sir Alec Guinness (1914–2000) as Colonel Nicholson in *The Bridge on the River Kwai*

they also included involuntary settlers, people whose sentences of death were commuted to transportation (a practice abolished in 1868). Room also existed for carefully selected poor families, who were offered subsidized fares in order to create socially balanced colonies and to remove the poor from Great Britain itself. This form of social engineering was most strongly advocated in the writings of the English colonialist Edward Gibbon Wakefield, starting with *A Letter from Sydney* (1829). Settlers cheated the natives out of their land and fought battles with them when cheating would not work (as in New Zealand in the period stretching from the Treaty of Waitangi in 1840 through the Maori Wars of the 1860s). In Australia, cheating the natives with unequal or broken treaties on the New Zealand (or North American) model was not necessary, for the Australian settlers denied that the natives had the cultural or human worth to own land at all; land was simply taken without formality or fuss.

Until the abolition of the slave trade in the British Empire in 1807, slaves were dispatched around the world at British command. During the nineteenth century Chinese “coolies” and Indian peasants were similarly dispatched. These slaves and peasant workers contributed to the repopulation of much of the world by peoples of Afro-Eurasian stock. This result is visible in today’s United States, Canada, Australia, New Zealand, Fiji, and the Caribbean.

The importance of these resettled countries, seen together with the British-influenced countries of South Asia and Africa and with the continuing importance of the United Kingdom and the Republic of Ireland, has led to the domination of the English language in world trade, mass media, and science, at least since the beginning of the twentieth century, when English eclipsed French in diplomacy.

On the other hand, the African interior, which had already been weakened by centuries of slave-trading, was deliberately subordinated to the Western economic system in the early and middle twentieth century—through the imposition of taxes that could be paid in British currency and earned in British-controlled factories and plantations. Meanwhile the plantation economies of the British Caribbean, of

much of Africa itself, and of many Pacific islands, were trapped in a boom-and-bust cycle that prevents a society from moving beyond poverty. This cycle characterizes those societies that function economically as the specialized exporters of raw commodities rather than of manufactured goods. Many societies are overly specialized in this way largely because of the activities of the traders and planners of the period of British overlordship.

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See also Africa, Colonial; British East India Company; Churchill, Winston; Decolonization; Elizabeth I; European Expansion; Fur Trade; Hudson’s Bay Company; Locke, John; Missionaries; Orientalism; Shaka Zulu; Victoria; Warfare—Europe; World War I; World War II

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Buddha

(TRADITIONALLY DATED C. 566–C. 486 BCE;
MORE PROBABLY C. 463–C. 383 BCE)

FOUNDER OF BUDDHISM

Buddha (Siddhartha Gautama) was born an Indian prince. His followers made him into a god, but in his lifetime he was much like other holy men of India. Buddha's influence increased as his devotees, seeking to live their lives in monasteries according to Buddha's example of wisdom and compassion, persuaded lay people to support them by donating land and other forms of wealth.

Siddhartha Gautama discovered and taught a path of liberation from suffering that has shaped the lives of Buddhists across the world for over two thousand years. He presented a vision of human existence that centers on wisdom and compassion, and he established monastic communities for both men and women in which intense meditation has been practiced for centuries. He advised kings and nobles on governing wisely and set forth precepts for lay people that continue to shape lives around the globe. For over two millennia, his life and teachings have had a profound impact on religion, culture, and history in central, eastern, and Southeast Asia; and since the nineteenth century many in Europe and the United States have been moved by his vision.

Siddhartha Gautama was born into a ruling family of the Sakya clan in present-day Nepal. The first written sources for his life, the texts of the Buddhist canon in the Pali language, come from long after his death and include legendary motifs, and so there is doubt about how reliable they are. At about the age of twenty-nine, he became dissatisfied with life at the court, saw that life as ordinarily lived is unsatisfactory, and embarked on a religious quest to find a way out of suffering. He studied with Hindu masters, but their wisdom and meditation practices did not provide

the answer he was seeking. Meditating in solitude, he underwent a transforming enlightenment at age thirty-five, and his followers acclaimed him as the Buddha, “the awakened one.” Because there are many Buddhas in the Buddhist tradition, Gautama is often referred to as Sakyamuni Buddha, the sage of the Sakya clan..

The Buddha expressed his insight in the Four Noble Truths, which are at the heart of Buddhist life and practice and are his central contribution. The First Noble Truth is that life as usually experienced is unsatisfactory because it is impermanent. All pleasures are transitory, leading to separation and suffering. The Second Noble Truth is that the unsatisfactory character of life arises from craving and grasping at impermanent objects and experiences, seeking lasting pleasure and security that these objects and experiences cannot provide. Ordinary life is marked by a fundamental illusion that there is a permanent, substantial self underlying our experiences. The Buddha taught that there is no such enduring self. All things, including humans, are composites of various factors that constantly change and that are profoundly interdependent. Whatever arises will cease to be.

The Third Noble Truth is the hopeful promise that there can be an end to the unsatisfactoriness of life through freedom from craving. This freedom is called *nibbana* in Pali or *nirvana* in Sanskrit. Nirvana, often translated as “extinction,” is not complete annihilation. Nirvana is the extinction of craving; it is sometimes compared to the blowing out of a candle. Since craving causes the unsatisfactoriness of life, the extinction of craving brings peace and happiness. Nirvana is also the end of ignorance and thus is identified as unconditioned, absolute truth, which brings wisdom and compassion and ends the cycle of craving, grasping and

We are shaped by our thoughts; we become what we think. When the mind is pure, joy follows like a shadow that never leaves. • **Buddha (c. 563–c. 483 BCE)**



Sculptural representations of the Buddha, such as this one from the Gandharan region of northern Pakistan (first century CE), varied as his iconic image moved from India to Central and East Asia. Musée Guimet, Paris.

illusion. Nirvana cannot be defined or comprehended in concepts; it is a religious state that must be experienced to be fully understood. The Buddha described it in negative terms as not born, not produced, and not conditioned. Nirvana manifests itself in the Four Noble Dwelling Places: the virtues of loving kindness, compassion, appreciative joy, and equanimity. The Fourth Noble Truth is the Eightfold Path, which presents a way of life that leads to nirvana. It consists of three stages. The first stage, wisdom, comprises right

understanding and right thought. The second stage is morality or ethical conduct and comprises right speech, right action, and right livelihood. The final stage is meditation and comprises right effort, right mindfulness, and right concentration.

Gautama challenged the social mores of his time by forming monastic communities in which all were equal, regardless of the class or caste they came from. Gautama may have been the first person in history to establish a monastic community for women. He taught a meditation practice that focuses on the direct experience of each moment, acknowledging sensations, emotions, and thoughts without grasping at pleasant moments or pushing away unpleasant experiences.

Gautama lived in northern India and Nepal. After his death, the Indian emperor Asoka (d. 232 BCE) promoted Buddhism throughout much of the Indian subcontinent and sent Buddhist missionaries to other parts of Asia, including present-day Sri Lanka, Kashmir, the Himalayas, present-day Myanmar (Burma), and the Greek kingdoms of Bactria in Central Asia. Through these efforts Buddhism began its growth as an international religion.

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See also Buddhism

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Buddhism

More than two millennia ago in India, Siddhartha Gautama became “the Buddha” and began to teach that one can only escape suffering and sorrow by living along a righteous path that ends with the extinction of desire and ignorance. The Buddha’s teachings lie at the core of what has become one of the world’s largest religions.

Buddhism is the world’s fourth-largest religion after Christianity, Islam, and Hinduism. Buddhism is approximately twenty-five hundred years old and has influenced cultures, events, and thought for generations. It is devoted to the improvement and eventual enlightenment of people, primarily through their own efforts.

The Indian philosopher Siddhartha Gautama founded Buddhism. The traditional dates of his life are 566 to 486 BCE, although recent studies suggest that Gautama was born as much as a century later. Gautama became known as “the Buddha” (the Enlightened One) after achieving enlightenment. He was born a prince of the Sakya clan in a small Indian kingdom in what is now Nepal. He had every luxury of the day and on the surface an apparently satisfying life. He married, had a son, and was destined to inherit his father’s kingdom. However, at the age of twenty-nine he became dissatisfied with his life of ease after being exposed to the true lot of humankind: suffering, old age, disease, and death. His father had protected him from these things because of a prophecy that Siddhartha would become either a great king or a great spiritual leader. His father’s hopes for a powerful successor were dashed when Siddhartha walked away from this life of ease and became an ascetic, a wandering holy man.

For six years he studied and learned from various gurus and holy men while depriving himself of all but the most meager nourishment. Siddhartha discovered that the extremes of self-deprivation were no better than the extremes of luxury and self-indulgence, so he sought the “Middle Way,” another name for Buddhism. Gautama found enlightenment while meditating under a *bodhi* tree. The Buddha achieved nirvana—the extinction of all desire and ignorance—and proceeded to teach others how to achieve the same state for the next forty-five years. Through discussions, parables, teaching, and living, the Buddha taught the “path of truth or righteousness” (Dhammapada). The scripture (*sutta*), “The Foundation of the Kingdom of Righteousness,” contains a succinct exposition of the major points that the Buddha taught.

Basic Beliefs

The Buddha preached “the Four Noble Truths” that define the existence of humankind: (1) Life is sorrow or suffering, (2) this suffering is caused by our selfish craving and desires, (3) we can remove sorrow by removing our desires, and (4) the removal of our desires is achieved by following the Noble Eightfold Path. The Noble Eightfold Path defines the “correct” behavior as right conduct, right effort, right speech, right views, right purpose or aspiration, right livelihood, right mindfulness, and right contemplation or meditation. The Buddha had few prohibitions but listed “five precepts” that good Buddhists should generally adhere to: not to kill, not to steal, not to lie, not to imbibe intoxicants, and not to be unchaste or unfaithful.



A Buddhist cemetery in Kyoto, Japan, in the late 1880s includes open pavilion shrines and sculptural figures.

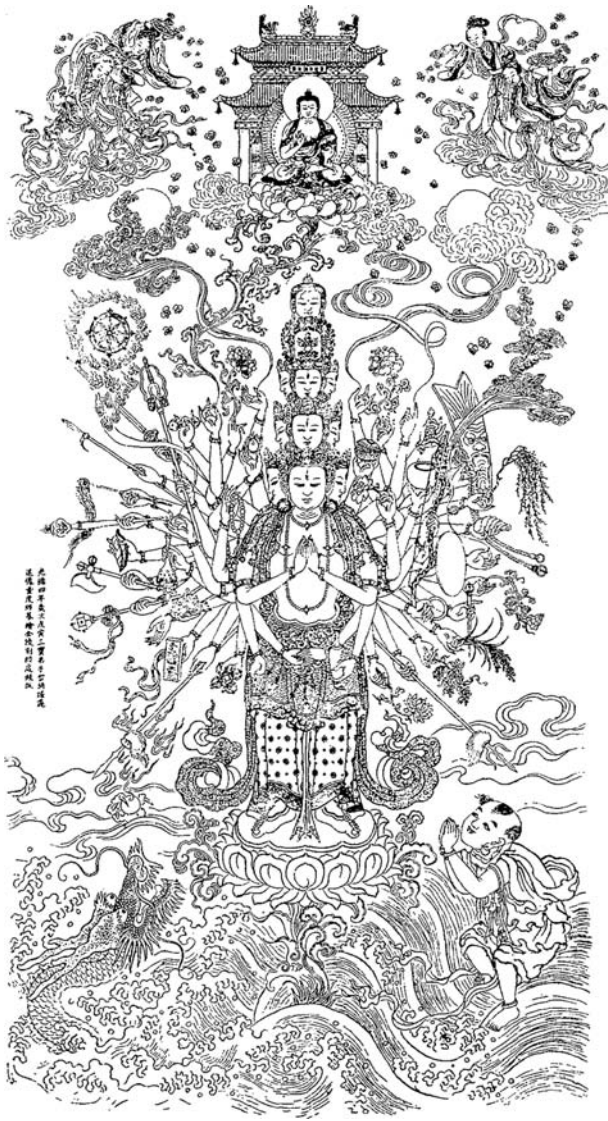
The Buddha taught that *skandas* (experiential data) create our existence from moment to moment and that only karma (the law of cause and effect) operates through our experience and is never lost. However, everything is changeable and impermanent. The Buddha made few concrete statements about the afterlife or the nature of “god”—realizing that the Middle Way can be taught but that each person must experience dharma—the realization of nirvana. His final admonition to his followers was to “work out your salvation with diligence” (*Buddhist suttas* 2000, 114).

After the Buddha—Growth in India

The Buddha was a practical teacher who knew that people need instruction, and he established the *sangha* (community of Buddhist monks and nuns) to carry on his work and the work of their own salvation. The Buddha instructed the *sangha* that it could change or delete any of the lesser rules after his passing if the *sangha* saw fit. Ultimately,

the Buddha urged his followers to be “a lamp unto themselves.” Buddhism provides a system that demonstrates where we err and how to correct our errors not by miracles but rather by hard work and contemplation.

One of the most noted people who helped to expand Buddhism was the Mauryan ruler Asoka, who ruled from 272 to 231 BCE. The Maurya Empire (c. 324–200 BCE) grew from the state of Magadha after the time of the Buddha and rapidly expanded after Alexander of Macedon invaded India in the 320s bce, creating the first really unified kingdom in India. Asoka became a convert to Buddhism and helped to expand it by providing for missionaries and monks, so that Buddhism became a world religion while Hinduism remained confined to India. He is often compared with Roman emperor Constantine in the West, whose conversion to Christianity in 312 CE helped that religion to grow. Inscriptions on pillars and rocks throughout Asoka’s realm encouraged the citizens of the empire to follow the dharma, limit the killing and cruelty



The Great Mandala of Japanese Nichiren Buddhism. This hanging paper scroll includes inscriptions in Chinese characters and medieval Sanskrit, as well as images of protective Buddhist deities and elements that represent Buddha's enlightenment.

to animals, and live a righteous life. Like Christianity, Buddhism may also have provided Asoka and the Mauryans with a code of conduct and a way to help manage, enlarge, and consolidate the empire. Buddhism also benefited from the patronage of a king who helped it to reach beyond the borders of India.

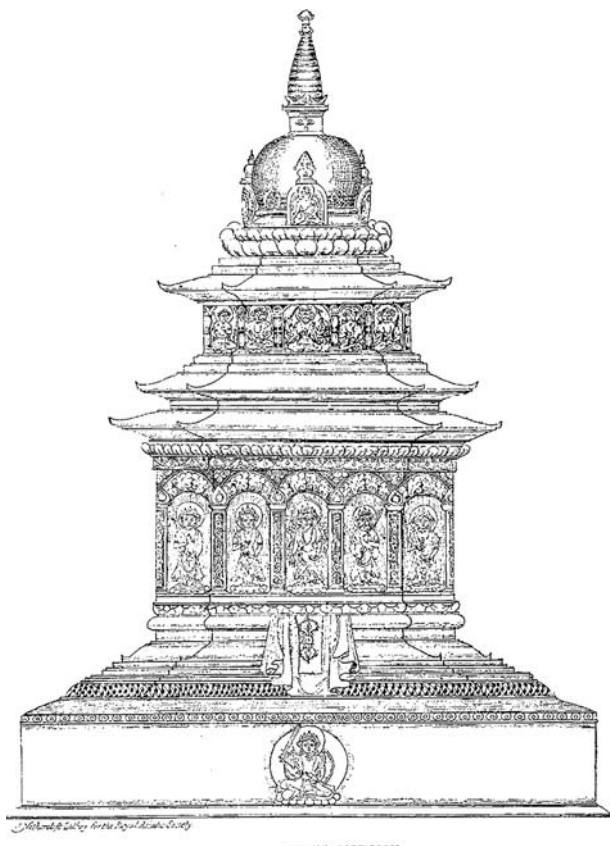
Theravada, Mahayana, and Vajrayana Sects

The Maha-Parinibbana Sutta (Book of the Great Decease) concerns the final days and death of the Buddha and is important because the Buddha did not consider himself to be a deity. It illustrates the relationship between the Buddha and Ananda, a cousin of the Buddha who was a disciple and his personal servant. A warm, trusting relationship between the two shines through the text. The first Council of Buddhism met to organize and retain the teachings of the Buddha several months after his death. The Buddhist Suttas, probably recorded by the first or second century BCE, is the canon of the Buddhist faith.

However, by the second and first centuries BCE Buddhism had already begun to diverge into schools of thought that evolved into the major sects of Theravada, Mahayana, and Vajrayana. The Theravada claimed to adhere closely to the original teachings of the Buddha and evolved along more monastic lines to spread through Southeast Asia to Sri Lanka, Myanmar (Burma), Thailand, and Cambodia. Theravada is also known as “Hinayana,” which means “lesser vehicle.” Mahayana (greater vehicle) Buddhism became the more adaptive Buddhism. With an emphasis on compassion and flexibility, it meshed with the cultures it encountered to spread to China, Korea, Japan, and Vietnam. Mahayanists also developed the idea of the bodhisattva (a being who compassionately refrains from entering nirvana in order to save others and is worshipped as a deity). Vajrayana (diamond vehicle) Buddhism is also known as “tantric Buddhism” and spread to Central Asia, primarily Tibet.

The Silk Roads and the Spread of Buddhism in Asia

A network of trade routes called the Silk Roads made travel possible from China to the Mediterranean and to India from about the second century CE to approximately the fifteenth century, connecting the world in ways it had not been before. Religions in particular found their way to new lands and different cultures



Buddhist shrines originated as stupas (burial mounds for Buddha's ashes and relics). In China the dome form elongated to become a pagoda with layers of relief sculpture depicting the events of Buddha's life.

via the Silk Roads. Buddhism originated in India and spread to the Kushan areas, part of what is today Pakistan and Afghanistan, by the first century CE. Buddhism developed a number of sects, built many monasteries, and became a consumer of many of the luxuries of the day, especially silk. Buddhist monasteries often provided solace for weary travelers, and Buddhist monks, nuns, and their devotees acquired massive quantities of silk for ceremonial functions. A symbiotic relationship existed whereby the growth of Buddhist monasteries increased demand for silk while also supporting its trade and movement.

The earliest schools of Buddhism to spread along the Silk Roads were the Mahasanghikas, Dharmaguptakas, and Sarvastivadins, eventually to be subsumed by the Mahayana sect. As Buddhism spread to

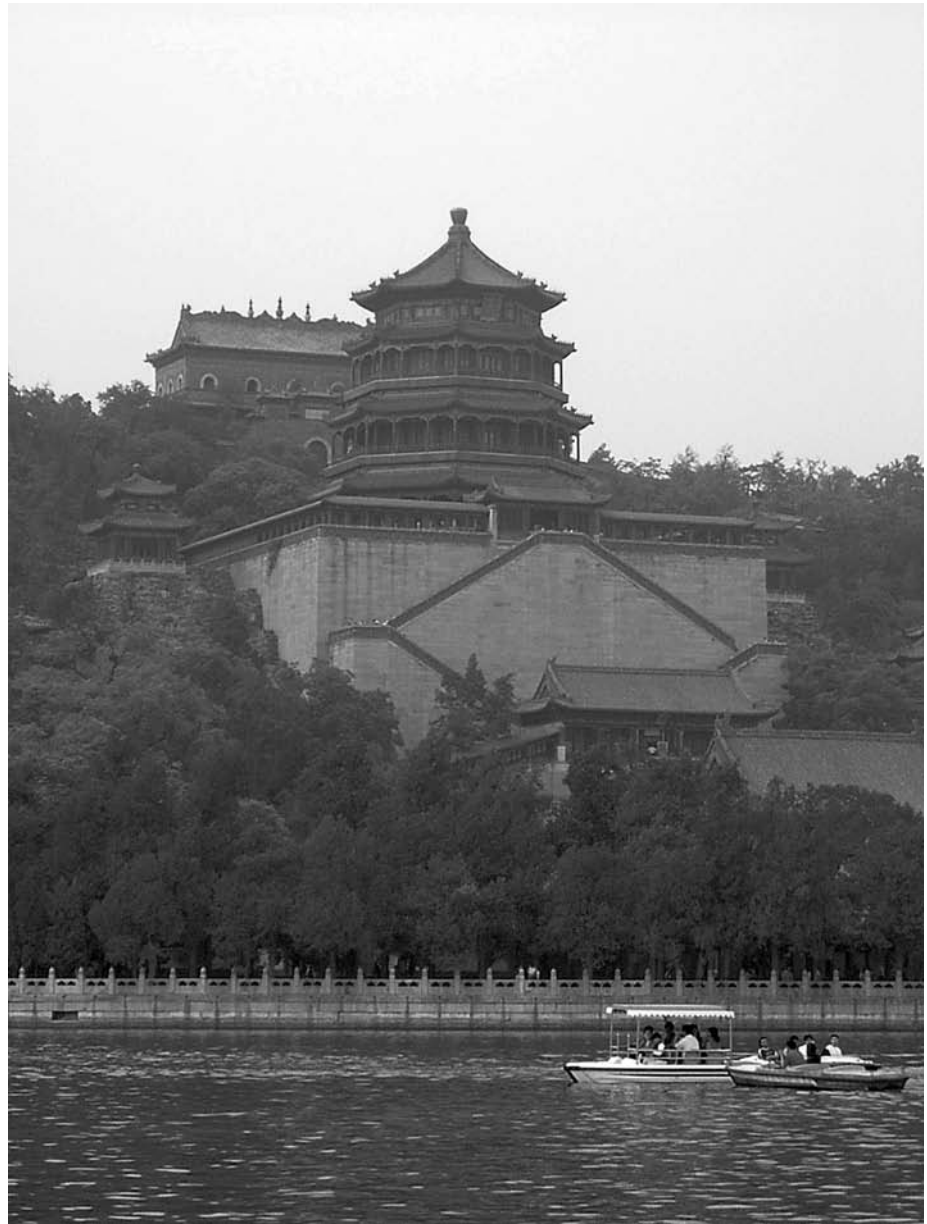
Central Asia and China, pilgrims began to seek the origins of Buddhism, visiting its holy sites and bringing home its sacred texts. The travels of fifty-four Buddhists, starting as early as 260 CE, are documented in Chinese sources.

Xuanzang, also known as Hsuan-tsang, was a Chinese Buddhist monk; like many others he sought a more in-depth understanding of his faith by seeking out original documents and visiting places where the faith began in India. Xuanzang began his 16,000-kilometer journey in 629 CE and returned in 645. As Xuanzang began his journey, the Tang dynasty (618–907 CE) emperor, Taizong, was beginning to restore China and make it a powerful force in Central Asia.

Xuanzang encountered Buddhist stupas (usually dome-shaped structures serving as Buddhist shrines) at Balkh and two large Buddhist figures at Bamian in Afghanistan. Although many areas of former Buddhist expansion were in decline, Xuanzang found in Kashmir one hundred Buddhist monasteries and five thousand monks. Welcomed in India at Nalanda by thousands, Xuanzang found a place of intellectual ferment. Cave paintings at Dunhuang record the triumphant passage of Xuanzang back to China; Xuanzang finished *The Record of the Western Regions* in 646 to document his journey. Gaozong, Taizong's son and successor, built the Big Wild Goose Pagoda at Xuanzang's urging to house relics and Buddhist scriptures.

A chaotic period of religious exchange and development began with the rise of the Mongols during the 1100s and 1200s. The Silk Roads' pivotal role in cultural and religious exchange eventually declined with the advent of the Age of Exploration during the fifteenth and sixteenth centuries. Additionally, Muslim control of long-distance trade routes helped to enhance the Islamization of Central Asia. Central Asian peoples apparently therefore accommodated themselves to those people who were the major participants in their trade connections. Trade led to cultural exchange; thus trade was an important factor in spreading the world's great religions.

Chinese emperors worshipped at this great Buddhist temple when they retreated to Beijing's Summer Palace during the hottest months.



Buddhism in China and Japan

Buddhism, Christianity, and Islam spread in various areas, but to truly make a home in foreign lands these faiths often accommodated themselves to the local culture and modified or even changed some of their values or traditions. In China Buddhists spreading the faith emphasized the compassionate aspects of the faith rather than the disciplined

aspects of Theravada Buddhism, and Nestorian Christians used Daoist (relating to a religion developed from Daoist philosophy and folk and Buddhist religion) or Buddhist terms, calling the books of the Bible “sutras” (precepts summarizing Vedic teaching).

Buddhism reached China by the first century CE, and a number of Mahayana sects developed there, including Tiantai, Huayan, Pure Land, and Chan.



Pure Land developed as a way to reach the general population without its members having to grasp all the intricate philosophical teachings of Buddhism. Followers of Pure Land simply were to call or chant

the name of Amitabha Buddha for salvation in paradise or the Pure Land.

The Indian monk Bodhidharma is reputed to have brought Chan Buddhism to China during the sixth

Religion is to mysticism what popularization is to science.

• **Henri Bergson (1859–1941)**

century CE. The word *Chan* (*Zen* in Japanese) derives from the Sanskrit word *dhyana* and means “meditation,” so Chan is meditation Buddhism. Towering figures such as Huineng (638–713) and Zhaozhou (778–897) strengthened Chan so that by the ninth century major schools of Chan called “Linji” and “Caodong” had developed and would later be exported to Japan as the Zen sects of Rinzai and Soto.

Buddhism had already arrived in Japan from China and Korea during the 500s CE. During the Kamakura period of Japanese history, from 1185 to 1333, Buddhism experienced dramatic growth and reinvigoration. Energetic and charismatic figures such as Nichiren (1222–1282) founded new sects. The medieval period has been characterized as one of the most religious times in Japanese history.

Buddhism had evolved in China to the point that, during the Southern Song dynasty (1127–1279), Chan or Zen dominated Buddhist teachings. Scholars usually credit Myozen Eisai (1141–1215) for introducing Rinzai Zen and Dogen Kigen (1200–1253) for introducing Soto Zen. The Rinzai sect emphasizes *koan* (spiritual exercise) as its prime tool for achieving understanding and enlightenment, whereas the Soto sect emphasizes *zazen* (sitting meditation). Both Eisai and Dogen studied in China under Chan masters, receiving recognition of their enlightenment—an official document of lineage is important in Zen and helps to provide credentials to teach upon one’s return home. During the twentieth century, appreciation of Dogen’s work grew, and today Dogen is perceived as one of Japan’s greatest geniuses and the most noted Zen figure in Japan.

With the influx of Chinese masters during the 1200s and 1300s, Japanese Zen more closely resembled its Chinese Chan counterpart. In fact, the Five Mountains system of temple organization, which arose during the late 1300s, was based on the Chinese model. The ironic aspect of Zen growth is that Zen had few real practitioners. Its primary role initially was transmitting Chinese culture to Japan. The Japanese and Chinese masters achieved influence and success because of their access to Chinese culture during the Song dynasty (960–1279).

Buddhism and the West

Much of the early Western exposure to Buddhism came through the Japanese. Eight people, including three Buddhist priests, represented Japanese Buddhism at the World Parliament of Religions in 1893, held in Chicago. The writings of D. T. Suzuki helped to open Western eyes to Buddhism and began to popularize Zen Buddhism. During the last half of the twentieth century, new patterns of immigration and many U.S. and European citizens who turned to non-Western faiths helped Islam, Buddhism, Hinduism, Confucianism, and Daoism have an impact on Western culture. Older and recent emigrants from Asia—Chinese, Koreans, Vietnamese, and Tibetans—have played a large role in establishing a Buddhist foothold in the West and exposing Westerners (Euro-Americans) to the traditions of Asia.

Buddhism’s rise in the United States can be attributed to people’s search for answers and the rapid changes brought about by a modern and consumer-driven society. Buddhism’s rise is also because of dedicated teachers, such as Sylvia Boorstein, Chogyam Trungpa, and Jon Kabat-Zinn, who have helped to popularize the faith. The Vietnamese monk Thich Nhat Hanh has had an important influence on U.S. Buddhism. The Dalai Lama (the spiritual head of Tibetan Buddhism) also has promoted a more engaged Buddhism with his pleas for Tibetan freedom from China. The Tibetan diaspora (scattering) has opened up access to teachers and lamas (monks) who, until the Chinese occupied Tibet in 1959, were little known outside their own country. The Dalai Lama himself has come to symbolize for many the face of Buddhism shown to the world. His character and compassion in the face of difficulties for his own people exemplify for many the best attributes of the Buddhist life.

Shunryu Suzuki was a Japanese Zen priest who came to the United States in 1959 and settled at a small temple in San Francisco. He is credited with establishing the first Zen monastery in the United States at Tassajara, California, in 1967. *The Three Pillars*

of Zen (1965) by Philip Kapleau was one of the first books in English that discussed the practice of Zen Buddhism. The book has had an impact far beyond the students of Kapleau because many people in the United States lacked access to a Buddhist teacher but were shown how to begin meditating and practice on their own by Kapleau's book. Much of the Buddhist faith in Asia is centered on the *sangha*, whereas in the United States no real *sangha* exists.

Buddhism and Change

Buddhism flowered in the West during the last three decades of the twentieth century, and Zen became a cottage industry. What attracted Westerners, particularly well-educated and professional people, to the faith? The beliefs of Buddhism "are more compatible with a secular scientific worldview than those of the more established Western religions" (Coleman 2001, 205).

In a world that grows smaller each day, the Internet has provided a link to the Buddhist communities of the world and has begun to house the vast amount of Buddhist scriptural writing. The Internet may hold hope for many who practice alone or who are in ill health to have access to qualified teachers. Nonetheless, Buddhism is uniquely suited to isolated practice and meditation. Whether Buddhism will continue to broaden its appeal in the West is difficult to say. Even in Asia monasteries and monkhood are difficult choices in an ever-broadening world consumer culture. Buddhism, like many of the great faiths of the world, has found ways to adapt and survive for centuries. Buddhism continues as a way, the Middle Way, to work toward peace, compassion, and enlightenment. Yet, we have only to look back to the Buddha's own words to find the future of Buddhism. The Buddha said that the only really permanent thing in this world is change.

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See also Buddha

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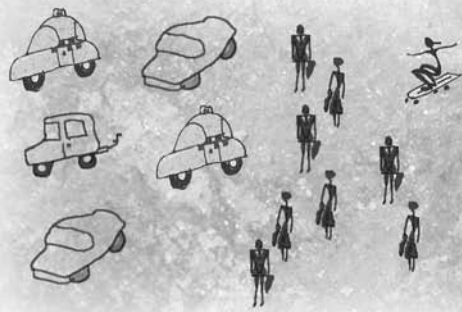


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Byzantine Empire

Historians debate whether the Eastern Roman Empire became the Byzantine Empire in the fourth or the sixth century CE, but the Christian civilization based at Constantinople (now Istanbul) became a major power of Europe and an important connection between the West and East. Even after its conquest by the Ottoman Turks, Byzantium's cultural influence endured.

The Byzantine Empire was a Christian, Greek-speaking, multiethnic continuation of the Eastern Roman Empire, and, as an entity that developed organically out of the Roman Empire and its ancient Mediterranean civilization, it has no clear starting point. Many date its origins to the year 330 CE, when Emperor Constantine I (the Great) established his new imperial capital, Constantinople (modern Istanbul), on the site of an ancient Greek city known as Byzantium (*Byzantium* in Latin). Others favor the mid-sixth century during the reign of Justinian I the Great (reigned 527–565 CE), the last emperor of Constantinople to speak Latin as his native tongue, who presided over Byzantium's First Golden Age and whose policies dominated much of Byzantium's subsequent history, for good and ill. Still others argue that the Byzantine Empire only emerged as a distinctive civilization and empire after the Arab conquests of the seventh century ended classical Greco-Roman civilization in the eastern Mediterranean and North Africa.

Whatever its point of origin, the Byzantine Empire ended on 29 May 1453, when Ottoman Turkish forces captured Constantinople, the last, small remnant of a once-vast empire. Even this event, however, did not snuff out Byzantine culture, which continued to inspire various Eastern Orthodox Christian peoples, most

notably Greeks, Russians, Ukrainians, Romanians (Rumanians), Bulgarians, and Serbs. In addition, Byzantine influences on Ottoman culture, especially that of the court of the sultan, were significant.

The term *Byzantine* is modern, coined by historians to underscore the distinctive qualities of the civilization centered in Constantinople that emerged sometime between the fourth and seventh centuries of the Common Era. The Byzantines always referred to themselves as *Romaioi*, Romans, and viewed their capital city as New Rome.

Constantinople

Located on the Bosphorus, a short, narrow strait that separates Anatolia from Thrace (the far southeastern corner of Europe) and connects the Sea of Marmara with the Black Sea, Constantinople was ideally situated. The city was the natural meeting place of East and West, which was a major factor in Constantinople's early growth in population and wealth. The city possibly housed as many as 500,000 people at its demographic high point in the early sixth century before a series of plagues beginning in 542 caused a downward spiral in population, from which it never fully recovered.

Its location and riches also made it one of the most besieged cities in the history of the world. Its massive triple land walls and superior harbor allowed it to resist the attacks of Goths, Huns, Persians, Avars, Slavs, Arabs, Magyars, Bulgars, Pechenegs, Vikings, Rus', Seljuk Turks, European crusaders, and a wide variety of other peoples. Only on two occasions, in 1204 and 1453, did Constantinople fall to the assault of a foreign army.



The domed plan of the sixth-century Hagia Sophia in Constantinople (modern Istanbul) provided symbolically soaring interior spaces for worship. Ottoman Turks added the minarets after 1453.

The Empire's Boundaries

Due to the vicissitudes of history, the boundaries of the empire were in constant flux. At their greatest extent under Justinian the Great in the mid-sixth century, Byzantine lands included Italy, Sicily, North Africa, and southeastern Spain, as well as Syria-Palestine, Egypt, the Balkans as far north as the Danube, and Anatolia (modern Asiatic Turkey) as far east as Armenia. The rise and expansion of Islam in the seventh century resulted in Byzantium's losing Syria-Palestine, Egypt, and North Africa. Earlier it had lost its foothold in Spain and most of Italy to Germanic forces, and in the ninth century

Byzantium lost Sicily to Arab invaders from North Africa. In 1071 its last Italian outpost, Bari, fell to Norman French invaders, but only after Byzantine civilization had left a permanent imprint on the culture of southern Italy. Because of Byzantium's long presence in southern Italy, knowledge of Greek and study of Greek texts never totally vanished in the West during the so-called Middle Ages.

Despite these territorial losses, the empire remained a major power in the Eastern Mediterranean down to around the year 1200 because it held on to much of its heartland—the Balkans, Greece and the Aegean Islands, and Anatolia—despite invasions by hostile neighbors, including the Bulgars and Normans in the

Balkans and Seljuk Turks in Anatolia. This territorial core made it an empire that continued to straddle portions of Europe and Asia. Byzantine merchant vessels and war ships were equally at home on the Mediterranean and the Black seas, and the trading emporiums of North Africa, western Europe, Inner Asia, and Southwest Asia, were all within easy reach.

After 1204, however, the empire's heartland began to shrink appreciably due to conquests by western Europeans and Ottoman Turks. By the year 1400 the empire was a shadow of its former self.

God-Anointed Emperors

As successors of Constantine the Great (reigned 306–337 CE), the first Christian Roman emperor, Byzantine emperors claimed the title “equal of the apostles” and saw themselves as responsible for the well-being of all Christians, not just those who inhabited lands controlled directly by the empire. Consequently, Byzantine foreign policy, both in respect to Christian and non-Christian powers alike, was aimed at securing acknowledgment of the emperor’s position as head of the Christian world and protector of all Christians, no matter where they might reside.

As defenders of the orthodox (i.e., correctly believed) faith and Roman legitimacy, Byzantium's emperors normally pursued defensive military and territorial policies. Much like China's emperors, territorial expansion was usually far less important to those who sat on the Byzantine throne than acknowledgment by their neighbors of the emperor's unique place in the world. Although the empire had a few notable military emperors, such as Basil II, who aggressively expanded Byzantium's borders, its leaders, also like their Chinese counterparts, mainly employed military action as a last resort, preferring the tactics of bribery, diplomatic marriages, and awe-inspiring court ceremony to neutralize potential and real enemies.

Byzantium and Its Neighbors

As an empire that sat astride a web of land routes and sea routes connecting much of the Afro-Eurasian

world, the Byzantine Empire employed in its service large numbers of foreigners, both Christian and non-Christian. Mercenaries from a wide variety of Turkic and western European cultures played key roles in Byzantium's armies.

Although generally conservative in exercising military power, Byzantium's emperors had a sense of mission when it came to spreading the faith peacefully among their pagan neighbors. Indeed, exporting missionaries to the Slavic peoples of the Balkans and Russia was an integral part of Byzantine foreign policy in the ninth and tenth centuries. At the same time these same emperors showed no particular desire to convert Zoroastrians in the Sasanian Empire of Persia or Muslims, who in the mid-seventh century replaced the Sasanians as Byzantium's greatest rival.

Holy war, either in defense of the faith or to spread it, was also a concept largely absent from the Byzantine mind. There were two notable exceptions to this Byzantine distaste for holy war. During the reign of Heraclius (reigned 610–641 CE), a life-or-death struggle with the Sasanian Empire, whose armies had sacked Jerusalem and carried off the relic of the True Cross, assumed the proportions of a holy war. Following the capture of Constantinople in 1204 by the army of the Fourth Crusade, a Byzantine Empire-in-exile at Nicaea in Anatolia fostered the notion of holy war to recapture the sacred city of Constantinople, until finally the city was retaken in 1261.

Byzantine Cultural Exports

Constantinople was a city of numerous churches, including the massive Hagia Sophia, the Church of the Holy Wisdom. Built between 532 and 537 CE, it and its slightly earlier prototype, the Church of Saints Sergius and Bacchus (the present-day Kûçũkayasofya Mosque), signaled the genesis of a new form of ecclesiastical architecture—the Byzantine domed church—that proliferated throughout the empire and beyond. During Byzantium’s First Golden Age of the sixth century, the five-domed Church of the

The monogram of Emperor Justinian I (r. 527–565) is part of an elaborate and ornate design on the column capitals inside the Church of Saints Bacchus and Sergius, Constantinople.



Holy Apostles was raised on Constantinople's highest hill. The burial place of emperors, it served as the model for the five-domed basilica of San Marco in Venice and numerous Slavic Orthodox churches in Eastern Europe.

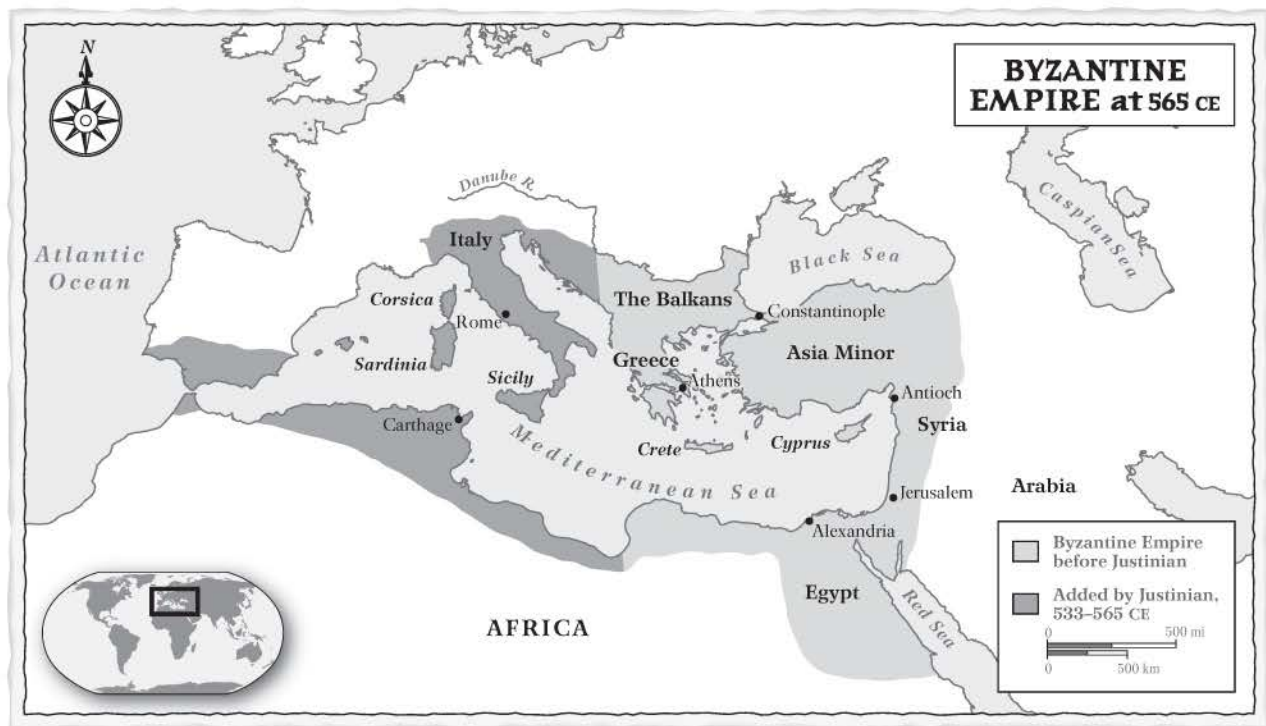
In addition to architecture on a grand scale, Constantinople (as well as other major Byzantine cities, such as Thessaloniki) was also a center of ancient Hellenic and Christian studies. Secular Hellenic literature, philosophy, and science—including the study of the works of Homer, Plato, and Euclid—provided the core of an upper class Byzantine's education. But the Byzantines did not keep this learning to themselves.

Byzantium's preservation of many of the classic literary and philosophical texts of ancient Greece, especially the *Dialogues* of Plato, made possible their direct transmission to the West in the fourteenth and fifteenth centuries, where they were avidly studied by Italian humanist scholars. Earlier, during the ninth century, Caliph al-Mu'tasim established the House of Wisdom in Baghdad, where Byzantines and Muslims cooperated in translating into Arabic a vast body of

ancient Greek scientific knowledge, especially treatises on medicine and other "practical" sciences, such as mathematics, geography, and astronomy. These texts, which traveled from the schools of Byzantium to Baghdad, had a profound impact throughout the Islamic world. And it was largely from Muslim Spain, al-Andalus, that the works of Aristotle and Galen entered Christian western Europe during the twelfth century. These texts, preserved by Byzantium, translated into Arabic, and then translated into Latin, were key factors in an intellectual and educational revolution that some label "Europe's Twelfth-Century Renaissance."

During the ninth and tenth centuries, as Byzantine secular learning was permeating the intellectual world of Dar al-Islam, Byzantine Christian studies were transforming the cultures of many Slavic peoples.

During the 860s CE the brothers Constantine (also called Cyril) and Methodius worked as missionaries in Moravia and translated the gospels and a wide variety of other church literature from Greek into Slavic. Whereas the Western Church, with its center in Rome, imposed the Latin liturgy and Latin



ecclesiastical scholarship on all of its converts, the Byzantine Church allowed converts from other cultures to retain their own languages in the liturgy and to read religious texts in their own tongues. With that in mind, Constantine-Cyril created a Slavic alphabet, which he based on the Greek alphabet but modified to accommodate particular Slavic sounds. As reworked later by disciples of the two brothers, it became the Cyrillic alphabet.

Beyond creating an alphabet, Constantine-Cyril was also instrumental in crafting a Slavic sacred language—Old Church Slavonic—that he based on a southern Macedonian dialect. Because the brothers and their associates translated the Bible and a huge volume of other religious literature into Old Church Slavonic, it rapidly became an ecumenical language, which all Orthodox Slavic churchmen, regardless of their regional dialects, learned and used. Beyond that, it rapidly became a flexible literary tool. Original works, such as the life of Saint Constantine-Cyril and monastic chronicles, soon appeared alongside imported religious texts.

Laying Byzantium's Foundations (324–476 CE)

In 324 Constantine I, Roman emperor of the West and a champion of Christianity, defeated and killed his pagan imperial colleague, Licinius, Roman emperor of the East. Now, for the first time since 293, the Roman Empire was united under a single ruler. In honor of his victory, Constantine ordered that Byzantium be expanded and rededicated as Constantinople (Constantine's City). Dedicated on 11 May 330, the city served as Constantine's residence until his death in 337.

During these latter years of his life, Constantine established the principle that the Church enjoyed the legitimacy of imperial authority and its doctrines carried the force of imperial law. All of Constantine's successors were baptized Christians, even Julian (reigned 361–363), named “the Apostate,” who renounced the faith and unsuccessfully tried to restore the ancient pagan civic cults. By the reign of Theodosius I (reigned 378–395), the last Roman emperor to rule over both halves of the empire, the marriage between



The monogram of Empress Theodora, Justinian's wife, appears only (but clearly) on the exterior of the Church of Saints Bacchus and Sergius.

church and state was complete. In 391 Theodosius promulgated a series of edicts against paganism that transformed Christianity into the sole state religion.

Meanwhile, during the last quarter of the fourth century, Goths and other Germans were crossing the Roman Empire's frontiers in increasing numbers. Although they had no intention of destroying it, their cumulative impact led to the breakdown of the imperial system in the western half of the empire, which had had its own Roman emperors since 395. When the last Western Roman emperor, Romulus Augustulus, was deposed in 476, the theory was that the empire was again reunited under a single emperor, Zeno, who resided at Constantinople. In fact the West was fast becoming a mosaic of independent Germanic

kingdoms, and its culture was already beginning to undergo a process of radical transformation.

While the West was undergoing invasion and metamorphosis, the Eastern Roman Empire, which largely managed to deflect the Germans westward, was unable to help it in any substantive way due to its own instability and internal divisions, many of which were religious in nature.

Rebuilding and Defending Byzantium (518–641 CE)

At this juncture the vigorous Justinian the Great (reigned 527–565 CE) emerged, first as chief counselor to his uncle, Justin I, then as emperor in his own right.



Justinian's administrative reforms reinvigorated the empire, but costly wars, a Mediterranean-wide plague that killed off up to one-half of the empire's population, and new invasions by Germanic Lombards in Italy and Slavs and Turkic Avars in the Balkans unraveled many of his gains. Despite setbacks, Justinian presided over an era of artistic creativity and political retrenchment. During his reign a massive rebuilding program changed the face of Constantinople.

In 603 CE the Sasanian Persian Empire struck hard in the East and by 622–623 seemed on the verge of conquering the whole Eastern Roman Empire. A counterattack led by Emperor Heraclius, however, carried the fight to the enemy, and in 628 Heraclius forced a favorable peace treaty on the defeated and disorganized Persians. In a sense, however, both sides lost, exhausted as they were by the protracted and bitter war.

Eastern Roman weakness made it possible for pagan Slavs to penetrate ever more deeply and fully into the Balkans. Equally menacing were attacks from out of Arabia by a new force, the armies of Islam, which invaded Syria-Palestine in 633–634. Jerusalem fell in 638, and by 641, the year of Heraclius's death, most of Egypt had also been lost.

Byzantium under Siege (641–718 CE)

The seventh century arguably witnessed the birth of a full-fledged Byzantine civilization, but also it was a period in which Byzantium struggled to survive. By 651 the Arabs had overrun Sasanian Persia; it is a wonder that they failed to conquer all of the Eastern Roman Empire. In 673 Arab forces initiated a siege of Constantinople that the Byzantines only broke in 677, thanks to a new weapon known as "Greek fire," an incendiary mixture of naphtha and pitch that was projected onto enemy vessels and troops. In 717 the Arabs returned with an immense army and navy but were driven back the following year. Between these two sieges a new hostile force appeared in the Balkans. The Bulgars, a warlike pagan people out of Central Asia, moved into northern Thrace, from which they could not be dislodged. The Bulgarian kingdom

would continue to be a threat to Byzantium for centuries thereafter, even after the Bulgars were converted to Orthodox Christianity in the ninth century.

The Iconoclastic Controversy (726–843 CE)

Like many other Byzantine emperors, Leo III (reigned 717–741), who led Constantinople's successful defense against the Arabs, fashioned himself a theologian. In 726 or 730 he instituted a policy of *Iconoclasm*, or image breaking, which prohibited the production, display, and veneration of icons, namely sacred images of God or the saints. Although unpopular among the masses, it was official church teaching and practice until the empress-regent Irene reversed it in 787. Leo V reinstituted the ban on icons in 815, but Empress-Regent Theodora suppressed Iconoclasm for good in 843.

Although eventually rejected as doctrine, Iconoclasm underscored the widening gap between Byzantium and the Church of Rome, most of whose popes were avid defenders of icon veneration. Moreover, in the middle of the eighth century, amidst the "Iconoclastic Controversy," the papacy turned to a family of Frankish warriors in its search for new defenders. From this family, the Carolingians, came Charlemagne (Charles the Great), whom Pope Leo III crowned Roman emperor on Christmas Day, 800. With its rival Roman emperor, the Latin West was rapidly moving away from its Greek coreligionists in the East.

The Macedonian Dynasty (867–1025 CE)

With the accession of Basil I (reigned 867–886), Byzantium acquired one of its longest surviving and most successful dynasties, a family of Armenian descent known as the Macedonians, under whom the empire enjoyed a Second Golden Age of territorial expansion, prosperity, and artistic innovation.

Under Basil II (reigned 976–1025), known as "the Bulgar-Slayer" because of his conquest of Bulgaria, the empire reached its apogee of prestige and power.

A late-Roman mosaic from the Bucoleon Palace, Constantinople.



The Black Sea was a virtual Byzantine lake, and no other empire in western Eurasia—the Abbasids of Baghdad, the Fatimids of Egypt, or the Ottonians of Germany—could rival it.

Seljuks and Crusaders (1071–1204)

On 26 August 1071, a new power in Islam, the Seljuk Turks, destroyed a Byzantine army at Manzikert in eastern Anatolia and captured Emperor Romanus IV. Although Sultan Alp Arslan released Romanus under generous terms, the defeat at Manzikert signaled a crisis. In early 1095 the threat of losing Anatolia to the Seljuks induced Emperor Alexius I (reigned 1081–1118) to request that Pope Urban II induce Western warriors to enlist in Byzantium's armies. The pope responded by transforming this request for mercenaries into a holy war fought by armies independent of Byzantine control and aimed at simultaneously aiding Eastern Christians and liberating Jerusalem. The result was the First Crusade (1096–1102).

Armies of the First Crusade managed to capture Jerusalem in 1099 and established four crusader states in the lands of Syria-Palestine. However, the transit of crusader armies across Byzantine territory, with the conflicts that resulted, as well as the establishment of the crusader states, fomented distrust among Byzantines, especially their emperors,

regarding Western motives. Throughout the twelfth century, but especially during the Second (1147–1149) and Third (1188–1192) Crusades, Byzantium's emperors pursued a policy of working to weaken crusader forces that crossed their lands, lest they threaten the integrity of Constantinople. This policy of self-preservation was perceived in the West as evidence of Byzantine perfidy and pro-Muslim sentiments.

Growing distrust of Byzantines, however, did not precipitate the capture of Constantinople on 13 April 1204 by the army of the Fourth Crusade. The factors that led to that capture were complex and largely unforeseen. Mutual animosity engendered by over a century of crusading, however, contributed to the armed clashes that ended in the crusaders' assault on and sack of the city.

The Latin Empire of Constantinople (1204–1261)

The crusader conquerors of Constantinople established a fragile empire that lasted from 1204 to 1261 and encompassed the capital city and much of Greece and the Aegean Islands. Meanwhile, several Byzantine empires-in-exile claimed the mantle of imperial legitimacy, with the most important being located at Nicaea in Anatolia.

Christ, Ruler of the World, a mosaic in the church of Hagia Sophia, was created about a century after the Eastern Byzantine and Western Roman Catholic churches split in 1085.



In July 1261 Byzantine forces from Nicaea reoccupied Constantinople, which had been left undefended, and a month later Emperor Michael VIII entered the city in triumph. The victory was less meaningful than it appeared. Portions of Greece and the Aegean Islands remained in Western hands. Worse, the events of 1204 had destroyed the myth of Constantinople's invincibility and shattered a civilization.

Borrowed Time (1261–1453)

A severely weakened Byzantine Empire barely managed to escape the machinations of Charles of Anjou, king of Sicily, prince of Achaea (southern Greece), and nominal king of Jerusalem. Charles had his eyes on Constantinople as the capital of a grand Mediterranean Empire. Circumstances, including his death in 1285, combined to defeat him and save Byzantium.

The Byzantines, however, could not avoid the relentless pressure of a new Turkish foe: the Ottomans. Around 1300 the Ottomans began to expand out from

northwestern Anatolia. By 1400 they had conquered all of Anatolia and most of the Balkans, effectively isolating Constantinople. Byzantium, however, received a half-century-long reprieve when the Muslim army of Timur i Leng (Tamerlane) crushed Ottoman forces at Ankara in 1402, forcing the Ottomans to abandon their blockade of Constantinople. It took the Ottomans two decades to recover from the disaster.

In 1451 the nineteen-year-old Mehmed II succeeded to the sultanate with plans to take Constantinople. After choking off the city from access to the Black Sea, his forces initiated their attack on 6 April 1453 and breached the city's walls on 29 May. Eleven centuries after Constantine the Great, the last emperor of Byzantium, Constantine XI, died in the fighting, and his body was never identified.

An empire had fallen, but the culture of Byzantium lived on.

Alfred J. ANDREA

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See also Constantine the Great; Crusades, The; Justinian I

True contentment depends not upon what we have; a tub was large enough for Diogenes, but a world was too little for Alexander. • **Charles Caleb Colton (1780–1832)**

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chat

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Caesar, Augustus

(63 BCE–14 CE)

FIRST ROMAN EMPEROR

Gaius Octavius, the grandnephew and heir of Julius Caesar, assumed a position of power in Rome after Julius's death in 44 BCE. In 27 BCE he became ruler of the Roman Empire and was given the title "Augustus." He led the empire to its height, expanding its boundaries and introducing an era of peace and prosperity that lasted nearly two hundred years.

Augustus Caesar was born as Gaius Octavius in 63 BCE. His father had been governor of Macedonia; his mother was Julius Caesar's (100–44 BCE) niece. The young Gaius became Caesar's protégé, adopted son and heir, and his eventual successor. The newly named Augustus Caesar was deemed a ruthless leader but never a tyrant. He instituted reforms that brought prosperity and peace to the Roman Empire. He supported a building program in Rome that turned a city of brick, as he proudly declared, into a city of marble. He reigned for forty-four years and is considered one of history's most successful rulers.

Julius Caesar had been training Octavius, an astute and calculating soldier even in his teens, to be one of his major commanders; when Caesar was murdered in Rome on 15 March 44 BCE, the eighteen-year-old Octavius, who was commanding troops in Dalmatia, immediately returned to Rome. There he reluctantly joined forces with Mark Antony, Caesar's trusted friend, considered by many to be Caesar's obvious heir. But Octavius garnered influence with his position as Caesar's adopted son, and in 43 BCE he joined with Antony and (Marcus) Aemilius Lepidus (d. 12 or 13 BCE) in the Second Triumvirate. They declared Julius Caesar a god, eliminated several

thousand enemies in various battles and coups, and in 42 BCE defeated the primary murderers of Caesar—Marcus Junius Brutus (85–42 BCE) and Gaius Cassius Longinus (d. 42 BCE)—at Philippi in Macedonia.

By 36 BCE the Triumvirate was falling apart. Lepidus withdrew, and Octavius used Antony's alliance with Queen Cleopatra of Egypt as an excuse to turn on him, defeating him at the naval battle of Actium off the west coast of Greece in 31 BCE. Antony and Cleopatra fled to Alexandria and committed suicide the following year.

Now in complete charge of Rome, Octavius began to consolidate his power, carefully remaining within the structural limitations of the republic. He assumed power over Roman provinces, took the position of consul, and was given the title "Augustus," a religious term that implied powers beyond those of mere mortals. Later he was declared "pater patriae," or father of his country. Although he accepted the title "Imperator," this signified only control over the army and was not the title of emperor often mistakenly associated with him.

Augustus, as he is generally known, moved to consolidate many of Julius Caesar's reforms. He settled thousands of veterans in the provinces, paying the owners of the land with treasure looted from Egypt. To forestall any moves by ambitious generals, he assumed and maintained a position as commander of all military forces. Although the Senate and other republican components of Roman government remained intact, Augustus was emperor in all but name.

After the upheavals of several civil wars, the Romans wanted peace, and Augustus gave it to them. He granted significant autonomy to



A drawing of Augustus Caesar from 1797. The title “Augustus” implies power beyond that of a mere mortal.

provincial governors, reformed the Roman economy and tax structure, and began a period of peace and prosperity known as the Pax Romana. He became extremely popular throughout the empire and many statues were erected in his honor. Though Augustus was skeptical of too much expansion of the empire, he did spread Roman influence into central Europe and added more territory to the empire than any other Roman leader.

One of the most significant battles in history occurred during his reign. In 9 CE, the Roman governor Quintilius Varus was ambushed in the Teutoburg Forest in Germany and lost three legions. Unable to respond adequately, Rome lost any chance of gaining a hold in that region. According to the Roman

historian Suetonius (69/75–c. 130 CE) Augustus “took the disaster so deeply to heart that he left his hair and beard untrimmed for months; he would often beat his head on a door, shouting: ‘Quintilius Varus, give me back my legions!’ [Quintili Vare, legiones redde!], and he always kept the anniversary as a day of deep mourning.”

The failure to expand Roman civilization into Germany, as it had been expanded into Gaul, has had profound implications to this day. Roman culture, law, government, and language dominated the development of the western part of Europe, while the Germanic portion of Europe developed along quite different lines, more heavily influenced by the “barbarians” of the East.

The Pax Romana ushered in a golden age for Rome that would last for two hundred years. This was the age of Rome’s greatest poet, Virgil (70–19 BCE), whose most famous work, the *Aeneid*, is both the story of the aftermath of the Trojan War and a treatise on the Roman Republic. Other important writers included Horace, Ovid, Pollio, and Livy. The period also saw many architectural triumphs, some of which survive to this day. Augustus’s team of architects, most of them probably Greek, built a new Forum, with a temple dedicated to Mars the Avenger in commemoration of his victory at Philiippi; at Augustus’s own expense they restored the Temple of Jupiter on Rome’s Capitoline; and on the Palatine they erected a new temple to Apollo and transformed the Luperine cave—where Rome’s mythical founders, the twins Romulus and Remus, were suckled by the she-wolf—into an elaborate grotto. The accomplishments of Augustus and of Rome during this period are almost without parallel.

Rule by one man has its drawbacks; the poet Ovid (43 BCE–17/18 CE) was exiled because his writing fell out of “imperial” favor, and the upper classes often felt that they were ignored. Nevertheless, Augustus ruled for forty-four years and died peacefully in 14 CE. In his will he counseled Rome against further expansion for fear that the empire would become unmanageable, a prophetic concern that would soon



be borne out. Augustus was unable to name a direct descendant as his successor and finally settled on his stepson, Tiberius.

Although in his later years he became more dictatorial, Augustus was arguably the greatest of the Roman leaders. He presided over the expansion and consolidation of Roman civilization. He preserved and extended the reforms begun by Julius Caesar, expanded Rome's borders to defensible positions in central Europe, placed the army under his direct control, eliminating the possibility of popular generals seizing power, and began a period of peace and prosperity never again repeated in Roman history.

J. David MARKHAM

International Napoleonic Society

See also Roman Empire

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Caesar, Julius

(100–44 BCE)

ROMAN GENERAL AND RULER

Julius Caesar's success as a political and military leader earned for him the titles of **pontifex maximus** (high priest of the Roman Senate), **consul**, and **dictator**—roles so powerful that conspirators assassinated him in 44 BCE. The reforms that Caesar began, however, and that his grandnephew Augustus continued, forged an era of Roman prosperity.

Julius Caesar's extraordinary talents and ambitions allowed him to expand Roman control, promote domestic reforms, and become the leader of Rome. With his assassination on 15 March 44 BCE, Rome began a new era as an empire, one that would last five hundred years.

Gaius Julius Caesar was born to a patrician family in 100 BCE. Civil war had broken out, and generals were gaining increasing power. While he undoubtedly received a classic Roman education from his father and, most likely, a tutor, very little is known of Caesar's childhood. As a young nobleman, Caesar received religious and military training, and served in a number of military posts. He then entered politics and became a distinguished prosecutor.

Caesar possessed great personal charm—he was tall, handsome, and prone to dressing with flamboyant elegance. Marcus Tullius Cicero, Rome's greatest orator, commended Caesar's oratorical and writing skills. Thus Caesar's prominence attracted the attention of others with positions of power in the republic. He had a particularly antagonistic relationship with Sulla, Rome's dictator. (As a commander of the Roman army in 82 BCE, Sulla had stormed the city and massacred his enemies—about ten thousand citizens and some forty senators. Appointing himself

dictator, Sulla personally controlled the government until he resigned in 79 BCE.) Caesar was related to Sulla's enemies, most notably Marius (married to Caesar's aunt, he was almost as ferocious a commander as Sulla) and Cinna (Marius's successor and Caesar's father-in-law). Sulla, who disliked Caesar and mistrusted his ambition, allowed Caesar to serve in the army in Anatolia, where he continued to develop his political and military skills. After Sulla's death in 78 BCE, Caesar returned to Rome and practiced law, prosecuting prominent corrupt Romans and seeking out powerful friends. In 69 BCE he was elected to a one-year term as **quaestor** (assistant to the governor) in Spain, where his main duty was the administration of justice. This position also gained Caesar admission to the Senate.

Caesar, extravagant in his quest for influence, was heavily in debt; he allied himself with Marcus Licinius Crassus, the richest man in Rome, and Gnaeus Pompeius Magnus (Pompey the Great), a popular general whose power and influence were on the rise. By 63 BCE, at age thirty-seven, Caesar's military successes, political activities—and bribes—led to his election as **pontifex maximus**, a powerful lifetime position as the high priest of the Senate. A year later he was appointed **urban praetor**, a prestigious administrative post. When his wife was rumored to be having an affair he divorced her, claiming that Caesar's wife must be above suspicion. In 61 BCE, Caesar was assigned to Spain as governor of the interior, where his numerous military victories earned him considerable wealth.

In 59 BCE, Caesar combined forces with Crassus and Pompey in the First Triumvirate, and he was elected to the top administrative post of **consul**. He

proceeded to institute popular reforms, such as land redistribution, over the opposition of Marcus Porcius Cato and the conservatives. Cato, perhaps Caesar's greatest opponent, and Cato's allies promoted the prerogatives of the Senate and the preservation of the republic.

The Senate gave Caesar control over Cisalpine Gaul (northern Italy), Illyricum (Albania), and Narbonese Gaul (southern France). From 58 to 49 BCE, Caesar conquered the rest of Gaul (France and Belgium), led two expeditionary invasions of Britain, and at Alesia (France) in 52 BCE defeated a combined Gallic army led by Vercingetorix. (Caesar's expansion of Roman civilization west into Gaul instead of north into Germany began the dichotomy between central and western Europe that exists to this day. This westward expansion, reinforced by Roman defeat by the Germanic tribes in the Teutoburg Forest in 9 BCE led to the development of Roman culture, law, and language in the west and a very different culture in the east.)

Fearing Caesar's ambitions, Cato and his allies in Rome sought to deprive him of his command. Caesar's efforts at compromise failed, and the Senate gave Pompey control of the local legions in 49 BCE. Caesar immediately left his headquarters at Ravenna and led his troops toward Rome. When they crossed the Rubicon River, the border of his territory—which it was considered traitorous to cross without military authorization—he famously proclaimed, “the die is cast,” and civil war began. Pompey had the support of most of the Senate and nobility, but this support was only lukewarm, while Caesar was popular with Rome's small middle class and, especially, with the common people, or plebs, and city and provincial leaders. Within six months he defeated Pompey's supporters in southern Gaul and Spain. Appointed dictator by the now acquiescent Senate, he undertook further economic reforms. In 48 BCE he crossed the Adriatic Sea to Greece and on 9 August defeated Pompey's forces at Pharsalus. Pompey fled to Egypt, and Caesar pursued him, landing in Alexandria. But the “boy pharaoh” Ptolemy XIII had already ordered Pompey killed,



Jean-Léon Gérôme, *Julius Caesar and Staff* (c. 1863). Oil on canvas.

hoping to gain Caesar's favor and hasten his return to Italy.

Caesar, however, decided to stay in Egypt to raise much-needed funds. While there he met Ptolemy's half-sister (and co-ruler), Cleopatra, who had been driven into exile by Ptolemy's regency council. Caesar and Cleopatra began an affair, and she bore him a son. The liaison brought the wrath of Egyptian troops who supported Ptolemy, and when Caesar's forces defeated them, Ptolemy was killed. Caesar then established Egypt as a client state with Cleopatra as its queen. Further campaigns in Asia and Africa proved victorious, and Caesar triumphantly returned to Rome in 46 BCE.

In Rome, Caesar declared amnesty for those who had opposed him. (Cato, who had opposed Caesar at every opportunity, committed suicide rather than be pardoned by his nemesis.) Caesar instituted reforms, such as grain and land distributions to the poor at public expense, took a census of Rome, and



Raffaele Giannetti, *The Last Senate of Julius Caesar*. Oil on canvas.

continued his program of building public works to provide both glory and jobs. He settled veterans and the unemployed in provincial cities, reducing Rome's excessive indigent population. He expanded Roman citizenship and reformed the tax system. The Senate voted him countless honors, but some feared Caesar wished to be king, his power as consul and dictator notwithstanding. As Caesar planned another eastern campaign, a group of conspirators—primarily Gaius Cassius Longinus (a hot-tempered soldier who had been denied a post), Publius Casca (an impoverished supporter of Cassius), Marcus Julius Brutus, a former devoted protégée who some believed was Caesar's illegitimate son) and Mark Antony (Antonius Marcus, who was once a loyal Roman Tribune)—plotted Caesar's assassination.

On 15 March 44 BCE, three days before his planned campaign, Caesar set out to attend a meeting in the Senate at the Curia Pompeia. As he approached the assembly hall a man pushed a warning note into his hand, which he did not read. According to Christopher Hibbert's account of the following events in *Rome: The Biography of a City*, which is based on the writing of Plutarch and Suetonius, conspirators hovered around Caesar as he walked toward his chair, pretending to ask advice or favors. When a

man named Tullius Cimber gave the signal (by lifting the back of Caesar's toga), Casca struck the first blow, which missed its mark and just scratched Caesar's neck. Caesar grabbed Casca's knife and managed with his other hand to stab Casca in the arm with the point of a metal pen. Mayhem ensued as the other conspirators bared their daggers and stabbed Caesar time and again. Horrified bystanders who had not been aware of the plot fled for safety, while Romans either bolted their doors or flocked to see where the assassination had taken place. At Caesar's funeral Antony made a moving funeral oration, believing he could force the Senate to accept an autarchy and establish power of his own. The speech was imagined and rendered unforgettable by William Shakespeare in the play that both glorified and immortalized its eponymous subject.

Caesar bridged the gap between the Roman Republic and the Roman Empire. As he had predicted, a civil war followed his death. Beginning in 27 BCE, his grandnephew Gaius Octavius, as Augustus Caesar, ruled Rome for forty-four years. Julius Caesar's legacy includes his unquestioned abilities as a military commander and his reforms, including protections for Jews, which set the stage for an empire that would last five hundred years. His written descriptions of the

campaign in Gaul, and later of civil war, are considered some of the finest examples of military prose ever written and were used to enhance his image in Rome. His move toward a government dominated by one man stemmed the growing power of the generals and may have saved Rome as a unified empire. Caesar's name has become synonymous with ruler: the terms *kaiser* and *czar* are derivatives of Caesar. Other great leaders, such as Napoleon Bonaparte, sought to emulate his greatness, and Roman symbols were the inspiration for the styles of the French and other empires.

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International Napoleonic Society

See also Caesar, Augustus; Roman Empire

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Camels

Adaptations to arid environments have made the camel an important draft animal, pack animal, and military mount in the dry regions of northern Africa and Central Asia. As the camel could carry humans across areas where no other domestic animal could, it made possible cultural, economic, and ecological exchange between otherwise separated societies.

The camel has played an important role in the environmental history of Africa and Eurasia since its domestication. Superbly adapted to arid environments, the camel has allowed human beings to negotiate the deserts and mountains of northern Africa and Central Asia, and in this sense the camel has been instrumental both in connecting the African societies and ecologies immediately to the south of the Sahara with the intercommunicating zone around the Mediterranean and in linking societies and ecologies across the southern axis of Eurasia itself, from the Mediterranean to China. Along with the horse, cow, donkey, and yak, it is one of the few domesticated animals that is large enough to carry an adult human.

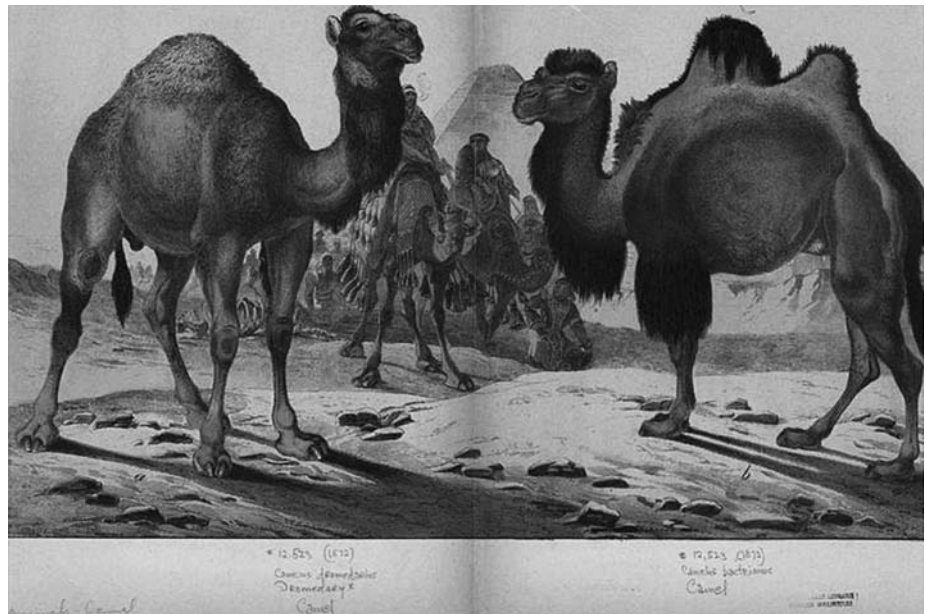
There are two species of camels, the dromedary, or Arabian camel (*Camelus dromedarius*), which has a single hump, and the Bactrian camel (*Camelus bactrianus*), which has two. The domestication of the dromedary in Arabia sometime around 1200 BCE allowed it to replace the ass in desert transport, strengthened the hand of desert-edge communities around the Arabian peninsula, and launched the career of Bedouin culture. It likely strengthened the

states of the desert fringe and may possibly have played a role in the decline of the riverine civilizations of Egypt and Mesopotamia. In North Africa during the course of the fourth, fifth, and sixth centuries CE, the use of the dromedary as a draft animal largely replaced a system of haulage in horse- or ox-drawn carts. The economics of camel transport encouraged Muslim societies in both North Africa and the Middle East to reduce and finally abandon their commitment to carted vehicles and to roads.

The Bactrian camel, which has been less intensively researched than the dromedary, was domesticated in southwest Asia before 2500 BCE and spread to Iraq, India, Central Asia and into China. Like the dromedary, the Bactrian camel could be used as draft animal as well as a pack animal and a military mount. The Bactrian camel, however, was not as large or fast as the dromedary, and over time its range diminished. In Central Asia during the second half of the second century BCE, a hybrid camel produced from the interbreeding of the dromedary and the Bactrian took over the role once held by the Bactrian. The pure Bactrians were retained as stud animals.

The economic advantages of the camel over other beasts of burden in arid lands are several. It can consume vegetation that other mammals avoid, thanks to its rapid and frequent digestive cycle that efficiently breaks down dry matter and fiber, cellulose, and crude protein. The camel can go without water for longer than any other working animal and is able to survive extreme desiccation, up to the loss of forty percent of body weight in a lean animal. The amount of time that a camel can continue without water is a

Camelus dromedarius
(Arabian or Dromedary
camel, with one hump) and
Camelus bactrianus
(Bactrian camel, with two
humps), 1872. Illustration by
C. Votteler.



function of many variables, including temperature, age of the camel, and weight of the freight burden, among others. On occasion, fully loaded camels have been able to push through desert terrain for more than ten days without water.

Today, camels are principally found in a broad band that stretches east through the North Africa, the Sahara, and the African grasslands just below the Sahara through Turkey and the Middle East to the western half of India. Within this zone, camels are considered to be extremely important to the nomadic livestock economies of Somalia, Mauritania, and the Western Sahara and to be of major importance in Tunisia, Jordan, Saudi Arabia, Yemen, Sudan, Niger, and Chad. Camels have adapted themselves to a variety of different environments, and specialists today distinguish between the physical

characteristics of lowland, mountain, riverine, and desert camels.

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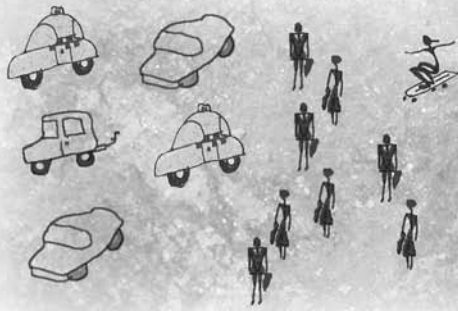
See also Caravans

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Capitalism

Capitalism is the exchange—for private gain and at market-set prices—of labor, land, and goods. Capitalism is seen in all periods of history, in both the East and West, but was limited by large subsistence and religious/state sectors for most of history, and by communist regimes, with state control of the economy, in the past century. Capitalism has brought great material progress, but also periodic crises and inequality.

Capitalism is a system of economic activity in which goods and services—including labor—are bought and sold at prices determined by markets (that is, at prices resulting from interactions among large numbers of buyers and sellers). This is usually contrasted with subsistence production, where most production is consumed by producers and their families or immediate neighbors, and thus has no price; or socialist production, in which the government sets the prices of goods and services, and producers do not control the sale of their products.

Other noncapitalist systems exist as well. Throughout history many societies had command economies, where states or elites directed producers (often slaves) to provide them with goods and services. Another distinct system is guild production, where groups of craftsmen making the same products limit production and fix the characteristics and prices for all goods produced by guild members, rather than allow individual producers to compete.

Capitalism in World History

Much confusion has arisen regarding the onset of capitalism in history, because capitalism has always

been present alongside other kinds of economic activity. For example, in ancient Greece and Rome, while most rural production was for subsistence and the majority of production for the elites was command production by slave labor, there were also extensive markets in which land, slaves, luxury goods, wine, and grain were sold for market prices. In medieval Europe, guild production by skilled craftsmen existed alongside markets for unskilled labor and for most agricultural products. Even as far back as the Assyrian Empire in 2000 BCE, which was mainly a command economy, we have cuneiform records from merchants on the borders of the empire detailing their negotiations to obtain the best prices and profits in their long-distance trade.

Nor was capitalism simply a characteristic of Western societies. Imperial China had extensive markets for land, labor, and most agricultural and manufactured products from at least the early years of the Ming dynasty in the fifteenth century, and seems to have had considerable market exchange by overseas merchants since at least the Southern Song dynasty in the twelfth century. On a more limited scale, the Silk Roads (the network of roads and sea routes that linked Europe, Persia, India, central and Southeast Asia, and China) facilitated capitalist exchange among merchants and local trade centers all the way from the city of Xi'an in China to the Roman Empire as early as the first century BCE.

In sum, we find people conducting capitalist activities in almost every society, at every period in history. Nonetheless, it is only from the eighteenth century onward that we find societies in which a

Money is better than poverty, if only for financial reasons. • Woody Allen (b. 1935)

majority of the population depends almost entirely on the market to meet their basic needs.

Some historians identify earlier periods, in the sixteenth and seventeenth centuries, as a time of “mercantile capitalism,” believing that it was mainly merchants who depended on capitalist activities for their livelihood at this time. It is certainly true that in these centuries merchants in Europe, China, and the Middle East became richer and more numerous through the expanding Atlantic and Europe/Asia trade of this era. In the sixteenth century for the first time capitalist trade became global, as trade between Mexico and the Philippines, Asia and Europe, and Europe and the Americas created world-spanning circuits of exchange. Everything from gold and silver to horses and furs, silk and cotton cloth, rice and wheat, ivory and indigo, coffee and tea became globally traded goods.

A host of other groups, however, were also heavily involved in market activities. The great landlords of Britain, Prussia, and Turkey all raised food from their estates to sell to cities along the North Sea and the Mediterranean. So too did the landlords of Italy and southern France, and the middling farmers of northern France, Britain, and Holland, as well as the wine growers of France, Germany, and Italy. In addition, vast numbers of workers and craftsmen in the countryside—agricultural day laborers, building laborers, millers, blacksmiths, masons, bakers, spinners and weavers of cotton and wool, shoemakers, tailors, silk and linen producers—depended on the market for their livelihood.

In China, the sixteenth and seventeenth centuries saw an explosion of family and village production of rice, cotton, cloth, silk, ceramics, horses, paper, soy products, and even fertilizers for market sale, as well as more refined luxury goods. Indian and Southeast Asian producers became major exporters of printed cotton cloth and spices, and of exotic woods, gems, and dyes as well. The spread of capitalist markets governed prices in trading centers around the world, as gold and silver mined in the Americas was sold to British and Dutch merchants, who in turn used it to buy cotton, tea, silk, and ceramics from India and China.

Modern Capitalism

The shift from agricultural societies (in which energy came from wood, wind, water, and animal power, vehicles were built mainly from wood, and large buildings were made from stone), to industrial societies (in which energy came mainly from oil, gas, and coal and vehicles and large buildings were built mainly from iron and steel), was a momentous change in human history. Several social theorists have identified this shift with the emergence of a new form of capitalist activity, called “industrial” or “modern” capitalism.

Karl Marx, a German economist, wrote in his great work *Das Kapital* (published in 1848) that modern capitalism was founded on production that employed wage labor. Marx observed that in ancient Greece and Rome most economic activity was carried out by slave labor, and that from the Middle Ages up through the eighteenth century, most urban and rural production was carried out by independent or guild craftsmen in their own workshops, and by peasant farmers on their own or rented land. Wage labor may have been a substantial part of the economy, but only a minority of workers labored exclusively for others for a cash wage. With the onset of mechanized factories, and even more with the expansion of cities relative to the countryside, more and more workers depended entirely on the wages they could earn by working for others.

Marx argued that in modern, wage-based capitalism, when workers were dependent on being hired to survive, labor became simply another commodity that could be bought at a market price. Marx believed this made it possible for factory and farm owners to be ruthlessly efficient in their allocation of labor. Workers would suffer, but the system itself would benefit from this efficiency to make factory and farm owners increasingly rich. Indeed, Marx forecast a situation in which the number of landless workers for hire—the “proletariat”—would increase and their condition worsen, while the factory owners, farm owners, bankers, and other owners of valuable property or “capital” would grow richer but fewer as



competition weeded out the weakest among them. Eventually, the capitalists would be unable to hold off a revolt of the proletariat, who would establish a communist society in which labor could no longer be exploited because the government would own all property and employ all of the people.

Another German social theorist, Max Weber, who wrote in the early twentieth century, also believed that modern capitalism was distinctive, but focused on the owners of capital rather than the workers. Weber suggested that prior to the eighteenth century, merchants, landowners, and producers of luxury goods acquired money through capitalist market activity, but mainly with the goal of spending their wealth on luxurious lifestyles or to support a large retinue. These were the ways that people displayed their success and gained admiration. But with the emergence of societies in which large numbers of people were committed to a “Protestant Ethic” of a sober, frugal, disciplined, and hard-working life, the mark of success became not conspicuous consumption or support of numerous retainers but the creation of larger and larger enterprises through the reinvestment of profits in expanded businesses. “Modern capitalism” was thus distinctive in its goals and its outcome: the creation of ever-larger business enterprises and nation- or world-spanning companies with ever-larger numbers of employees.

In China and Japan too, from the eighteenth and nineteenth centuries onward, social critics commented upon the increased obsession with acquiring material goods and piling up wealth, to the exclusion of interest in art, painstaking craftsmanship, philosophy, and social harmony. Around the world “capitalism” became a byword for selfish striving, the impoverishment of agricultural and factory workers who depended on others for employment, the growing role of large industrial, mining, farming, and ranching enterprises, and the acquisition of boundless wealth by a new class of businessmen, bankers, and property owners.

Yet the progress of capitalism was not steady and smooth. As more and more workers and property owners became wholly dependent on capitalist

market activity, they became more prone to the cycles of booms and busts that occur in all capitalist markets. As noted in the introductory paragraph, the hallmark of capitalism is the buying and selling of commodities at prices set by the negotiations of buyers and sellers. Yet there is no certainty that these negotiations will always result in prices that exactly balance supply and demand. During periods of economic expansion buyers and sellers often become overly optimistic, and buyers offer higher and higher prices for goods, even borrowing to buy and invest. Eventually, buyers become overextended, demand falls off, the prices of goods start to stagnate or decline, and markets contract, going into recession. These business cycles seem to be an inevitable part of capitalism, and have been seen from the onset of global capitalism in the sixteenth century. Some of these cycles have produced economic downswings so severe—especially the global Great Depression of the 1930s—that it seemed that Marx’s prediction for the demise of capitalism was at hand.

By the second half of the twentieth century, however, it was clear that capitalism had more flexibility and resilience than either Marx or Weber had realized. In Europe and North America, then in Japan and Asia’s Pacific Rim, then in China, India, and Latin America, small new companies were continually created that grew to become major global enterprises, while older industrial giants that had once been emblems of capitalism—such as General Motors, AT&T, British Leyland, McDonnell-Douglas, Digital Equipment Corp, Polaroid—either radically downsized or disappeared. In addition, factory workers gained wages sufficient to support their own considerable consumption, while numerous skilled workers and entrepreneurs, including doctors and lawyers, realtors and athletes, writers and screen stars, became quite wealthy.

Capitalism and Modern Economic Growth

While the growth of large-scale enterprises and the expansion of wage labor to include a majority



People have conducted capitalist activities, across land and sea, in almost every society and at every period of history. Here, a carpet dealer hangs rugs large and small outside his shop in Istanbul, Turkey.

of workers—the hallmarks of modern capitalism—clearly occurred in association with a dramatic rise in living standards, the connection between capitalist systems and modern economic growth remains controversial. Did the extension of capitalist market relations throughout society and across the world—including imperial expansion whereby European governments took control of many African, Asian, and Latin American societies in order to secure natural resources and consumers for European producers—provide the impetus for the development of machines, factories, and modern industrial growth? Or did the invention of steam-powered machines, the development of factories, and growing wealth lead to the global spread of capitalist relationships?

The answer, as with many complex historical puzzles, is that both are partly true. There have been many occasions in history when the extension of capitalist relationships, driven by a growing population and increased international trade, have stimulated new production techniques and created greater wealth. From the Assyrian Empire, which became one of the first empires to greatly expand regional trade, to Song China, to Venice in the fifteenth century, Spain in the sixteenth century, Holland in the seventeenth, and Britain in the eighteenth, there have been many “efflorescences” in which countries entered a golden age of prosperity, cosmopolitan sophistication, and accomplishment. These usually arose because expanding trade

brought new ideas and opportunities that led to the acquisition of new lands or the discovery of new processes or techniques for more productive agriculture or manufacturing.

Thus Song China produced unprecedented amounts of iron from new ceramic-lined reverberant furnaces; Venice produced glass goods and arsenals of ships and weapons; and Spain produced Europe's finest steel armor and swords while Spanish and Portuguese pioneers in oceanic navigation opened routes to the Americas. Holland's extensive trade led to innovations in warehousing, finance, ship design, and the use of windmills, and Britain's Atlantic trade helped spur improvements in iron-making, cotton spinning, and agriculture that made it the richest country in the world.

Each of these economic flowerings except Britain's, however, was temporary. For a century or two, these societies enjoyed expanded markets, growing wealth, and vigorous innovation. Yet these bursts of prosperity waned, as competitors learned similar techniques, rising population diluted the earlier gains, and international trade patterns shifted, costing the leaders their advantages. Such market-led efflorescence produced new ideas and much new wealth, but they did not produce an institutionalized method of creating ever-more-productive innovations. Capitalism, by itself, thus could not fully launch modern, ever-accelerating economic growth. At the same time there is no doubt that the spread of modern industry and factory production had the effect of increasing capitalist relationships across society and the world.

Although from ancient Assyria, Greece, and Rome to imperial China and Golden Age Holland many individuals and groups engaged in capitalist activities, it remained true that in all these societies most peasants and farmers—who still constituted three-quarters or more of all pre-industrial societies—produced much of their own food. Even cotton spinners and weavers, silk cocoon growers, cotton farmers, and others who mainly produced goods for market also had some land on which they grew food for their families. The creation of societies in which a vast majority of the population depended entirely

on market buying and selling of goods and labor to meet their daily needs for food, clothing, and shelter is strictly a modern phenomenon, starting in the eighteenth century.

The creation of such capitalist societies depended on innovations in agricultural production that allowed farmers to produce far more food for workers, and on innovations in production that allowed vast numbers of workers to produce inexpensive goods that could be widely sold. These innovations arrived together in eighteenth-century Britain as the result of the harnessing of empirical science to agricultural and industrial techniques. While the hallmark of this shift was the invention and improvement of the steam engine, and its application to mining, agriculture, construction, and transport, the steam engine was just part of a cluster of British and American innovations that included new uses of roller and rotary technology to produce cotton yarn; to make mechanical saws and lathes to cut wood; to create cheap wrought iron and steel; and even to print books and newspapers. There were also changes in land use and cropping patterns, improvements in transportation that allowed fertilizers to travel to farmers' fields from hundreds or thousands of miles away, and for farmers in turn to send food to markets at similar distances.

Innovations in steam power and iron technology also enabled Britain and other European nations to build gunboats and railroads that they used to open up and subdue countries in Asia, Africa, and the Middle East and force them to engage in trade with Europeans. New production and transport techniques created global markets for a wide range of goods, and turned peasants and craftsmen into farm laborers and factory and retail workers around the world, a process that began in the eighteenth century but is still continuing today.

The Future of Capitalism

A future of universal capitalism is exciting to some, but horrifying to others. Capitalism can be a brutally competitive system, creating depressing inequality and panic-inducing boom-and-bust cycles. Indeed,



Opening to the world economy in 1978–1979 after nearly thirty years of anti-capitalist leadership, the Chinese marketplace has changed to reflect the growing consumerism of an urban population, especially evident during the Christmas holiday shopping season. Philip Baguet Collection.

in order to reduce the worst consequences of capitalist relations, governments have had to intervene with regulatory and judicial systems that enforce contracts, protect laborers, regulate competition, control the supply of money and credit, redistribute income, offer medical care and pensions, subsidize transportation, limit pollution, and provide sanitation and planning for cities.

Much of modern political debate and contention is over the degree to which government should step in with such activities to respond to the adverse consequences of capitalism, or let markets self-correct and self-regulate. Karl Marx and his followers—including Vladimir Ilyich Lenin in Russia, Mao Zedong in China, and Fidel Castro in Cuba—believed that the logical consequence of the need for government to limit the excesses of capitalism was to abolish those market relations altogether, and have the government own all property, provide all jobs, set all prices, and regulate all economic activity. Only in that way, under a communist system, could prosperity for all workers be achieved.

Yet Austrian, British, and American economists, including Friedrich Hayek, Joseph Schumpeter, Alfred Marshall, John Maynard Keynes, and Milton Friedman, argued that free markets were the best institutions for promoting economic growth, and

that sensible government policy should seek to help spread the benefits of market growth while maintaining effective market institutions. Schumpeter even lauded the “creative destruction” of business cycles that paved the way for more productive new producers to replace inefficient or obsolete businesses. Protecting the makers of buggy whips when automobiles were replacing horse carriages was no way to promote economic progress.

The evidence of global history, so far, tends to support the capitalist group. Although capitalist societies have had greater inequality and periodic recessions and depressions, the workers in such societies have still enjoyed far greater economic growth and prosperity than their counterparts in communist societies. Indeed, virtually all of the major societies that adopted communism in the twentieth century have abandoned it as an economic system and restored capitalist market relations.

Still, many argue that global capitalism remains a source of extreme inequality and disadvantage to the developing countries of Latin America, Africa, the Middle East, and South Asia, most of whom also had their economies and politics distorted by long periods of European colonial rule. These regions suffered severely during the economic crises of the 1990s and early 2000s. In the “Great Global

Recession” that began in 2007 (and from which many countries have yet to recover fully in early 2010) developing countries that had recently shifted toward more capitalist practices—including Russia, Brazil, China, and India—recovered most rapidly, suggesting that capitalism was now working well in these countries, while excessive financial speculation or deregulation undermined economic stability in the more developed regions of North American and western Europe.

Critics of capitalism worry that government action cannot forever serve as a palliative for capitalism’s competitive and cyclical tendencies, and look forward to a future utopia in which economic output will be so fruitful and so widely shared that market-set prices and market-set incomes will no longer dominate who obtains what goods and services. If that day comes, people will look back at capitalism as a system that was only helpful in promoting growth during an unpleasant period of scarcity and international competition for scarce goods.

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See also Economic Cycles; Economic Growth; Smith, Adam

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Caravan

The formation of armed caravans made possible commerce across vast stretches of inhospitable or unoccupied land, by offering safety to their members and dividing the costs of travel. Nonetheless, trade by caravan was expensive, and the proliferation of sea, rail, and truck transport replaced the caravan by the twentieth century.

Throughout much of human history merchants who moved goods overland across long distances minimized their risks of loss to plunderers by traveling in caravans and carrying arms for protection. The merchants shared provisions and endured hardships, and their numbers provided them, at times, some degree of immunity from predation. Caravanners who passed from the domain of one political authority to another depended upon local authorities to secure their protection, and in return they paid transit fees, which might be offered in the idiom of tribute or gift giving. In traversing stateless areas, armed caravans could be as imposing as a small army. This practice of armed group travel, rooted in the elementary logic of safety in numbers, is ancient. References in early Chinese literature and in the Old Testament indicate the existence of the caravan during the first millennium BCE, and it may be even older.

The cost of transporting goods by land was generally higher than by sea or river, and thus caravans were mounted only in regions where these alternatives did not exist. In Africa north of the tropical forest and across Eurasia, merchants loaded their wares onto the backs of draft animals or in carts to be pulled by draft animals because the transport of goods by draft animal was less expensive than by human carriers. Across dry deserts such as the Gobi, the camel

was the only pack animal that could survive the rigors of the crossing. In the intense cold of the Himalayas, the yak was the pack animal par excellence. Along the southern coast of the Sahara, the ox and the donkey were preferred.

Caravans were highly vulnerable to the elements, and merchants first and foremost had to take into account the physical needs of their draft animals. These needs could mean nighttime and early morning travel to avoid searing daytime temperatures when crossing the arid desert or travel during only the temperate months in order to avoid snow and ice. This type of travel could necessitate days of rest in order for the animals to recuperate from strenuous marches between watering points and to consume nutritious pasturage. With many uncertainties en route, caravanners developed organizational strategies to minimize their risks. They recognized the need for centralized decision making. Typically, they chose a caravan leader to handle diplomacy, arbitrate disputes, and manage logistics and a guide to negotiate the terrain. Individual caravanners generally traded on their own accounts.

The best-known and most-researched traditions of caravanning are those of Afro-Eurasia. The longest and oldest overland trade route in the world was known as the Silk Roads, which stretched from China to the Byzantine Empire. It was in use during the early years of the first millennium CE. The merchants of the Silk Roads bought and sold along the length of the route, and their commerce was critically important to communities situated along it. Communities at various points along the Silk Roads—particularly in southwest Asia—maintained caravan rest houses, known as caravanserais, in order to encourage the commerce.



Members of an early-twentieth-century caravan in the Middle East take a rest.

The slow-moving, armed commercial markets were the principal arteries of cross-cultural communication between the distant Eurasian civilizations. Along the manifold routes and spurs of the Silk Roads traveled ideas, goods, inventions, and techniques.

The caravan routes that stretched across the Sahara, dating from the first millennium CE, likewise played an important role in world history, linking the societies of northern Africa with those along the southern coast of the Sahara. By the beginning of the second millennium CE, along these desert routes, negotiable only by camel, flowed the knowledge of Islam and literacy, as well as ivory, gold, and large numbers of slaves.

Slave Labor

Beyond the Saharan and Central Asian basins, merchants also moved goods over great distances. In tropical Africa no indigenous beasts of burden

existed, and the tsetse fly, the insect that carried sleeping sickness, killed off the domesticated draft animals of Eurasia that tried to penetrate the open woodlands and forests. Thus, caravans in tropical Africa were typically composed of long lines of human beings, rather than pack animals and carts, and slaves rather than free people were generally put to this labor. With human portage, transport costs (measured in food requirements for the laborers) were high, and consequently goods that had a low value-to-bulk ratio—such as grains or foodstuffs—generally were not transported even moderate distances.

Mesoamericans (people of the pre-Spanish culture area extending from Mexico to northern Central America) used a similar pattern of using slaves to carry goods. In the Andes, by contrast, goods of up to 45 kilograms in weight could be mounted upon the backs of llamas. During the sixteenth century the Old World draft animals established themselves

in the New World and came to bear the burden of long-distance overland transport where feasible.

Although the caravan has long been associated with long-distance trade, most caravanners likely took part in the regional exchange of goods and services. One pattern linked nomadic societies with sedentary societies around the Central Asian and Saharan basins. In the Sahara, for example, a larger percentage of caravanners transported Saharan salt into West African villages and on return brought back grain for consumption in the desert than ever engaged in long-distance trade across the Sahara. The same was true of the nomadic trade in animal products from the Central Asian steppe (a vast, usually level and treeless tract) into China. A second pattern of caravan use was the relatively short-distance provisioning of urban centers with foodstuffs, such as in the massive system of ox-driven caravans that fed the city of Delhi, India, during the Mughal Empire.

Economic Pressure

Through the early modern centuries the increase in the volume of maritime trade and the coincident decline in per-unit transport costs put economic pressure on the overland trade routes. The caravan trade survived into the late nineteenth and early twentieth centuries only in interior regions where geographic isolation protected it from competition from the maritime sector. However, later during the twentieth century the caravan trade died off, outcompeted by the lower cost of transporting goods overland by truck or

railroad. During the same period the nomadic world dramatically contracted in size and influence.

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See also Silk Roads; Trading Patterns, Trans-Saharan

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Carrying Capacity

The growth of a population in a given environment is theoretically limited by the availability of resources and susceptibility to disease or disaster, thus the maximum number or density of organisms an area can support is called the *carrying capacity*. The threshold for humans is unknown, because they respond to scarcity by moving to new areas, adopting new resources, or inventing technologies to increase capacity.

Carrying capacity is the theoretical limit on the size of a population of any organism that a given environment of defined size can support indefinitely. The limit is usually stated in terms of the food supply, but density-dependent diseases have probably been the most important factor in limiting many animal and human populations through most of history. Other limiting factors may have included specific nutrients or water, or even physiological responses to the psychological stresses of high population density. The “law of the minimum” suggests that the limit will be set by whichever resource is in shortest supply or is activated at the lowest population density.

If food is the limiting resource, as is usually assumed, any population of food consumers is limited by the regenerative capacity of its food supply. If the consuming animal eats only the amount regenerated, (if, for example, wolves eat only as many sheep as are born each year, or the sheep eat grass only as fast as it can regenerate), the consumers and the food supply can theoretically coexist forever in equilibrium (unless the environment itself changes). The equilibrium may be static or may involve interrelated fluctuations in the size of the two populations, as when, for example, wolves deplete the sheep population and then

decline in numbers themselves, which then permits the sheep to regenerate. If the consumer continues to eat more of its prey than the prey can regenerate, the population of prey and therefore of consumers will be reduced conceivably to extinction. Exceeding carrying capacity may result either in excessive mortality among consumers, in reduced fertility from malnutrition or disease, or in both. Density-related social dynamics among the consumers may also affect both mortality and fertility. The same principles apply to specific isolated human populations subsisting on limited resources (as in the Arctic or extreme deserts) where there is nowhere else to go, no alternative resources, limited ability to move food, and limited ability of the human group to enhance the growth of its resources.

Carrying Capacity Applied to Human Beings

How important carrying capacity has been in human history is a matter of debate. A Malthusian perspective implies the importance of carrying capacity by arguing that human populations are—and by inference have been—limited by food-related technology that expands only through fortuitous human invention. Thomas Malthus (1766–1834) argued that the human population cannot expand indefinitely because it will inevitably outstrip its food supply. Humans will eat beyond Earth’s technologically enhanced carrying capacity, with dire consequences.

Although Malthus may be right about the long-term future, he was clearly wrong about much of human history to date and for the near future. The carrying capacity concept clearly has not applied overall and in



Buffalo berry gatherers in Mandan. Photo by Edward S. Curtis (1868–1952). Any population of food consumers is limited by the regenerative capacity of its food supply. Library of Congress.

the long run to the growth of our species as a whole (although it has almost certainly applied locally and in the short run).

People are omnivores who eat an extraordinarily wide (and still expanding) range of foods. We respond to shortage by expanding the breadth of our diets. (Few human populations consume all of the edible resources within range until forced to do so by hunger.) We also can increase the range of environments we occupy, and we can move food from place to place. Most important, we have demonstrated an enormous capacity to increase food supplies by investing additional effort in obtaining and processing them.

A controversy exists about the relative importance of supply and demand as determinants of human food supplies in human history. Many scholars believe that Malthus profoundly underestimated the ability of growing populations themselves to force changes in food choices, technology, and related behaviors. Throughout history, the human population has made adjustments that have ultimately resulted in

the adoption (more than invention) of new technology. If demand can push supply, the meaning of carrying capacity as a fixed limit must be questioned.

Evidence for the importance of economic demand in human history comes in many forms. New foods eaten have often been less palatable, less nutritious, and harder to obtain than those they supplemented—and therefore unlikely to have been adopted just because they had been discovered or new technology invented. Many new environments colonized were clearly not preferred (deserts, tropical rain forests, and the Arctic) and would not have been colonized voluntarily. Many new technologies or steps taken to improve food supplies resulted in declining quality of food or declining efficiency of food-getting techniques. Much of the history of evolving economies seems to have involved diminishing returns, particularly in the quality of human health and nutrition.

Carrying Capacity for Foraging Peoples

Between 100,000 and about 12,000 years ago the human population consisted of foragers, small populations of whom survived into recent centuries and even into the present in forms modified by outside contact. These groups are mobile, live at low population density, and eat fresh wild foods. Malnutrition is quite rare among modern foragers and appears to have been rare among foragers in the past, but becomes increasingly important as populations grow and “progress” to new food resources and new technologies. Ancient and historic foragers also have been relatively disease-free, because low population densities and periodic movement prevent many infectious diseases from spreading or minimize their impact. The disease burden has clearly increased with increasing population density through human history. Major epidemic diseases such as smallpox are clearly of relatively modern origin. Modern peasants and the poor enjoy nowhere near foragers’ standard of nutrition and health.

Various studies show that large game is among the highest quality and most easily exploited of resources

Pieter Brueghel the Younger, *A Village Landscape with Farmers* (1634). Oil on panel. Humans respond to scarcity by moving to new areas, adopting new resources, or inventing technologies.



when available. But large game occupies large territories and is depleted easily. Early human foragers' diets apparently included a relatively high proportion of large game; human hunters may have hunted many large mammals to extinction before falling back on secondary resources.

Early in prehistory population growth was extremely slow, absorbed mostly by territorial expansion. The slow growth probably resulted mostly from low fertility or birth control (since the life expectancy of such groups equaled that of later populations that grew much faster). As population densities increased, the role of infectious disease as a limit to populations increased. Malthusian constraints resulting from food shortages may also have been operating in specific times and places, but hunger and starvation may actually have increased in frequency and severity in later, non-foraging populations. Slow growth might also have been the result of population mechanisms geared not so much to the ultimate carrying capacity of natural resources as to the "carrying capacity" of choices defined by preferred labor inputs and food choices, or even of personal space.

As populations grew increasingly in the last 20,000 years, the territory available to each group declined, and large mammals became scarce, to the point where groups were ultimately forced to broaden their diets to include a wider range of more prolific resources (a wider range of vegetable foods, birds, small mammals, fish, and shellfish), resulting in an increase in the carrying capacity of each unit of land. But the new resources were apparently less desirable foods, less nutritious, and more difficult to exploit, thus commonly consumed only as preferred resources were exhausted. Our ancestors probably adopted, rather than invented, new technologies such as fish hooks, grindstones, and arrows suitable for exploiting smaller game that were obvious or long-known but unused until needed rather than being confined by the limits of fortuitous economic invention independent of need.

Wild small seeds, including cereals, were apparently very low on the list of preferred foods. They raise the carrying capacity of each unit of land but are not particularly nutritious and are very difficult to convert to food. (Even today, cereal grains and tubers

Population, when unchecked, increases in a geometrical ratio. • Thomas Robert Malthus (1766–1834)

are staples primarily for the poor, because they are plentiful and cheap.)

Carrying Capacity after the Adoption of Agriculture

Agriculture and the domestication of plants, first adopted about 10,000 years ago, are usually considered major inventions that further raised the productivity of land and permitted groups to become sedentary. They apparently resulted in a slight increase in the rate of population growth, probably not from increased life expectancy but from greater fertility and/or altered birth control choices. But they, too, may have been a concession to increased population density. They clearly further lowered the quality of nutrition and may have increased labor demands.

On the one hand, sedentism and the ability to store food may have helped smooth out seasonal fluctuation and bottlenecks in the food supply; on the other, storage anchored populations to the vicinity of their stores, perhaps making those populations more vulnerable to crop failure, especially as domesticated crops modified for human use are often less suited to natural survival than their wild ancestors and hence more vulnerable to disease and pests. The concept of storing foods restricted diets to storable resources, but stored foods lose nutrients during storage, and actual physical losses of stored food (due, for example, to spoilage) threatened the reliability of the whole enterprise. Reliance on stored resources also increased people's vulnerability to expropriation of stored resources by others, while sedentism also exposed populations to increased infection risks.

Common reconstructions hold that among established farmers, the invention of new tools or exploitation of new technologies—the hoe, the plow, draft animals, fertilizers, and irrigation—increased the carrying capacity of land and made labor more efficient. A more controversial thesis holds that methods of farming involving plentiful supplies of

land and low population densities may have been more efficient than the more intensive methods associated with increased population density. Denser populations require increasing the productivity of land by shortening the periods of time that the land lies fallow, which in turn may necessitate the adoption of new tools. It is possible, therefore, that both before and after the adoption of agriculture, demand and labor investment, not technological “progress,” may have been the engine of economic growth. The idea of a fixed ceiling on resources modifiable only by fortuitous invention independent of need would then have little explanatory power.

Carrying Capacity in Recent Centuries

Artificial Malthusian constraints on population clearly became important with the emergence of civilization, because ruling classes (a defining feature of civilization) can withhold food from the lower classes and prevent them from generating demand for food. (Demand implies both desire or need and the ability to produce, pay for, or otherwise command food.) Hunger in the modern world among bountiful food supplies results from the inability of the poor to pay for food. Many argue that solutions to world hunger at present relate to the distribution of wealth, not natural Malthusian limits.

Moreover, in recent centuries, the growth of the world population has accelerated markedly. Nor can that growth be attributed to modern medicine's reducing human mortality, as it began well before the advent of modern medicine. Some argue that high growth rates are not a property of so-called primitive groups—that is, groups that depend on a high birth rate to assure their survival—but are a conscious response to the demands of colonial or world systems. If or when new efforts and new technology become necessary to feed the world's population, the implementation of those new technologies will depend on the degree to which the rich concern themselves with the poor. If that is the case, then increases in food

technology are indeed independent of population and demand.

Ultimate Human Carrying Capacity of Earth

In the long run, demographers generally estimate the ultimate carrying capacity of Earth at 10–70 billion people (although some estimates are much higher.) The modern world population as of 2010 is approximately 6.8 billion. The variation in those estimates is due in part to different assumptions about the ability and willingness of human populations to exert more effort, employ new technologies, eat new foods, and accept lower standards of living.

But the human carrying capacity of Earth may well ultimately be measured not by food resources but by the limited supply of some other necessary resource. Fresh water is already in short supply, and that supply can be enhanced only at great cost. Carrying capacity might also be defined ultimately by the highest density that a human population can reach before it triggers an unstoppable epidemic of infectious disease—probably the most important limit on population for the foreseeable future. And it may well be defined by the limits of the capacity of social organization to mitigate social and psychological stresses brought on by declining personal space.

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See also Malthus, Thomas; Population and the Environment; Population Growth

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Cartography

Maps of all types, whether depicting location, topography, or historical patterns and trends, are considered an essential tool for explaining and understanding world history. Key concepts of cartography, such as scale and projection, determine how a map is viewed and can often result in distortions. New technologies that allow for more accurate mapping techniques may eventually lead to better understanding of global historical development.

Historians have used maps to portray the geographical patterns of the past for hundreds of years. Chinese historical cartography dates back at least to the Song dynasty (960–1279). Europeans made historical maps of their Holy Lands, based on biblical sources, as early as the fourth century. The first historical atlas is sometimes attributed to

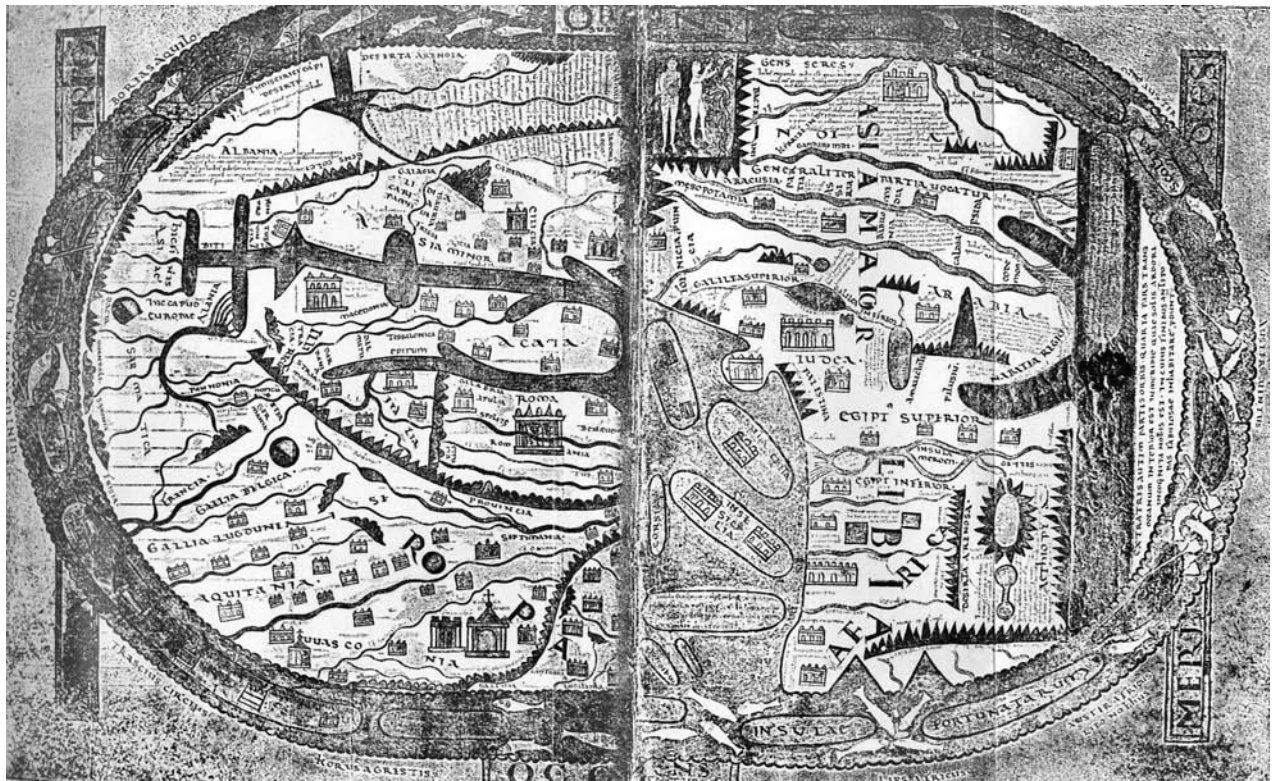
Abraham Ortelius (1527–1598), who included sets of historically focused maps in the later editions of his *Theatrum Orbis Terrarum* (first published in 1570).

Such early exercises in historical mapping, however, were not conducted on the global scale that informs modern world history. Not only was the Earth incompletely known, but the ethnocentric principle of geographic construction ensured that such projects focused on the cartographers' own homelands and, more generally, civilizations. Gradually, however, the mapping of historical patterns has become less parochial. The *DK World History Atlas*, for example, published in 2005 by Dorling Kindersley, is at pains to take a global perspective and to avoid Eurocentrism.

Although the most inclusive use of cartography in world history is encountered in historical atlases, maps are deployed by world historians in a variety



Map 1. Ptolemy Map. Created by the Alexandrian geographer, astronomer, and mathematician Claudius Ptolemy in the second century CE, this map reflects the known inhabited world at the time, shown extending mainly east to west with the Indian Ocean as an inland sea. The map became popular in the fifteenth century when it was reproduced several times and printed via moveable type.



Map 2. *Mappe-Monde* of St. Sever. Created between 780 and 980, this map exemplifies an early Christian world map oriented with “east” at the top, Europe to the left, and Africa to the right.

of other circumstances. All world history textbooks contain maps, as do many scholarly monographs that focus on world history. World history lends itself to mapping because it is by necessity geographical; world historians have to discuss a large array of different places, noting how they are both connected to, and differentiated from, one another. The most economical and elegant way to depict such spatial differentiation and integration is through cartography.

Essential Cartographic Concepts

A key cartographical concept is that of scale, the level of reduction from the actual space covered to its representation on paper. In a map scaled one to one million (at a ratio, in other words, of 1 to 1,000,000), a centimeter on the map represents a million centimeters on the Earth. Counterintuitively, large-scale maps cover

small areas while small-scale maps cover large areas. World historians typically employ small-scale maps, often operating at the global level of resolution. Most world historical atlases actually have a regional focus, interspersing maps of the entire planet among more numerous presentations scaled at the continental or subcontinental level. Several maps of early modern Europe, for example, may be followed first by portrayals of East Asia and then South Asia during the same period and subsequently by depictions of global trade routes and imperial expansion.

A second signal cartographic concept is that of projection. In projecting the curved surface of the Earth on a flat sheet of paper, distortions—whether of shape, size, distance, or direction—necessarily result. Mathematical techniques have allowed cartographers to devise hundreds of different projections, each of which warps the image in its own particular

It is not down in any map; true places never are. • Herman Melville (1819–1891)



Map 3. Idrisi Map. Reconstructed in the middle of the twelfth century from the writing of Muslim geographer Abu Abdullah Muhammad Ibn al-Sharif al-Idrisi, this map, like many Islamic maps of the period, was based on the ideas of Ptolemy (see Map 1) combined with knowledge Arabs gained through travel and expansion.

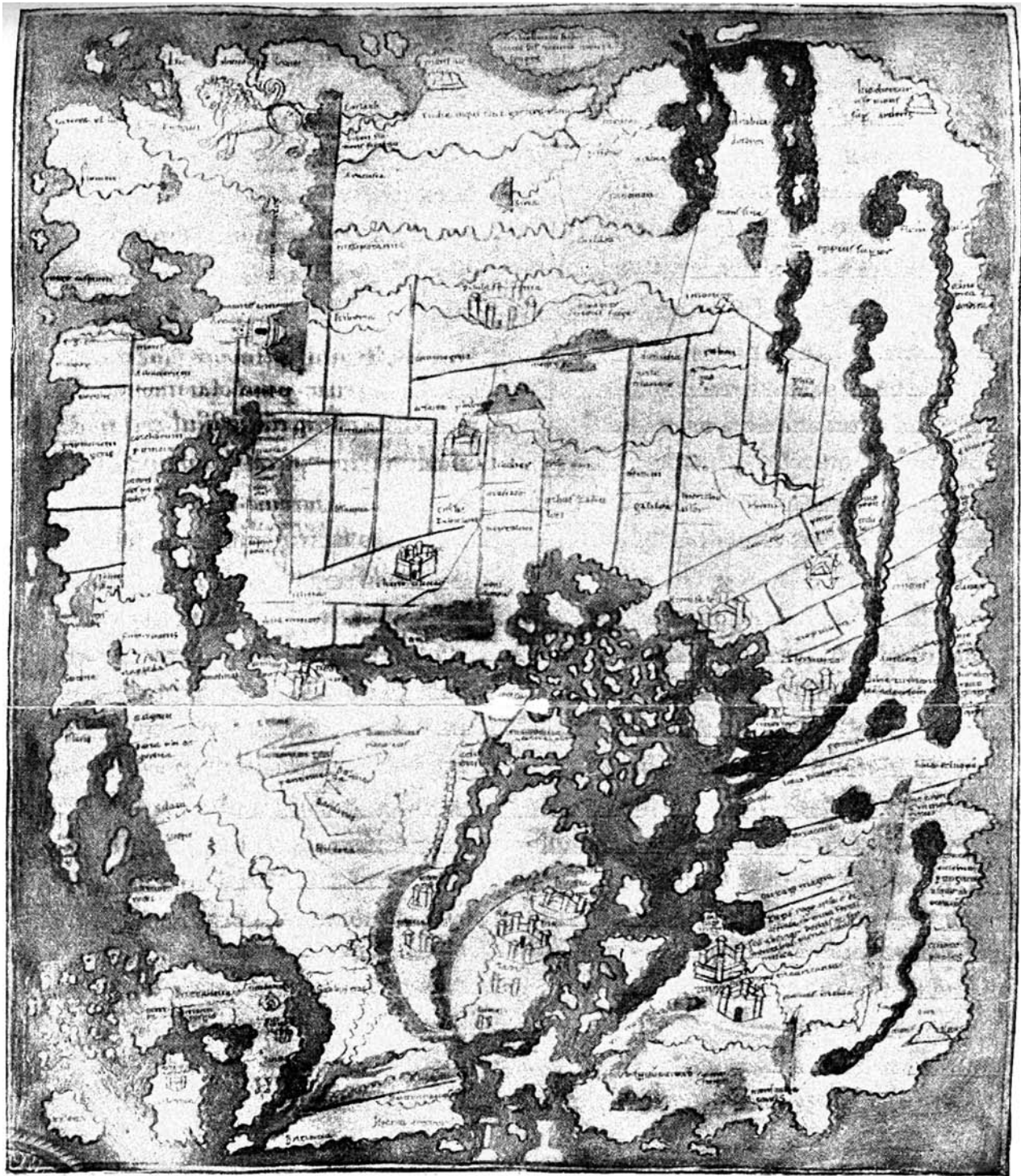
way. Inadequate attention to the challenges posed by projection has led to poorly conceived historical maps. Many of these have used Gerardus Mercator's eponymous projection of 1569. Although invaluable for navigators (it is the only map projection on which a constant compass bearing can be plotted as a straight line), the Mercator projection grossly exaggerates the extent of high-latitude areas, such as Europe. As a result, critical scholars have argued that it serves in the end as a kind of visual propaganda for Eurocentrism.

Even the vantage point from which maps are constructed leads to necessarily skewed images of the world. In the typical equatorially oriented world map, for example, the oceans all appear to occupy discrete basins, whereas a map projection focused on the South Pole reveals the broadly interconnected oceans as mere embayments of a global sea. Several recent world historical atlases experiment with multiple and novel map projections, both at the global and regional scales, allowing viewers to picture spatial relations in

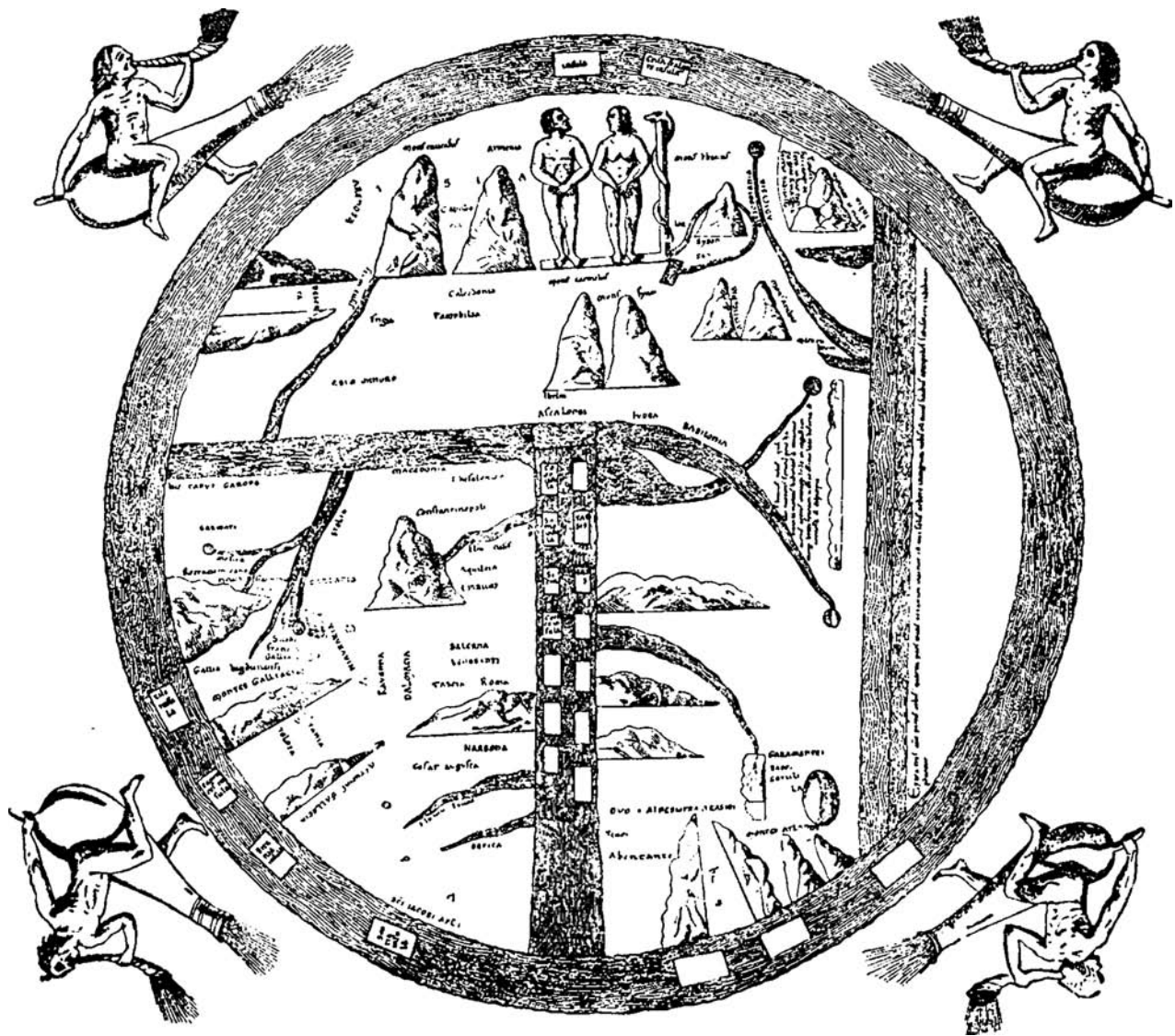
fresh and arresting ways. Such maps sometimes dispense with seemingly natural yet purely conventional cartographic protocols, such as situating north at the top of the page.

Distributional Maps: Problems of Sovereignty

Historians use a wide variety of map types to illustrate the past. Simple locational maps are often employed to indicate the positions of places mentioned in the text. More complex versions of this sort of map add topography and other natural features. In the *Barrington Atlas of the Greek and Roman World* (2000), detailed physical maps, containing a large array of precisely located place names, depict the landscapes of antiquity, much as one would find in an atlas of the present-day world. More often, however, the maps employed by world historians reveal the distributional patterns of specific phenomena. The most commonly depicted patterns are those of



Map 4. Anglo-Saxon Map. This tenth-century map, perhaps the most accurate map produced by Christian Europe before the 1200s, shows considerable attention to detail.

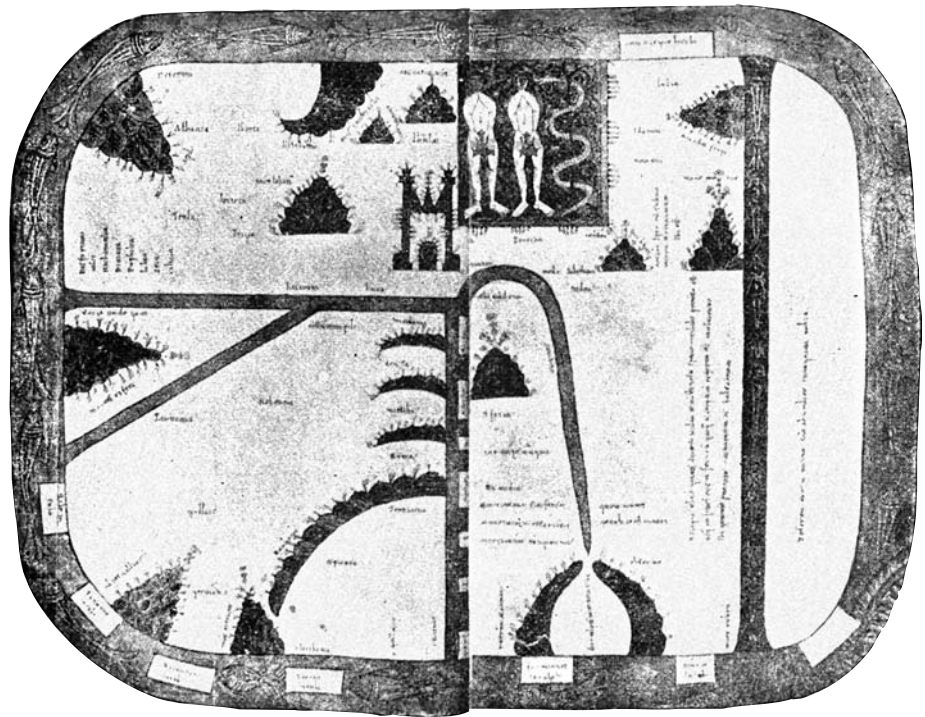


Map 5. The Turin Map of the 11th Century. This old and simple Christian map of the world shows Adam, Eve, and the serpent at the top. It gives special attention to physical features including mountains, rivers, and winds.

political geography, bounding the territories of kingdoms, empires, and other polities of the past. Historically minded cartographers also map the spatial configurations of religious adherence, economic organization, population density, and many other aspects of social life. Less often encountered in world history are thematic maps that depict statistical variations of particular phenomena over space, since gathering the requisite quantitative data over large areas for earlier times is difficult at best.

The common focus on political organization reveals one of the most intractable problems in historical mapping: that of projecting the geographical patterns of the present onto the past. Almost all atlases of world history are dominated by maps depicting, with bright colors, neatly bounded polities, much like those found in political maps of the modern world. Before the nineteenth century, however, few states were in fact clearly bounded in space. Most were characterized by a gradual diminution of

Map 6. The Spanish-Arabic Map of 1109. The original is brightly colored and represents Christian and Muslim ideas about the world. It is noticeably cruder than earlier maps, with the Earth depicted as square and surrounded by water.



sovereignty with distance from core areas. Instead of clean borders, one would have found broad frontiers of ambiguous, or overlapping, political affiliation. A related difficulty, most glaringly apparent in the case of early modern European empires, is that of hypothetical sovereignty. Spain, for example, did indeed claim control over vast expanses of North America in the late eighteenth century, as is reflected in most maps depicting that period. In practice, however, the Spanish monarchy exercised power over only a few minor outposts in those vast territories located in what is now the United States.

Unfortunately, it is difficult to depict the complex spatial patterns of sovereignty that characterized the premodern world. The black-and-white maps to which most authors are limited are almost never adequate, and even the full color maps of world history atlases seldom prove equal to the task. Only regionally focused historical atlases, such as Joseph Schwartzberg's exemplary *A Historical Atlas of South Asia* (1993), allow the concerted attention to detail that is needed to address this thorny issue.

Mapping Dynamic Patterns

Political-historical maps, however they are drafted, primarily depict differences among places. If such spatial differentiation is one of the fundamental aspects of geography, the other is spatial integration, or the connections that bind places together. World historians are increasingly interested in this latter, more process-oriented, form of representation. Rather than stressing boundaries, maps of integration typically portray routes, often depicted by arrows. The routes in question may be trade circuits, lines of diffusion (whether of innovations or diseases), migration pathways, courses of exploration, or paths of invasion; roads, canals, and shipping routes are often prominently displayed. Such maps are often dynamic in orientation, illustrating movement over time. A wide variety of hybrid maps, such as those overlaying trade routes across politically marked territories, are also commonly used.

In the final analysis, all cartographic representations of the past are at least implicitly designed to suggest change over time. To be sure, most maps



Map 7. The Psalter Map of the 13th Century. This map is a good example of the circular world maps of medieval Europe. Christian themes and legends are an integral part of such maps. Christ is at the top and Jerusalem in the center.

found in world history texts and atlases present snap-shots, illustrating conditions as they supposedly existed at a particular date. A sense of dynamism can be gained, however, by comparing maps depicting conditions in one period with maps of the same area in earlier or later periods. More ambitious cartography attempts to incorporate historical change within a single representation. In regard to political mapping, this is most easily done for polities that exhibited prolonged expansion. The growth of the Roman or Ottoman empires, for example, can fairly easily be shown by using different colors or shades to represent territorial accretions made during particular periods. One can also map contraction in much the same way, as with the often-mapped diminution and eventual disappearance of Poland in the eighteenth century. It is very difficult, however, to show complex territorial changes, exhibiting episodes of both growth and retrenchment, on a single

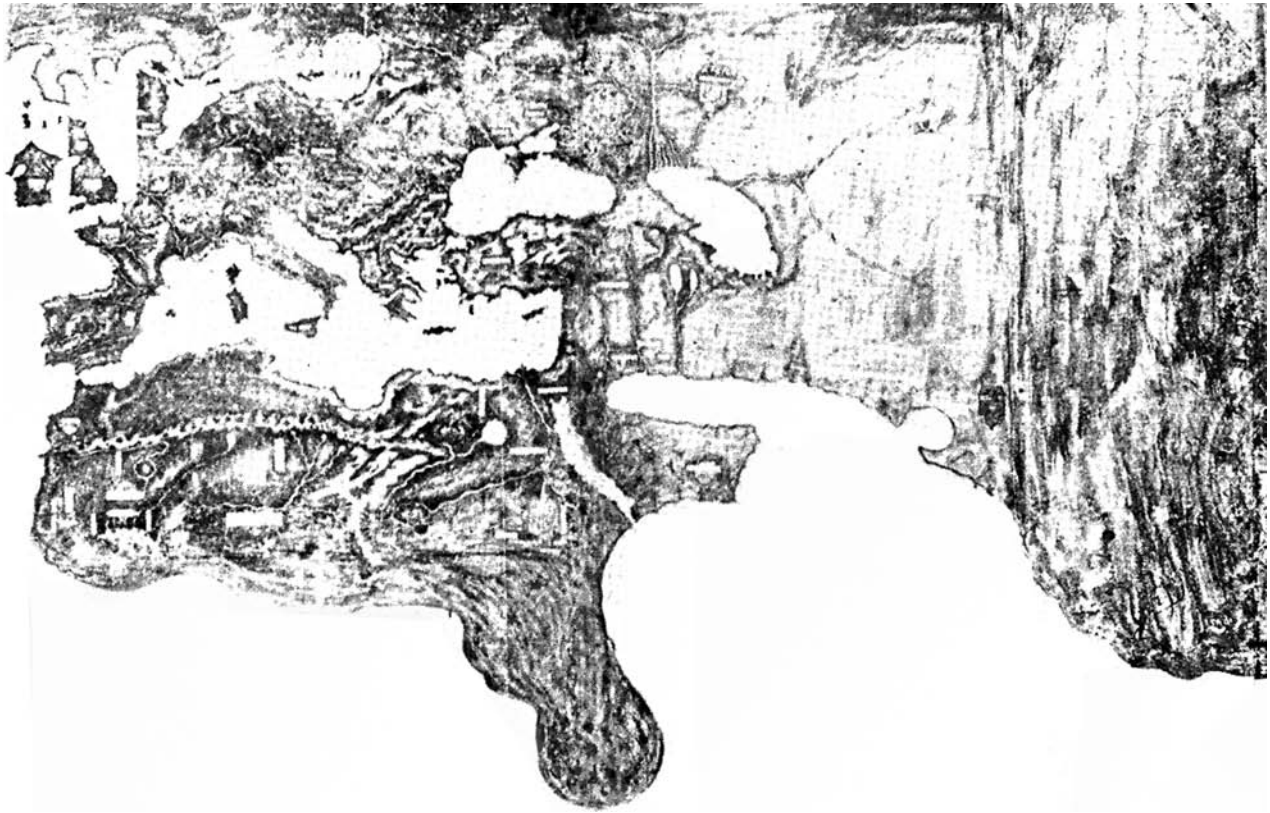
rendering. Maps of this sort tend to be so complex that they can be more confusing than edifying.

Political Implications and Motivations

Like other forms of mapping, historical cartography is often influenced, consciously or not, by ideological commitments. Maps necessarily demand the exclusion of information (a totally comprehensive map, it has often been remarked, would have to be constructed at a 1 to 1 scale, rendering it useless). What the cartographer chooses to portray depends on what he or she considers important, which in turn is influenced by his or her political outlook. A left-leaning scholar, for example, might be more inclined to map peasant rebellions than a right-leaning scholar, who in turn might be more concerned with great-power politics. Political sea changes in academia have thus influenced our cartographical portrayals of the past; maps of rural insurrections, for example, are much more common today than they were in earlier generations.

Nationalist ideology, coupled with devotion to one's own "civilization," has also profoundly shaped the construction of global historical maps. World history atlases produced in Germany, for example, contain more portrayals of Germany and of Europe than those produced in Japan, which, correspondingly, focus more on Japan and East Asia. The academic development of world history as a discrete field of study over the past several decades has, however, countered such parochialism, nurturing instead a globalist vision.

But regardless of such recent progress, cartography has often been put to clearly nationalistic purposes in the past. In Nazi Germany, for example, mapmakers strove to magnify the extent of the German Reich during various historical epochs. At the extreme of politicization one finds propaganda maps, such as the early Nazi productions that depicted Czechoslovakia as a fist striking into the heart of the German geographical body. Today it is not uncommon to find anachronistic political maps of the present-day world that show, without acknowledgement, territorial dreams rather than realities. National maps made in India and Pakistan, for example, usually append



Map 8. The Laurentian Portolano of 1351. This Italian map is notable for its precise depiction Europe and Asia but especially Africa, representing the continent more accurately than any European map up to that time.

all of Jammu and Kashmir to their respective national territories, rather than merely those portions of the region that they actually control.

The use of mapping for such nationalistic and imperialistic purposes has led some scholars to conclude that cartography, whether depicting the past or the present, is primarily a projection of power. Although this thesis is probably exaggerated, matters of state power do infuse many mapping projects. National atlases, for example, emerged as important sites in which to illustrate the themes of national unity, diversity, and historical cohesion. But if the national polities take advantage of maps for their nation-building agendas, so too, in recent times, do members of various small-scale societies, who have learned to employ modern cartographic techniques to define and defend their own historically constituted homelands against encroachment by private interests and state power. Cartography is thus perhaps best seen as a flexible methodology that can serve almost any purpose.

Historical Maps in World History

World historians can use any source of spatial information in order to construct maps. Certain records of the past, however, prove particularly useful. Gazetteers, a genre that was traditionally highly developed in east Asia, organize data in an explicitly geographical framework and hence lend themselves to cartographic presentation. Equally valuable are actual maps made in earlier periods. By examining historical maps, scholars can determine the spatial knowledge that was available and the geographical conceptions that were prevalent in the period under consideration.

Perhaps the most innovative use of historical cartography in a work of world history is Thongchai Winichakul's *Siam Mapped: A History of the Geo-Body of a Nation* (1994). While Thongchai's focus is Thailand (formerly Siam), his frame is necessarily global in that he is concerned with Thailand's maintenance of independence and its construction of a modern state in the face of French and British imperial aggression.



The earliest extant map of Ming dynasty (1368–1644) Jiangxi Province depicts in precise detail elements of the natural landscape as well as moats, temples, villages, and houses.

Mapping, he argues, was central to this project. The Thai government had to delineate precise boundaries in areas that had previously been ambiguous frontier zones, just as it had to thoroughly map its own internal districts in order to administer them in the modern style. To understand this crucial episode in both Thai and world history, Thongchai found that it was necessary to examine in detail both early maps and their cartographic production techniques.

New Cartographic Techniques

During the twentieth and early twenty-first centuries, advances in cartographic methods have allowed mapmakers to create ever more exact and flexible depictions of the Earth's surface. Although historical cartography has hardly been at the forefront of these technological developments, world historians have put them to good use. Aerial photography was harnessed to the mapmaking effort in the early twentieth century, to be followed at mid-century by satellite imagery. The late twentieth century saw the development of a host of computer-aided techniques

for both making and comparing maps. Novel map forms, such as the cartogram (in which the size of different areas varies in proportion to some measurable feature, such as population) could now be easily generated with the proper software. The same is true, moreover, in regard to unusual map projections. But the most significant cartographic advance of the late twentieth century was the development of Geographic Information Systems (GIS). GIS weds mapping to computerized databases, allowing the ready construction of a large number of map overlays. GIS is particularly relevant for world historical projects focused on the nineteenth and twentieth centuries, when many forms of quantitative data that can be digitized become available. A related technique is animated cartography. Animated cartography makes it possible to portray changes in distributional patterns over time as continuous transformations, much as is done in conventional animation. Animations of the spatial extension of a single phenomenon, such as the spread of Islam during and after the seventh century, are a particularly effective form of world historical pedagogy.

Cartography, in both its traditional and technologically mediated forms, is a powerful tool for portraying and analyzing world historical patterns and processes. If anything, world historians have underutilized mapping and other forms of graphical presentation in favor of textual approaches. By further linking the techniques and concerns of geography with those of history, a richer and more sophisticated understanding of global historical development may someday be gained.

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See also Henry the Navigator; Geographic Constructions of the World

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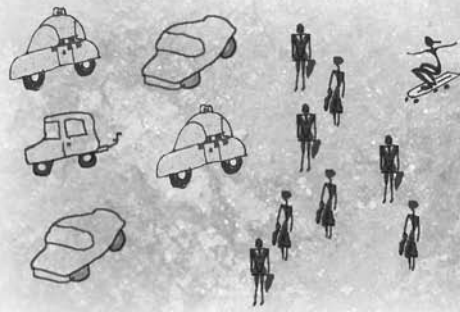
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Catherine the Great

(1729–1796)

EMPRESS OF RUSSIA

Although she was well known for her skilled foreign policy, the German-born Catherine the Great, who ruled Russia from 1762 until 1796, may have been equally well known for her promiscuity and the controversy surrounding her seizure of power. She opened schools to women and granted freedom to the wealthy but refused to abolish serfdom.

Catherine II, also called Catherine the Great, a German princess who married into the Russian royal family, is one of most important leaders in Russia's history. She is well known in the Western world because of her extremely active extramarital love life and because she is speculated to have taken over Russia's throne by killing her husband, Peter III (1728–1762). During her thirty-four-year reign (1762–1796), Catherine the Great ruled as the most powerful and important autocrat in Russia since Peter the Great (1672–1725).

Sophie Friederike Auguste von Anhalt-Zerbst, later Catherine the Great, was born in 1729 to two minor German royals who had no real power or fame. As Sophie grew up, she exhibited a great intelligence. She had a strong tendency toward rational thinking and frequently enraged her tutor by trying to find logical explanations for sacred dogmas. Later, this way of thinking manifested itself in Catherine's passion for Enlightenment philosophy.

In 1744, Sophie's life changed forever when she was invited to St. Petersburg by Empress Elizabeth (1709–1762), who reigned as Russia's czar from 1741–1762, to meet her nephew, Karl Peter Ulrich, later Peter III, the heir to Russia's throne. Upon meeting Sophie, the empress discovered many excellent reasons to choose

her for Peter's bride. Because Sophie's family was so obscure, the empress thought that Sophie would easily renounce her German allegiance. In addition, Sophie was Protestant, and therefore thought to be more willing to convert to the Russian Orthodox faith. True to the empress's supposition, Sophie willingly converted to Russian Orthodoxy and was given the new name Yekaterina (Catherine) Alekseyevna.

In 1745, Catherine married Peter III. Peter III had grown up in Germany and considered himself to be German in every respect. He had an intense dislike for all things Russian. He also hated his wife who, although of German blood, considered herself to be Russian. Catherine, in return, hated her husband. They had one child, Paul (1754–1801), who was raised entirely by Empress Elizabeth. With no real purpose at home or at court, Catherine became restless. She began to take extramarital lovers. There is even some debate as to whether Peter III was Paul's biological father.

On 25 December 1761, Empress Elizabeth died and Peter III was crowned czar. Quickly, he lost favor with his subjects. Upon coming to power, Peter spoke mostly German. He made horrible jokes about Russians. He even changed the Russian army's uniform to look more German. The worst of Peter's early actions, however, came in 1762. Before her death, Empress Elizabeth had been fighting a war with Prussia; after her death, Peter III signed a treaty restoring power to the Prussian king. This stolen victory cemented Peter III's unpopularity with the Russian people.

On 28 June 1762, Catherine initiated an instant, bloodless, and popular coup d'état. Peter, who did not try to resist, was captured and placed under



Portrait of Catherine II, also called Catherine the Great, painted in 1794. Oil on canvas.

The Hermitage, St. Petersburg, Russia.

house arrest. Several days later, he was mysteriously assassinated. Catherine denied complicity. There are a plethora theories about the circumstances under which the deposed czar was murdered. One speculation is that Peter's guards strangled him to death. Another hypothesis is that Catherine's lover killed him on Catherine's orders. Although the truth is not known, those closest to Catherine held that when Catherine received the news of her husband's death, she fainted. She later said, "My reputation is ruined! Never will posterity forgive me for this involuntary crime" (Troyat 1980, 137). Apparently, Catherine was not remotely sad about her husband's death; she was merely nervous about its repercussions on her political career. Publicly, the czar was said to have died of natural causes. Not one person disputed this claim.

When Catherine II came to power, she made it abundantly clear that she would not give up the

throne to her son when he came of age. Catharine's first real success was in foreign policy utilizing the Russian-Prussian alliance. In 1763, King Augustus III (1696–1763) of Poland died. The Russian-Prussian alliance backed the election of Catherine's former lover, Stanislaw II Augustus Poniatowski (1732–1798) to replace him. Because he had no royal ties, Poniatowski remained loyal to his Russian backers. This was a brilliant foreign policy move on Catherine's part. The first of three partitions of Poland had occurred. The second partition occurred in 1793. In 1795, the final Polish partition took place and Poland ceased to exist. Catherine had additional military victories in Turkey, where she led two successful wars in 1768–1774 and in 1787–1791. Those wars, in conjunction with the annexation of the Crimea in 1783, effectively removed the Tartar threat to Russian security and established Russian control over the northern coast of the Black Sea.

Catherine also initiated many influential domestic policies. She improved the dismal situation of women when, in 1783, she put Princess Dashkova (1744–1810) in charge of the Academy of Arts and Sciences. Princess Dashkova was the first woman who was not a part of the royal family to hold any position of power in Russia. In addition, Catherine opened up the first schools for women.

Catherine's main goal for Russia was to reorder and systemize its class structure. To that end, Catherine set out the 1785 Charter of the Towns, which stated that the more wealthy the individual, the more rights that individual would be granted. On the same day, she put out the Charter of the Nobility, which granted various freedoms to the nobility, including freedom from corporal punishment. While Catherine gave a great deal of rights and freedoms to the nobility, she did not free the serfs. About 90 percent of Russia's peasant class was serfs and, while Catherine was against serfdom, she did not abolish it. Catherine knew that the nobles would stop at nothing, including killing the czar, to prevent the end of serfdom.

On 6 November 1796, Catherine died and was succeeded by her son, Paul I. Throughout Catherine's life there had been a deep hatred between mother and son. When Paul came to power, his goal was to exact

I shall be an autocrat, that's my trade; and the good Lord will forgive me, that's his. • Catherine the Great (1729–1796)

revenge on his mother. He did this with his Law of Succession, which eliminated the possibility of any woman ever ruling Russia again. Catherine the Great, therefore, was truly the first and last of her kind, a unique leader in both Russian and world history.

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See also Russian-Soviet Empire

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The Celtic culture as we know it today presides in Ireland, Scotland, and Wales. But some scholars argue that all European cultures stem from ancient Celts, who migrated from what is now Eastern Europe to the British Isles in the ninth century BCE. Known for their military prowess and virtues that may have created the backbone of European chivalry, this rich culture maintains a strong interest for historians and the general public.

The designation “Celts” has traditionally referred to the groups of indigenous European peoples who first inhabited the southernmost reaches of contemporary Austria, Switzerland, and Germany in antiquity. From the ninth century BCE onward, these groups began to disperse widely throughout continental Europe and eventually reached Ireland, England, and Scotland. Although a strong claim cannot be made for the absolute uniformity of social customs among these groups, societal and linguistic affinities among them are sufficient to support the conclusion that they were part of a single cultural continuum.

An identifiable Celtic ethos appears to have emerged in Europe about 800 BCE north of the Alps. Many of its distinguishing practices were inherited from the earlier Urnfield culture (named for its practice of burying cremated remains of the deceased in urns), which flourished from about 1300 BCE to about 800 BCE. These practices included agriculture, metallurgy (particularly in bronze), carpentry, and the manufacture of textiles, weapons (swords, shields, and armor), utilitarian goods (wheels), household utensils (metal cooking ware), and items for personal

adornment (metal bracelets and brooches). Early Celts continued many of these practices. Through time they became known for their proficiency in the mining of ore, their mastery of iron technology, the richness of their folkloric and expressive traditions, their egalitarian view of the relationship between men and women, and their ingenuity.

Providing a precise terminus for the historical span of Celtic culture is a difficult task, in part because many of the culture’s features gradually became part of the national consciousness of those people now living in the United Kingdom and Europe. According to at least one estimate, by the seventh century CE the impact of Roman culture that spread under imperial protection as well as the mixture of ideas and value systems generated by migration and social contact resulted in the loss of a distinctively Celtic ethos in most of Europe. This loss did not occur in Brittany (a region in France), Wales, Scotland, and Ireland. In the United Kingdom, for example, Christianity provided one important institutional matrix within which Celtic traditions were both preserved and transformed from at least the second century CE onward. Nonetheless, some scholars contend that the number of identifiable cultural survivals is sufficient to make the claim that a Celtic core exists for most countries that are part of the European Union. As a result, in recent years many people have reclaimed parts of this heterogeneous tradition both in fashioning pan-European identities and in creating new religious practices that selectively appropriate older Celtic antecedents. Those areas in which the living stream of Celtic folkways and mores has continued to flow—and where vestiges of more archaic customs have been retained with less modern adaptation



A fifth-century Celtic cross, Ireland. The circle surrounding the intersection of the cross has been speculated to symbolize either a pagan sun god or a victor's wreath. Photo by Chris Howell.

than elsewhere in Europe—are confined to Wales, Scotland, Ireland, and parts of western France.

Beginnings

Early Greek sources, beginning during the sixth century BCE, first mention the *Keltoi* people, *Keltoi* being the word from which the English word *Celt* is ultimately derived. Latin sources from the first century BCE onward refer to these people as either *Galli* (from which the Roman word for present-day France—*Gaul*—comes) or *Celtae*. Recent scholarship has noted that Greco-Roman attitudes about the Celts were not monolithic and actually changed through time. During the sixth and fifth centuries BCE the Celts were seen as one of many known indigenous groups. Later, from the fourth to the second century BCE, they were seen as an immediate military threat and classified in pejorative terms. During the second and first centuries BCE they were seen simply as an anthropological curiosity.

Early Celtic culture reached its apex between the fifth and third centuries BCE, a period roughly corresponding with the emergence of the La Tène style of art. The style is named for the archaeological site near Lake Neuchâtel in Switzerland at which artifacts representing it were discovered. La Tène's highly evocative and abstract canons have exercised a profound influence on subsequent Celtic artistic conventions and practices. Highly imaginative representations of

the human form (for example, both the head and the full body) as well as flora, fauna, and creative designs are found on weapons, household utensils, and items used for personal adornment.

Common Traits

Although daily life among the disparate Celtic groups would have been partially shaped by the environmental requirements of their various locales, on the whole the groups appear to have held certain traits in common. Personal hygiene was crucial, and the Celts are credited with the invention of soap. Archaeologists have also discovered items such as mirrors, razors, and combs, indicating a concern for hair care and personal appearance. Both sexes preferred long hair, which women wore in braided pigtails. Men apparently shaved all facial hair, preserving only mustaches. Hunting (with the assistance of trained dogs), participating in competitive games, and feasting were also valued. Celts seem to have paid great attention to the preparation of food. They either boiled or roasted over charcoal meats such as pork and beef. They ate fish, bread, and dairy products. They collected honey, produced mead and beer, and imported wine. They used salt (which was mined in places such as Hallstatt, Austria) for seasoning and as a food preservative. The Celts must have encouraged moderation in consumption, particularly for men, who were expected to maintain optimal physical conditioning. Men and women wore the Celtic equivalent of pants, called *bracae*. Over these *bracae* women wore skirts. Other attire for both men and women included tunics, belts, cloaks, ornamental brooches (to fasten cloaks), and either leather shoes or sandals.

Their personal dwellings were made of wood or stone, and a Celtic city would often be fortified. Such cities, or *oppidas*, could be quite enormous, comprising 300 or more hectares. Married women maintained independence in several areas of life, one of which was the ownership of goods and the other of which was participation in civic life. Women controlled their own property when married, could be designated as tribal leaders, and were allowed to

participate fully in military activities. The Celts were known for their military prowess. Warriors were fond of one-to-one engagement on the battlefield, and standard equipment typically consisted of long sword, spear, lance, javelin, sling, bow, and shield. Celts also used horse-drawn chariots and musical instruments (i.e., the trumpet) in military operations. Heroism and other virtues associated with the conduct of war were cherished parts of the Celtic worldview. Scholars have suggested that such virtues would later become the backbone of European chivalric ideals. Celtic burial practices, which included interring the deceased with items used in daily life, indicate a belief in the continuation of life beyond the grave. Religious life was regulated by a special class of practitioners known as “druids” and seems to have centered on observance of festivals tied closely to the cycle of agricultural activities, and the Celtic pantheon contained numerous deities, many of which were female. Stewardship of Celtic folklore fell within the purview of bards,

who served as entertainers, social commentators, and guardians of historical and mythic traditions.

Given its richness, Celtic culture is likely to engage both popular imagination and scholarly imagination for some time to come.

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Cereal Grains

Until humans learned to remove hulls from the seeds of certain grasses around 9000 BCE, nomadic human populations relied on hunting and gathering for sustenance. Cereal grains yielded large quantities of food from small fields, which meant they could support larger, sedentary populations; their storability and ease of transfer allowed humans to develop more complex societies and governments.

Grains are a human creation because they are simply those grasses (members of the botanical family Gramineae Juss [alternatively, Poaceae Nash]) whose seeds have been selected by humans as staple foodstuffs. The interaction between cereal grains and humans has been fundamental to both in their rise to dominance in their environments. Without cereal grains the human population would likely have remained small—it is estimated to have been less than 4 million in 10,000 BCE—just one species in a widely varied global fauna, instead of becoming the nearly 6.8 billion who in the twenty-first century pervade the environment of the Earth. More than three-quarters of human food today comes from cereal grains, either directly or indirectly as animal feed (one-third of the world's output of cereal grains is used as animal feed). (See table 1 for the increase in grain production since the 1960s.)

Equally, without humans the great cereal grains—wheat, barley, rice, maize—would have remained limited in range and distribution, just grasses among the roughly seven thousand species in the family Gramineae. Perhaps the greatest environmental shift brought about by grains is the shift of the dominant form of vegetation on the planet from trees to grasses.

Grains and Humans

The advantages of grains as foodstuffs have profoundly altered human culture. Grains, although not perfect foods, do contain large amounts of carbohydrates and small but important amounts of proteins (although certain proteins such as lysine are not available in the major grains and must be obtained from other sources). Historically, grains provided large quantities of foodstuffs in a small area—either in the dense wild stands in favorable locations or in the new fields of agriculture—which allowed a much denser human population to be supported in a limited area. This allowed permanent settlements of a size that hunting and gathering had not.

An essential part of the importance of grain is that it can be stored for lengthy periods (rice has been stored over one hundred years), thus providing nutrition throughout the year, compared to the practice of hunting and gathering, which must be carried on continually. Historically, because the labor of agriculture, although intense, was limited to certain seasons of the year, farmers could devote other portions of the year to increasingly sophisticated and specialized pursuits.

The storability of grain also made it a transferable basis of value. As a means of payment, grain made possible the specialization of labor because persons could develop skills and devote their entire time to the production of goods that could be traded to farmers for their surplus grain. In the earliest written records, of both Egypt and Mesopotamia, grain is the prevalent standard of exchange.

The storability and transferability of grain also made possible the beginning of government because

Table 1.*World Production of Cereals* (in metric tons)

	1961	1981	2001
Cereals, Total	877,026,930	1,632,698,810	2,076,828,420
Maize	205,004,683	446,722,107	605,212,620
Rice, Paddy	215,654,697	410,029,013	592,831,326
Wheat	222,357,231	449,673,086	578,931,612
Barley	72,411,104	149,633,191	139,653,609
Sorghum	40,931,625	73,279,991	58,149,772
Millet	25,703,968	26,960,922	29,206,508
Oats	49,588,769	39,888,464	27,278,194
Rye	35,109,990	24,548,192	22,717,722
Triticale		1,405,480	11,675,341
Buckwheat	2,478,596	2,799,060	3,261,403
Fonio	178,483	167,676	265,700
Canary Seed	61,026	85,291	146,730
Quinoa	32,435	26,252	54,500
Mixed Grain	5,983,643	5,581,744	5,232,815
Other Cereals	1,349,700	1,546,069	2,210,566

Source: Food and Agriculture Organization of the United Nations Statistical Databases.

grain was a suitable means of taxation, and taxation is the essential feature of the transfer of wealth for common purposes, a defining feature of government. The earliest government processes probably developed as agriculture was carried from the open hills of Palestine, Syria, and the foothills of the Taurus and Zagros mountains down onto the floodplains of Egypt and Mesopotamia. After the few optimal natural sites had been taken, the scale of work to build and maintain irrigation systems would be beyond the ability of the individual or family. Collective organization would be required both to put irrigation in place and to allocate and protect possession of the irrigated fields.

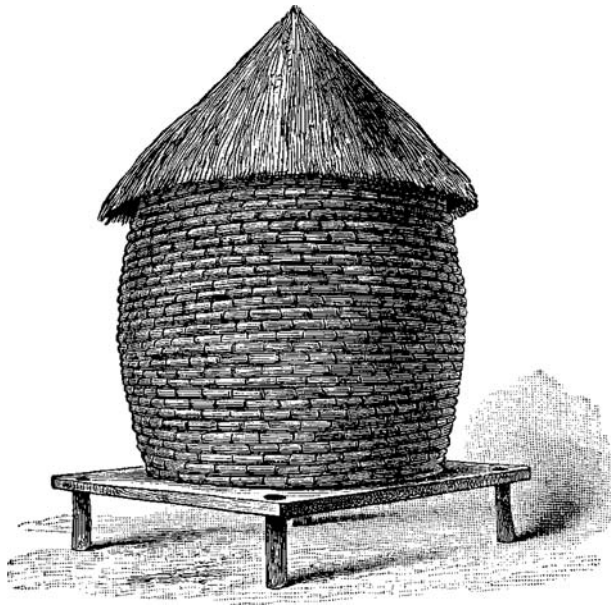
From Grasses to Grains

The wild grains were not a major food of early humans because the seeds, over their desirable starch and protein, have an indigestible hull. Eating any substantial quantity of raw grains would have resulted in acute digestive discomfort (whereas natural grain eaters such as birds have digestive mechanisms to deal with the hull). Not until humans learned the use of tools and fire could they make use of grains. Bruising or grinding could loosen and remove part

of the hull, but it was application of heat, in “parching” or roasting, that was most effective in removing the hull and making the nutritious kernel available. After grains were in cultivation, selection toward “naked” seeded varieties made grains more readily usable.

Some archeologists have suggested that the mortars and pestles found in sites of the Natufian culture in the Fertile Crescent (the area from the southeastern coast of the Mediterranean Sea around the Syrian Desert north of the Arabian Peninsula to the Persian Gulf) from about 10,000 BCE are evidence that people there were gathering and using wild grains. However, because mortars and pestles can be used for grinding many other things than grains, it is better to see the first definite evidence of grain use as being about 9000 BCE, the date of the first archeological discoveries of carbonized grain in human-use contexts. Because fire appears to have been the main early tool for de-hulling wild grains, the lack of carbonized grains at earlier sites make earlier use questionable. Grain gathering encouraged permanent settlement rather than nomadism, so the first known villages arose in the prime grain-collecting arc of the Near East.

Reliance on a secure and concentrated food resource such as grain led the harvesters to try to protect it, driving off animals that were in competition with them for the ripe grain and clearing away plants (the first “weeds”) that might compete with and slow down the growth of the grain. Just when this grain “husbandry” changed to actual agriculture, with farmers selecting and saving seed between seasons, to sow in ground that they had plowed or otherwise loosened, is unknown. However, by about 8000 BCE seeds, altered from the wild strain by selection for tougher rachis, or central stem, (reducing shattering of the ear when gathering) and plumper grains, of emmer wheat (*Triticum turgidum* ssp. *dicoccum*), einkorn wheat (*Triticum monococcum*), and barley (*Hordeum vulgare*) turn up in early Neolithic sites such as Jericho, Tell Aswad, and Cafer Höyük. These are considered clear evidence of cultivation and selection away from the wild grain. By 7000 BCE modern bread wheat (*Triticum aestivum*) is also found.



A nineteenth-century African storage bin for cereals.

Middle East and Europe: Wheat and Its Associates

The original food grains (emmer and einkorn wheats and barley) were initially domesticated in their natural wild range habitat—the Near Eastern arc of open hillsides with yearly rainfall of more than 250 millimeters, lying between forest to the north and arid plains to the south. All of the early agricultural settlements arose in this area, but it is relatively limited. As the success of cultivation and population grew, farmers looked to artificially expand the range suitable for grains, thus starting the process of environmental alteration to suit grains that has continued from that time on. Moving north required clearing the forest because grains do not thrive in shade. Moving south required irrigation of the arid lands to provide sufficient moisture.

Mesopotamian population densities grew first in the low-lying delta area to the east, where the flat land allowed the seasonal waters to be distributed by a relatively simple system of canals. The Sumerian cities of Ur and Eridu, close to the coastline of the Persian Gulf, grew up first in the later fourth millennium BCE, then Uruk, Umma, and Larsa slightly farther inland on the delta. However, the heavy irrigation for annual grain crops caused the water table to rise, and evaporation deposited soluble salts in the soil and raised the

salinity of the groundwater. These events reduced the fertility of the soil. Between 2350 and 1850 BCE crop yields declined by almost half, and seed requirements more than doubled. This was despite a shift in crop concentration from wheat to barley, which is more salt tolerant. The result was a decline of both population and political power for the delta, with the weight of both shifting westward upstream to the river plain region of Mesopotamia, where cities such as Nippur, Kish, and Babylon rose from about 1800 BCE.

This central part of Mesopotamia had greater gradient, meaning that floods had more energy and that stronger and larger-scale canals were necessary to carry the irrigation water out of the river channels. The height of the canal system was reached during Sasanian times (226–651 CE). However, salinization, although less rapid, continued to be a problem. The large irrigation works were liable to break down in times of natural or human crisis, leaving large areas of land to revert to desert. This happened in the years after the Arab conquest of Mesopotamia in 637 CE, when high floods combined with political change caused the elaborate canal system to collapse by 1000 CE, greatly reducing the cultivated area and population in Mesopotamia.

In Egypt fewer problems arose. The annual flooding of the Nile River flushed the salts from the soil, and the grain crops watered by the flooding flourished, supporting long-term production, which continued robustly enough to allow export of much of the grain that fed the urban population of imperial Rome. Failure of the Nile floods could result in famine and chaos, however. It has been suggested that the break between the Old and New Kingdoms of Egypt was caused by repeated flood failures between 2200 and 2000 BCE.

The Near Eastern system of agriculture based on barley and wheat spread through the Mediterranean, southward to the Ethiopian plateau, and eastward to India, flourishing in the areas where conditions were similar to the original Near Eastern arc or where forest clearance readily made them so.

During late antiquity and the early medieval period the introduction of the heavy moldboard plow

Let nothing which can be treated by diet be treated by other means. • **Maimonides (1135–1204)**

allowed plowing and planting of the heavier and wetter northern soils of northern and western Europe. Previously the arable (suitable for cultivation) lands there tended to be confined to the uplands, where the soil was lighter and the forest thinner. Now, with the new plows available, there was a fresh assault on the forests of Britain, Germany, and central Europe as they were cut down to make plowland (such as the “assarts” of England). The net result was a loss of forest cover—England, originally a heavily forested country, gradually changed to open land—and the growth of population and shift of power to northern Europe. However, the more northern location meant greater emphasis on the “coarse” grains (barley, rye, and oats), which have shorter growth periods. Rye (*Secale cereale*) and oats (*Avena sativa*) had been of minor importance before but now became staples in the more northern parts of Europe. There were serious side-effects: ergot, a common fungus attacking rye, when eaten in contaminated bread, causes ergotism, called “St. Anthony’s Fire” in medieval times. The afflicted suffer convulsions and hallucinations, and many die. The modern psychoactive drug LSD was developed from one of the alkaloids in ergot.

The deforestation push continued eastward as German colonists moved into Prussia and eastern Europe during the tenth through the thirteenth centuries, converting the primitive forest to wheatland and enriching the Hanseatic League of northern European merchant towns, which prospered by selling the grain produced. Then, as the European powers expanded during the sixteenth through the nineteenth centuries, wheat conquered the world as an important part of the mechanism of colonial dominance in North and South America, southern Africa, and Australia.

Eastern Asia: Rice

Rice (*Oryza sativa*) is the most important of the world’s grains, being the staple food of almost half of the world’s population. Although rice can grow in a variety of environments, “paddy” or “wet” rice (grown in artificially flooded fields) accounts for about 75

percent of production. “Dryland” or “upland” rice accounts for 10 percent, and “deepwater” rice (grown in water depths of more than 50 centimeters) accounts for the remaining 15 percent. Wet rice cultivation has had the most visible environmental effect, with its leveled terraces and surrounding dikes rising far up the mountainsides, reshaping the landscapes of China and Indonesia.

Domesticated rice originated in the uplands region running through Assam, northern Burma (Myanmar), northern Thailand, southwestern China, and northern Vietnam. However, the earliest archeological finds of cultivated rice, dated to about 5000 BCE, are from Hemudu in the lower Yangzi region of central China. By 3000 BCE the range of rice cultivation had spread through southern China and the northern part of Southeast Asia. Rice cultivation reached India by about 1500 BCE and Japan by about 300 BCE.

The extension of rice into the equatorial zone did not take place until the discovery of photo-insensitive (day-length neutral) strains whose development did not depend on seasonal triggers. The spread to the Malay Peninsula and the Indonesian Archipelago was therefore rather later, probably not until the middle of the first millennium CE. There the shift from swidden (slash-and-burn) cultivation of dryland crops such as millet to *sawah* (wet rice) cultivation led to greater population densities (a field of 1 hectare could support a family). This allowed surpluses necessary for urban development and trade and therefore the appearance of powerful states such as Srivijaya (southeastern Sumatra, seventh to tenth centuries) and Majapahit and its precursors (Java, eighth to fifteenth centuries).

Rice was not the first agricultural crop in its realm—proso (*Panicum miliaceum*) and foxtail (*Setaria italica*) millets preceded it in China; Job’s tears (*Coix lachryma-jobi*), tubers, and fruits preceded it in southeastern Asia and Indonesia. However, over time rice became the preferred grain, replacing the other crops. Intensive rice cultivation, with an increase in population density and effects on social and political structures, started in China in the third century BCE, and rice as a dominant crop spread outward. As



a food it was so much preferred that huge quantities were traded or transferred to nonrice-growing areas. The Grand Canal system of China, over 1,000 kilometers long, was built in the early seventh century primarily to carry tax rice from the producing areas of the south to the Sui dynasty capital in Daxingcheng in northwestern China. In 1011 the Chinese Emperor Zhenzong ordered the distribution of a new kind of rice seed imported from Champa (in modern Vietnam). It had the advantages of maturing quickly, allowing double-cropping in some areas, and also was drought resistant and thus could be planted in higher and more northerly areas.

The spread of both rice cultivation and rice consumption has continued to the present. During the colonial era cheap bulk shipping opened vast commercial markets and caused ever-increasing conversion of land to rice production. For example, between 1855 and 1905 rice area and production in the Burmese delta multiplied roughly tenfold, exporting 1.8 million metric tons annually by 1905. In the past two decades rice has overtaken wheat as the most-produced food grain.

The Americas: Maize

Maize (*Zea mays*) is commonly known in North America as “corn” but is more fittingly referred to as “maize” because “corn” means any cereal grain in Britain and much of the rest of the world. The great cereal staple originating in the Americas, maize is high in carbohydrates and fats but low in certain proteins and vitamins. It made a successful staple when complemented in the diet with beans and squash, as it was and is in the Americas. During the post-Columbian era, maize was introduced to the Old World and adopted as a staple foodstuff—but without those complementary foods—and diseases such as pellagra (deficiency of vitamin C and nicotinic acid) and kwashiorkor (a protein deficiency) have been the result of heavy dependency on maize alone.

Maize is a heavy feeder, quickly depleting the soil of nutrients. Its cultivation in the Americas and later

in the Old World has encouraged the type of agriculture known as “shifting cultivation” (slash and burn), where an area of forest is cleared, maize is grown for a few seasons until the fertility of the soil is exhausted, then the field is abandoned, and the farmer moves on to clear new fields.

The origin of the cultivated species of maize has been debated among scientists for over a hundred years because modern maize is so highly developed, with tight-fitting husks completely covering the grain on the ear, that maize is no longer capable of dispersing its seeds without human assistance. Botanists did not find wild maize clearly ancestral to the cultivated plant; therefore, they speculated that maize was descended through chance mutation or human selection from other related plants that do grow wild, particularly one known as “teosinte.” However, the recent discovery in Mexico City of maize pollen over eighty thousand years old, dating long before human occupation of the continent, has swung the argument to the side of an original wild maize, rather than mutation or selection from teosinte.

The earliest evidence of human use of maize, either gathered from the wild or in the early stages of domestication, dates to about 5000 BCE in northern Mexico. By the third millennium BCE maize was definitely cultivated in northeastern Mexico and the southeastern United States. By about 1500 BCE the nixamalization process (soaking and cooking the grain with lime or wood ashes, which makes the grain easier to grind and enhances its protein value) had been discovered, increasing maize’s desirability as a foodstuff. Whether maize was transferred to the Andean region from Central America or separately domesticated there is uncertain, but from these two areas the cultivation of maize spread through most of the Americas, being the basis of agriculture and increased population wherever it spread.

Columbus discovered maize on his first voyage to America, and the seeds taken back were soon spread through the Old World. Maize became a major crop in Italy, the Balkans, the Near East, and as far as

China. In Africa, in particular, it became the staple crop of much of the continent.

Africa: Millets

Africa is different from the other continents in having not a single dominant grain, but rather a range of localized grains, most of which are categorized as millets. Millet is not a single grain species, but rather includes many small-grained species, from several genera, tolerant of high temperatures and low moisture. Millets are cultivated widely across Eurasia, especially in India and China, but are most prominent in sub-Saharan Africa, where the “imperial” grains are less dominant.

Domestication of grain crops appears to have occurred independently in various areas of Africa and rather later than on the other continents. Extensive gathering of wild grass seeds continued until about a hundred years ago.

The main crop of the Sahel (semidesert southern fringe of the Sahara Desert) and dry savanna is pearl millet (*Pennisetum typhoides*), which is most drought resistant of all millets. In the tall grass savanna, sorghum (*Sorghum bicolor*) is the most important food crop. Both pearl millet and sorghum were domesticated by 2000 BCE, and both were spread to India at an early date. The east African highlands have their own preferred grains: finger millet (*Eleusine coracana*) and teff (*Eragrostis tef*), the smallest seeded of all millets, which is the most popular food grain in Ethiopia but almost unknown outside that country.

Western Africa also has African rice (*Oryza glaberrima*), descended from wild rices that grew in water holes that dried up in the dry season. African rice is now largely replaced in cultivation by oriental rice. After 1492 maize also became an important food crop, especially in the southern half of Africa.

Imperial Grains

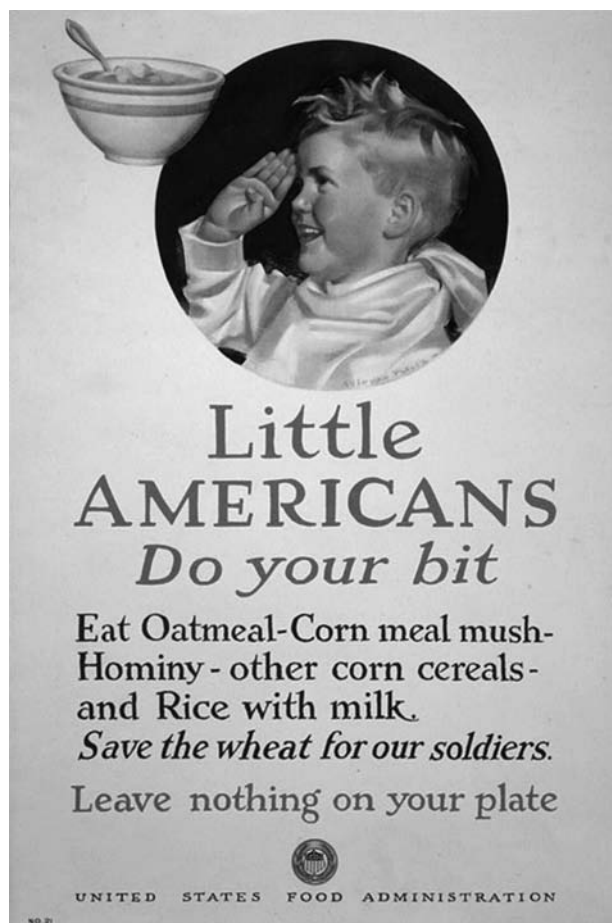
Three grains—wheat, maize, and rice—have most suited the conditions created by the European expansion of the sixteenth to eighteenth centuries and the

Industrial Revolution of the nineteenth and twentieth centuries. Urban growth in the industrializing nations was facilitated by the new global transportation networks. A major impetus for the growth of European colonial empires was the need for cheap foodstuffs for the factory workers of the European countries that no longer grew enough for their own needs. Also, in these colonies the emphasis shifted from subsistence farming to commercial cash-crop agriculture producing for export. This encouraged monoculture, with farmers in each region concentrating on the single crop that would yield them the highest monetary return. However, monoculture, in addition to creating “best conditions” for production of high yields, establishes “best conditions” for diseases and pests that live on the grains.

North American Wheat “Imperialism”

The case of the North America prairies may be taken as typical of the environmental results of the vast expansion and intensification of grain growing in the modern era. Similar results may be seen in other cases, such as Russia’s Virgin Lands development projects of the 1950s and 1960s, China’s agricultural and industrial Great Leap Forward of 1958–1961, and the jungle clearing still going on in Brazil.

From the start of European settlement in North America, there was concentration on wheat growing in New England and the central U.S. colonies. After the American Revolution, agricultural settlement, accompanied by massive deforestation, expanded across the Appalachian Mountains into the interior east of the Mississippi River. After the U.S. Civil War and after Confederation in Canada in 1867, the North American frontier moved westward onto the open Great Plains, ideal for grain monoculture. However, the northern areas, especially on the Canadian prairies, were restricted by climate to mixed farming because successful harvests of the most desired grain, wheat, were unreliable. However, new strains of wheat—such as Marquis wheat introduced in 1911, which ripened eight days faster than the previously standard Red Fife strain—allowed monoculture of wheat even in the North.



This World War I poster, created by Parker Cushman for the United States Food Administration in 1917, urges “little Americans” to do their bit for the war effort.

Between 1860 and 1913 the Great Plains turned to grain, largely wheat. The Great Plains became the great “bread basket,” supplying the hungry cities of Europe and providing capital for North American development. However, the cheap wheat from North America (and similar plantings in Argentina, Australia, and Russia) impoverished farmers in Europe and tended to drive the other traditional grains out of production in those countries.

The environmental effects of the wheat monoculture were both varied and significant. The Rocky Mountain locust (*Melanoplus spretus*) was one of the two major herbivores on the Great Plains in the 1870s (the other was the bison). By 1900 both were gone, unable to survive in the changed conditions. Not that farmers could rejoice, though, because other species of locusts and grasshoppers, previously insignificant, replaced them with equal voracity. Locusts and grasshoppers

today cause losses of more than \$100 million on the Canadian prairies alone and require hundreds of thousands of liters of insecticides for control.

The near-continuous planting of wheat, from northern Mexico through the prairie provinces of Canada, created ideal conditions for the rust fungus, which has established a yearly “migration” pattern of over 4,000 kilometers. Infection starts out each year in northern Mexico. Spores are blown northward through repeated generations. Rust cannot overwinter at the northern end of the wheat belt but arrives each year from the south; it cannot oversummer in the southern end, so spores must be blown southward in the fall to infect winter wheat there to start the next year’s cycle. Efforts have been made to defeat this cycle by breeding new “rust-resistant” cultivars (organisms originating and persisting under cultivation) of wheat, but each new version has only a limited usefulness until the rust evolves new strains that are not protected against.

The loss of the native grass cover (the prairie sod), destroyed by the annual plowing and harrowing, meant that when drought came, especially in those drier areas marginal for agriculture, the soil had nothing to hold it and blew in millions of tons. Desertification resulted from efforts to extend grain farming into ever more marginal areas. The first bout of droughts hit the U.S. central plains in the 1870s and 1880s, resulting in a short-term exodus of population. The area was resettled after a series of wetter years. Then came the drought years of the later 1920s and 1930s, resulting in the Dust Bowl of Oklahoma and surrounding states and the exodus from the parched region. Similar conditions prevailed in the Palliser triangle of southern Saskatchewan and Alberta, Canada, where grain yields dropped by over 75 percent.

In more recent years efforts to alleviate drought risks by irrigation have led to groundwater supplies rapidly being used up because wells need to be drilled deeper and deeper.

Scientific Breeding

From the late nineteenth century onward scientific breeding, based on genetic principles, superseded



older methods of new grain selection. This produced dramatic results such as Marquis wheat, which, with its shortened ripening time, allowed wheat monoculture on the Canadian prairies. In the 1930s the first “artificial” grain was created—triticale, a cross of wheat and rye—which was heralded as a new wonder grain because it contains more protein than either parent, but it has not lived up to the promises.

Since the 1940s selections of HYV (high-yield varieties) maize, rice, and dwarf wheat have driven what is known as the “Green Revolution,” aimed at tropical and subtropical areas of Asia, Africa, and Latin America. The Green Revolution led to great increases in production but required heavy use of machinery, fertilizer, and pesticides (leading to increased concentration of production in the hands of larger-scale and higher-capitalized farmers and to loss of strain diversity). Also, many of the new hybrids either had built-in sterility or did not breed true, so seed could not be saved but rather had to be bought.

Most recently, genetic modification (GM) techniques have allowed plant biotechnologists to create desired characteristics not available by conventional breeding by altering genes or introducing genes from other plant species. This has produced such plants as maize with built-in tolerance for herbicides, valuable for large-scale mechanized agriculture. But problems have arisen with the drift of these genes to other strains of maize and other unexpected results—maize strains with built-in defenses against harmful insects are also toxic to butterflies.

The commercialization of plant breeding has also led to issues over “ownership” of plant genetics and strains and limitations on genetic diversity as commercial operations, especially in the United States, have tried to pressure farmers around the world to use patented seed.

Although pollution from traditional agricultural activities has long existed, artificial fertilizers, synthetic pesticides, and herbicides brought into use during the twentieth century changed both the

nature and the scale of the problem. Because grains are the largest agricultural crops, grains have also accounted for the largest use of these chemicals. Soils themselves may be subject to damaging build-ups of these chemicals or their derivatives, but larger effects come from runoff and leaching into the water system. This is particularly the case with rice because its culture requires regular flooding and draining of the rice paddies. The “miracle rices” of the 1960s onward, which give best results only with heavy fertilization and pest control, have worsened the problem.

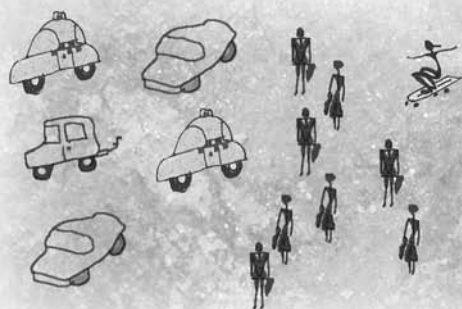
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See also Agricultural Societies

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Charlemagne

(742–814 CE)

KING OF THE FRANKS AND EMPEROR IN WESTERN EUROPE

Charlemagne's influence in both political and social spheres was so great that historians have nicknamed him the "father of Europe." His use of military force and ability to improvise new systems expanded a struggling western Europe into a strong empire. Additionally, his emphasis on learning created a Carolingian Renaissance that helped form cultural identity in western Europe and laid the groundwork on which the Middle Ages flourished.

Charlemagne, whose name means Charles the Great, reshaped early medieval Europe by uniting most of Latin Christendom and contributing to the preservation of classical Latin learning, thereby laying the foundations for political and cultural developments in Europe for centuries to come. He ranks among the most important individuals—along with Heraclius of Byzantium, Muhammad, and Sui Wendi (founder of China's Sui dynasty)—who contributed to shaping the post-classical Eurasian world. The Latin form of his name, *Carolus*, gives us the adjective *Carolingian*, which describes his empire and the historical period.

Charles was the elder son of Pepin the Short and the grandson of Charles Martel, both rulers of the Franks, a West Germanic people occupying Gaul and some other lands west of the Rhine River. After a brief succession struggle following his father's death, Charles assumed control of the Frankish realm in 771 CE. He then embarked on the career of conquest and consolidation that earned him the cognomen "the Great." Nearly forty years of Charles's campaigning brought large new areas under Frankish rule. Charlemagne's efforts were crowned, literally,

on Christmas Day of 800 CE, when Pope Leo III bestowed the title of "Emperor of the Romans" on him. Even the Byzantines, to whom that title had previously been reserved, had to acknowledge Charlemagne's position as emperor in the West, for by this time he ruled virtually all of western Europe except Iberia and the British Isles. He died in January 814 CE, leaving his empire to his only son, Louis.

Charlemagne came of age at a time when western Europe was only a shadow of what it had been at the height of the Roman Empire: the economy was underdeveloped and currency was in short supply; communications were slow and difficult; literacy was at a low ebb; and political power had become both fragmented and privatized. Despite these unfavorable circumstances, Charlemagne's dominating physical presence, tirelessness, personal and political persuasiveness, and his ability to improvise systems of administration from limited resources allowed him to create a large empire through the use of military force. But the edifice proved fragile. The empire began to suffer from Viking invasions even before the king died, and factionalism increased during his son Louis's reign. When Louis died, in 840 CE, he divided the empire among his three sons, who fell to warring among themselves. The three kingdoms disintegrated rapidly thereafter, under combined internal and external stress.

Clearly, the fate of Charlemagne's empire is further evidence of the central role the king's person and personality had played in creating and maintaining it. Some of Charlemagne's administrative techniques, especially the granting of land ("fiefs") instead of a salary to his officials in return for their service and the use of itinerant royal inspectors to supervise those



Albrecht Dürer, *Emperor Charlemagne* (c. 1512). Oil and tempera on panel. Germanisches National Museum, Nuremberg.

landed local officials, survived in fragmented form as building blocks for the rulers of later ages. Above all, the emotional legacy of a powerful, just ruler and a unified Christendom survived as a political ideal for most of the Middle Ages in Europe. This emotional legacy was reinforced by Charlemagne's even more lasting achievements as a cultural leader.

Unlike the great majority of his contemporaries, Charlemagne believed he had a duty to rule for the benefit of his subjects, and he earnestly pursued the intellectual and spiritual improvement of his realm. He attracted scholars from across Europe to

his court, the most prominent being his biographer Einhard and the British monk Alcuin; he promoted church reform and supported missionary activity in conquered lands; he instituted educational reforms, especially at the level of monastic schools, whose transcriptions were responsible for the preservation of many classical texts; and his court instituted an important reform in handwriting, as the script of the time was nearly illegible. The Carolingian minuscule script that resulted was such a model of clarity that it became, through its revival by Renaissance scholars, the basis for modern print typefaces.

To have another language is to possess a second soul. • **Charlemagne (742–814)**

Charlemagne's impact on cultural affairs was perhaps even more striking than his political and military achievements, because he was trained in the latter but not the former. He learned to read only as an adult, and he never learned to write; yet he took a keen interest in literature, learning, and even Church doctrine. In addition to his native Germanic tongue, he knew Latin and a bit of Greek. Through his personal example and by providing a hospitable environment for scholars, he fostered what historians have come to call the Carolingian Renaissance, a crucial stage in the formation of the western European cultural identity. This achievement, made possible by the extent and influence of his empire, justifies Charlemagne's reputation as the "father of Europe."

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Charles V

(1500–1558)

HOLY ROMAN EMPEROR

As heir to the Castilian crown and the Holy Roman Empire, Charles V inherited rule over a great deal of Europe in 1519. His refusal to delegate power, his rejection of Protestantism, and wars to the east and west left a fragile, bankrupt empire in the hands of his successor.

Charles V (b. Ghent, Belgium, 24 February 1500; d. Yuste, Spain, 21 September 1558) ruled over about 28 million subjects in Europe, or some 40 percent of the continent's population, from the time of his election as Holy Roman emperor on 28 June 1519 until he gradually abdicated power in the fall and winter of 1555–1556. Moreover, during his reign, Hernán Cortés conquered Mexico (1519), and Francisco Pizarro subjugated Peru (1530–1532). These expeditions were carried out in Charles's name, as both King Charles I of Castile and Holy Roman emperor. They led to the creation of colonies in the New World, ruled directly from Spain in the interest of the Castilian crown.

A series of dynastic events made Charles the sole heir of an extraordinarily large number of countries. His father, Philip the Handsome, son of the Holy Roman emperor Maximilian I, of the house of Habsburg, ruled over the Low Countries and then in 1504 also became king of Castile, on behalf of his wife Joan; he died in 1506. At the death of Charles's maternal grandfather Ferdinand, in 1516, Charles was to inherit the crowns of Castile and Aragon from Ferdinand and Isabella (who died in 1504), thus uniting for the first time the two Spanish kingdoms under a single ruler. Moreover, the Aragonese legacy also included the kingdoms of Sicily, Naples, and Sardinia,

as well as the Balearic Islands. Control over all these territories implied hegemonic power over the western Mediterranean. In September 1517, Charles arrived in Spain to be inaugurated by the *cortes* (assemblies of estates) of his various kingdoms. Having been educated in French, and being surrounded by councillors from his northern territories, he experienced great difficulties in gaining control of his situation and having his authority accepted. As a reaction against decades of bad governance and the intrusion of foreign councillors, revolts broke out in various cities in 1520, lasting until 1522.

The death of Charles's paternal grandfather, Holy Roman emperor Maximilian, raised a new challenge in 1519. Although other German princes, especially Elector Frederick the Wise of Saxony, might have been chosen to succeed him, the House of Habsburg strove to keep the title in the family. And although Ferdinand (the younger son of Philip the Handsome) might have been more available than his brother, the king of Spain, Sicily, Naples, and a variety of other lands, Charles nevertheless insisted on his primogeniture with the argument that the fearsome expansion of the Ottoman Turks required all Christendom to unite. Important political concessions were made to the electors and huge sums were spent to bribe them.

Charles managed with great difficulty to keep his empire together, even adding to it the duchy of Milan in 1535, and winning control over or alliances with the other powers in Italy, but he obviously was a victim of imperial overreaching. He tried to keep all decisions in his own hands, keeping in close contact by correspondence with members of his family



Seisenegger (court painter of King Ferdinand V in Augsburg), *Portrait of Charles V* (1532). Oil on canvas. Kunsthistorisches Museum, Vienna.

and the high-ranking noblemen he had installed as regents, governors general, viceroys, and councillors in the territories where he was unable to reside in person. Further, he was convinced that he had to deal with the most urgent matters personally, which forced him to travel around Europe nearly constantly. This created long delays in decision-making processes in the other territories (in which he was not currently traveling).

The main challenge to his authority arose from his ambition of keeping all his subjects loyal to the Catholic Church in a time when religious reformers were rapidly gaining followers, while the church hierarchy proved highly unwilling to understand the need to reform itself. Charles finally lost this battle, especially in the German Empire, where several princes turned to the Reformation for reasons that had as much to do with faith as with their desire for autonomy. He was late to understand the gravity of the challenge Luther had launched against him personally at the Diet of Worms in 1521, and slow to react to it, mostly because of the multiplicity of his duties. He saw no other method of dealing with the Reformation movement than to postpone decisions, make provisional concessions, and try to convince the pope to convene a general council. When the Council of Trent finally opened in 1545, its first decisions were totally unacceptable for the Protestants, who had been strengthening their positions for nearly three decades. Charles was never able to accept the Religious Peace of Augsburg that his brother Roman King Ferdinand (since 1531) negotiated with the Diet in 1555, and he sent his letter of abdication to the Diet during its meeting in 1555. However, they did not choose his younger brother as his successor until 1558.

The second major challenge of Charles's reign was the external military threat from France and the Ottoman Empire, sometimes even in conjunction with each other. His nearly continuous efforts to build fortresses and to mount campaigns with ever larger armies exhausted his subjects' resources, including those of his colonies, and finally left his successor Philip II—who succeeded him in his Spanish and Italian kingdoms and in the Low Countries—with a bankrupt state. Charles's reign showed the impossibility of keeping western Christendom united politically and ecclesiastically, and his failure to understand this caused his demise.

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Child Nurture

Human populations sustain themselves through child nurture, the passing on of skills and rules for behavior. Villages, in which children learn by imitating adults, have historically been more nurture-friendly than cities. Projections of falling populations worldwide reflect the disruption of nurture in industrialized societies; the biological and cultural continuity of humankind remains at risk until a viable urban substitute for traditional village communities can be found.

We commonly take the succession of generations for granted. Ever since our species diverged from ancestral life forms between 200,000 and 130,000 years ago, children everywhere grew up to become very much like their parents. Behavioral change was never wholly absent, but came so slowly that continuity of experience—a “cake of custom,” as nineteenth-century anthropologists called it—united successive generations. Despite enormous local diversity, human populations sustained themselves successfully in radically different climates and continents. Local disasters were never so great as to reverse the long-range trend toward population increase.

Nurturing Environments

This continuity depended on reliable forms of nurture that allowed for passing on of time-tested skills and rules for personal and collective behavior to the rising generation. As long as the great majority of human beings lived in small, semiautonomous groups—first itinerant bands of hunters and gatherers, then in agricultural villages and pastoral nomadic communities—nurture took care of itself. The daily round of everyday

life allowed, indeed required, children to watch and learn to help their elders as the adults around them did whatever needed to be done. Within each family, imitation of parents and older children came naturally. Instruction and correction was inseparable from everyday work and play. Accordingly, within a few years helpless infants were transmuted, as it were automatically, into useful assistants and then into responsible adults capable of nurturing children just as effectively as they had been nurtured themselves.

To be sure not all was serene. There were always times of crisis when food ran short and people died of starvation and disease. Farmers were rather more vulnerable than hunters and gatherers whose food sources were more various and who were also less exposed to disease. For farmers, bad weather or blight might cause crops to fail, epidemic disease might break out, or armed raiders make off with the harvest. As a result, death and depopulation often ensued locally, but survivors remained after even the most severe disasters. Time and again they started up again, producing the food they needed in accustomed ways and giving birth to children who carried on more or less as before.

The Burden of Civilization

The rise of cities and civilization, beginning after 3500 BCE in few propitious environments where population was unusually dense, put a new burden on village life. City dwellers did not raise the food they consumed; instead they compelled villagers round about to part with a share of their harvest in return for always imperfect protection from disaster. Initially, specialized priests undertook to safeguard



Indigenous man, woman & child, an engraving of a 1654 drawing. In village societies throughout history and across cultures, children learn by imitating adults.

the rural population from supernatural anger by collecting a share of the harvest to sustain monumental temples where they propitiated the gods with prayer and splendid ceremonies.

Subsequently, when human raiding became a more serious threat, specialized warriors, equipped with expensive armor and metal weapons, undertook to protect the rural majority from outsiders, demanding part of the harvest for their support in return. Priests and warriors then proceeded to negotiate an unstable, ever-fluctuating balance of power (and flow of income) within the cities and civilizations of Eurasia and the Americas.

Simultaneously, artisans and merchants also carved out urban niches for themselves: only so could priests acquire precious goods to please the gods; only so could warriors secure the armor and weapons they required. That, of course, added to the number of humans dependent on food transferred from villagers to urban consumers by a combination of rents, taxes, and, just occasionally, sale of a metal tool or the like to villagers in return for food or some needed

raw material they were able to provide for city folk to use.

Tumultuous political rivalries and sporadic organized warfare ensued in all civilized lands. Warfare cost rural populations dearly. Nevertheless, the fabric of civilized society was sustained across millennia by flows of food and of manpower from hinterland villages to cities nearby. Food transfers were central and conspicuous. Manpower was just as important but less obvious, since most migrants came individually and voluntarily.

Cities seldom or never sustained their population biologically. Intensified lethal infections were, or soon became, too great. Without effective garbage disposal, contaminated water was the norm; and strangers bringing supplies of precious goods from afar carried with them whatever new infections were in circulation, even across long distances. A second reason for urban failure to reproduce was that most humble urban occupations were inimical to marriage and family formation. Masters seldom allowed domestic servants to marry and raise children, for example. Sailors and caravan attendants were always on the move and unlikely to form families of their own. In general, most unskilled migrants from the countryside probably found it hard to acquire sufficient income to raise children. Newcomers were especially liable to lethal infection and early death because they lacked childhood exposure to many urban infections.

Nurture-Sustainable Villages

What made cities and civilization sustainable was that village farmers married young and usually raised more children than were needed to keep the village going. In village communities traditional division of labor between men and women depended on marriage. From a very early age children began to contribute to family income by helping in the house and fields. Moreover, in old age parents could count on their adult children to look after them even when they could no longer do much useful work. Finally, the uncertainties of life, especially in infancy and old age, meant that a plurality of children was needed



to ensure sufficient family help lifelong. With such incentives, sexual instinct sufficed to guarantee high birth rates in nearly all villages, even, or especially, under precarious conditions, when sudden death from famine, disease or violence was commonplace.

But persistent rural fecundity carried risks of its own. In particular whenever war, famine, or pestilence failed to wreak their havoc for a decade or longer, land shortages were likely to arise. As children matured, apportioning rights to cultivate specific fields and gardens among a plurality of potential heirs was always problematic. Marriage involved formal transfer of land rights from one generation to the next. Parents of both bride and groom nearly always contributed to the support of each newly married pair through some sort of negotiated dowry or bride-price system. But dividing land sufficient to support a single family among numerous children was usually impracticable.

Sometimes fertile and unoccupied land existed within reach, and for a generation or two surplus children could make a good life by bringing it under cultivation, but such circumstances were unusual. Long term, the effect was to expand cultivated areas and civilizations at the expense of less formidable societies, but thinly inhabited and accessible frontier regions filled rather rapidly. Land shortage was merely postponed, not solved.

Sometimes new crops or some new technique could produce more food than before, allowing families to survive on less land. But that too was exceptional, usually meant harder work, and seldom assured a satisfactory livelihood for extra children within existing village boundaries.

When commercial connection with the wider world came on stream, villagers could sometimes use spare time to work at home, spinning or weaving for example, or making something else for sale in town. That assimilated their lives with those of town artisans who were dependent on market prices to earn enough money to feed themselves. Hybrid farmer-artisans tended to become more numerous as transport improved. The stark alternatives earlier generations of peasants had faced when land shortages arose blurred accordingly but never entirely disappeared.

But the gradual intensification of commercial farming and spread of artisan activity to the countryside also weakened village solidarity and diminished local independence. Some rural families got richer; some lost their land and became wage laborers working for someone else. Consequently, the social rivalries and economic inequalities of city life spread to villages in some degree or other. Having many children became not a guarantee of family security but a guarantee of poverty.

Affects of Migration

Peasant rebellions were a desperate form of response to such circumstances. Nearly always they failed, after provoking the horrors of civil war. A more common rural response was to send extra children off to seek their fortune in nearby towns and cities. There they competed with other rural immigrants for unskilled work and only occasionally established families of their own. Few ever attained a satisfying life in their new environment, yet their presence often sufficed to maintain urban populations and made sure nasty jobs were adequately staffed. In early times, voluntary recruitment from the countryside often fell short, whereupon urban populations regularly resorted to compulsion, bringing enslaved strangers from afar to do work no one would do voluntarily.

The balance between forcible enslavement and voluntary migration fluctuated irregularly. In Eurasia slavery tended to diminish as hinterlands expanded and filled with a prolific peasantry. But when the Americas were depopulated after 1492, primarily by wholesale transfers of Eurasian and African diseases, slavery expanded once more. Millions of enslaved Africans were carried across the Atlantic and compelled to work in American mines and on sugar and cotton plantations. Black slavery remained a basic feature of American societies until 1865 in the United States and was abolished in Brazil only in 1888. Its aftermath still lingers among us.

The long-range civilized record shows that nothing guarantees a stable balance between human numbers and the means of subsistence. Epidemics and warfare could reduce local populations drastically—by

a third or more within as little as two or three years. Thereupon, the resilience of village living restored human numbers time and again. In the long term, sporadic discoveries of new, more productive crops and improved techniques of cultivation, together with the creation of other forms of wealth, permitted total human numbers to creep upward. That record is truly amazing. Across the millennia we enlarged our control over Earth's energy flows as no other species has ever been able to do, thanks to our changeable behavior and restless ingenuity.

Looking at the Future: Statistics and Trends

Recently, the multiplication of human numbers reached a climax that is almost certain to remain unmatched in time to come. Environmental limits seem sure to prevent anything like the four-fold increase of human population that occurred in the twentieth century. Shortages of fresh water and of cultivable soil are already apparent in many parts of the Earth. Even more to the point, urbanized populations are not reproducing themselves today. The reasons are somewhat different from those that used to prevail, but are no less compelling.

Beginning a discussion of the future requires the help of a few figures. First of all, world population continues to grow at a decreasing, but still very rapid rate. United Nations estimates project that between 2000 and 2050 human numbers will swell by 2.6 billions—"a net increase larger than the total world population in 1950" (Demeny and McNichol 2006, 255). Subsequent numbers also come from this source. But U.N. demographers also project that in developed (that is, wealthy and urbanized) countries births will fall significantly short of deaths across the same period of time. Europe is the principal region where populations are failing to reproduce themselves today. In 2005, the total number of persons living in Europe was about 728 million—including millions of recent immigrants from poorer lands. By 2050 that total is projected to shrink to about 653 million, due to shortfall in births.

Disruptive Patterns

What lies behind these statistical facts and projections is the disruption of traditional patterns of nurture in European villages. The process began long ago with the gradual expansion of commercial farming and the spread of new crops and methods of cultivation. More recently, two world wars, 1914–1918 and 1939–1945, disrupted rural and urban routines of life throughout Europe. Then after 1950, improved roads and electricity, together with radio, TV, and computers, brought familiarity with urban lifestyles to all, or almost all, European villages.

The effect on village communities was drastic. Innumerable children coming of age were no longer content to follow their parents' ways of life. Emigration to towns and cities seemed more attractive, and the countryside began to empty. In flat and fertile landscapes modern machinery allowed relatively few large-scale operators to raise crops that once had required hand labor. In poor hill villages fields were often abandoned and drastic—even total—depopulation ensued.

Simultaneously, the spread of new methods of birth control allowed sexual intercourse and childbirth to be dissociated more or less at will. The age-old pattern of early marriage followed by the speedy birth of a plurality of children swiftly disappeared. Consequently the rural reservoir of surplus children soon ceased to exist, and European cities began to attract migrants from across linguistic and cultural borders—often Muslims—to perform the low-paying jobs formerly filled by rural recruits from their immediate hinterlands.

A similar phenomenon exists in the United States, Canada, and other lands of European settlement overseas, even though rural villages scarcely existed in those lands, and by the eighteenth century individual farm families were already closely dependent on urban markets. All the same, in twenty-first-century United States, non-Hispanic whites no longer reproduce themselves at their former rates, even though immigrants bringing rural habits with them



Ferdinand Georg Waldmüller (1793–1865), *Children Making Their Grandmother a Present on Her Name Day*. With life's uncertainties, especially in infancy and old age, a plurality of children ensured sufficient family help.

from Latin America and other lands seem likely to sustain continued population growth for the nation as a whole as far ahead as 2050. The U.S. Census Bureau projects a growth of 50 million between 2000 and 2050, when the total will be 429 million (Demeny and McNichol 2006, 282).

Whether the world as a whole will eventually exhibit the pattern of demographic decay that prevails among Europeans today remains uncertain. But there are strong reasons to suppose that the recent worldwide reduction in birth rates will continue and perhaps gain velocity in the near future.

Falling Birthrates Worldwide

What explains falling birthrates worldwide is the fact that soon after the year 2000, for the first time in history, a majority of humankind ceased to live on the land and began to depend on food someone else had raised. Money incomes and a worldwide market in

foodstuffs made this possible, together with modes of transport and storage operating on a scale unimaginable before railroads and steamships began to use fossil fuels to carry all sorts of goods longer distances and far more cheaply than before.

Medical and sanitary advances after 1850 improved urban health markedly, and after 1950 it even looked as though urban “die-off” might be effectually counteracted by sanitary engineering and antibiotics. But cities, reshaped by wholesale application of modern forms of mechanical energy, were simultaneously becoming far more inimical to child rearing than before.

Changing—and Disappearing—Role Models

Before water power, steam power, and electrical power transformed what we still call manufacturing (Latin for “making by hand”), most urban artisans lived and worked at home, where many of the characteristics of village forms of nurture prevailed. That is to say children and adults intermingled closely on a daily basis, so children could watch their parents at work from infancy and learn most of the relevant skills simply by imitating their elders. In medieval cities guilds of artisans commonly lived close together so neighbors reinforced traditional patterns of nurture, just as happened in villages. Continuities were further confirmed by formal apprenticeship, whereby an established craftsman took young boys into his household for a period of years and taught them what they needed to know to become master craftsmen themselves.

But shopkeepers, transport workers, and a great variety of other more marginal occupations provided far less adequate nurture for the young. Even when manufacturing was still done by hand, therefore, cities were socially unstable by comparison with villages. In particular, poor and unmarried marginal drifters, often fresh from the countryside, constituted a significant proportion of urban populations, though they seldom show up in surviving records.

In the Islamic lands, similar forms of nurture existed among urban artisans. Urban China too was

The first half of our lives is ruined by our parents, and the second half by our children. • **Clarence Darrow** (1857–1938)

similarly structured. But sub-Saharan Africa and pre-Columbian American societies may have been different. Reliable statistics, even for Europe, are scant to non-existent.

All such long-standing urban patterns of nurture started to change whenever work moved from homes to factories and offices where children were not permitted to accompany their parents. To be sure, some early factories employed children, especially young girls, to tend spinning and weaving machines. But infants and toddlers were never welcome. Commonly mothers stayed home, keeping house and carrying almost the whole burden of nurturing small children.

As new kinds of factory machinery took over manufacturing, it took a good deal longer for urban children to start contributing to family income than before. Formal schooling became necessary to qualify for more and more jobs. So during the nineteenth century most European countries inaugurated compulsory public schooling. Insofar as such laws were enforced, more and more children went to school for an ever lengthening number of years. School teachers began to rival and sometimes conflicted with what parents had to teach the young. Formal schooling therefore both increased the cost of child-rearing and decreased parental influence.

But radical disruption of urban patterns of nurture waited until the twentieth century. Several factors came into play. After about 1920, new household conveniences—washing machines, vacuum cleaners, and innumerable others—made housekeeping a part-time occupation. Electric refrigerators, frozen and packaged food, and all the wonders of contemporary supermarkets magnified the effect after 1950. Women responded by taking paid jobs to increase family income, and when necessary, hired others to look after their children. Parental nurturing diminished, and distinctive forms of youth culture, often rejecting both school and parental norms, became far more powerful than before.

Rebellious Youth

New forms of communication propagated these rebellious forms of youth culture far and wide. Radio

and gramophone in the 1920s, TV and portable recordings in the 1950s, and computers and the Internet in the 1980s brought the American version of youth culture to world attention. Young persons everywhere—or almost everywhere—could sample and yearn for instant gratification, often entangled with drug-induced exaltation as exhibited by star performers of almost their own age.

These were teachers of a different stripe from those in school and at home. Beginning in the 1960s many young people embraced them as well as a variety of contradictory forms of rebellion—hippies seeking to live close to nature, religious fundamentalists aspiring to stricter sexual morals, and environmentalists foretelling imminent disaster if we do not change our ways at once. What all these movements had in common was rejection of older ways of life. But parental rules were what youths in practice were able to repudiate.

This was not difficult to bring about. Effective birth control pills became widely accessible during the 1960s. Simultaneously, in all the richer countries, governmental social security payments became available to old folk, and, as schooling became more prolonged, raising children cost more than ever. Not surprisingly, then, many young parents reconsidered giving birth to as many children as their predecessors had done. In response, urban birth rates plummeted in Europe and North America. Rural and urban birth rates fell drastically in Japan and China as well, though in China state policy seeking to enforce the limit of one child per couple played a far more intrusive role than elsewhere.

Accurate statistics for what is happening in cities of India, Southeast Asia, Africa, Latin America, and the Muslim lands are unavailable. Probably, long-standing religious and family customs prevail for the most part, and village life still embraces most of the population. These are the regions where population growth continues so vigorously, despite millions of emigrants departing for Europe and America. Yet falling birthrates everywhere—even in Africa—suggest that old patterns of family and community life are already weakening.

If these lands replicate the disruption of nurture that took place in Europe and North America in the

past fifty years, the world as a whole may well begin to see declining populations after 2050. Other factors are sure to come into play. Energy and other ecological shortages, epidemic disease, warfare, or the breakdown of long-distance economic exchanges may provoke sudden depopulation. On the other hand, new inventions—technological, social, and political—may make raising children easier and more rewarding.

But until a viable urban substitute for traditional village communities can be found, the biological and cultural continuity of humankind will remain at risk. Without more effective forms of nurture than prevail among us today, especially in cities but also increasingly in villages, our species is unlikely to survive very long into the future.

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See also Childhood; Population Growth; Villages

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Childhood

Historians struggle to define the roles children have played in history, mostly because the documentation that exists focuses on Western offspring of elites and is seen through an adult perspective. Although childhood is shaped largely by local influence, some modern global forces put new pressures on children; a fundamental redefinition of childhood has been under way since the late nineteenth century, affecting how children can define their roles and how adults perceive them.

All societies focus heavily on children and childhood. Considering childhood on a global scale and in a global history context offers opportunities to distinguish between inherent, or natural, features of childhood and those imposed by particular economic, political, and cultural structures. It also challenges historians to think about the relationship between global forces and the phase of life in which individual personhood is determined.

At the same time, however, there are important limitations. The history of childhood is difficult to study because of the nature of sources. Adults speak about children far more than children speak for themselves, which distorts our view of childhood in the past. It is far easier, furthermore, to deal with childhood for elites than for ordinary people historically, for relevant sources are far more abundant. Nevertheless, some important ventures have already been made into the history of childhood, and there is growing interest in the topic among current historical researchers.

More is available, however, on childhood in Western history than on childhood in most other societies,

which at least for the moment affects opportunities for study, including comparative opportunities. Childhood is also closely shaped by local and regional factors—particular religions, laws, and so on. It has not been easy to see more global forces shaping childhood, at least before the nineteenth and twentieth centuries. There are few comments on the history of childhood in the pages of world history texts, a situation that may well change as further research occurs, opening new possibilities for a world history perspective on a vital topic. Happily, however, work on childhood in several other societies, such as China, is advancing rapidly.

Recognizing Childhood

Within Western history, fierce debates have raged over how much conceptions of childhood have changed over time, particularly in terms of children's position within the family. The classic work by Philippe Ariès, *Centuries of Childhood*, which really launched the study of the history of childhood, argued that premodern Western society had relatively little concept of childhood, viewing children as small adults and, as a result, often treating them harshly. Lloyd de Mause, a psychohistorian, picked up this claim when he argued that only in the twentieth century did children begin to be treated properly (a sweeping condemnation of the past that few would now defend). Other historians have claimed to find relatively little grief evinced when children died in the premodern West, partly because high birth rates cushioned any individual loss. From the eighteenth century onward, according to this classical school, childhood began to



Charles Dickens's *Oliver Twist* called attention to the plight of poor children in industrialized Europe. In this drawing, young Oliver pleads for mercy before a magistrate.

be more sharply differentiated as a separate stage of life, and bathed in greater sentimentality.

In contrast to this approach, a revisionist group, comprising mainly medievalists and early modernists, points to a clear recognition of childhood in earlier centuries, including distinct categories of legal treatment, along with high emotional investment by parents in individual children. It is clear, for example, that most families did grieve when children died, often viewing these events as decisive in family history—though this does not mean that the grieving process was the same as the modern emotional reaction. Debate continues, with some middle ground between the position that there has been no essential change in the conception of childhood and the position that there are massive modern/premodern contrasts; the more moderate position is probably the most accurate. Similar debates may apply to differences among societies, to the question of how many aspects of childhood are natural, and so uniform across the major societies in world history, and

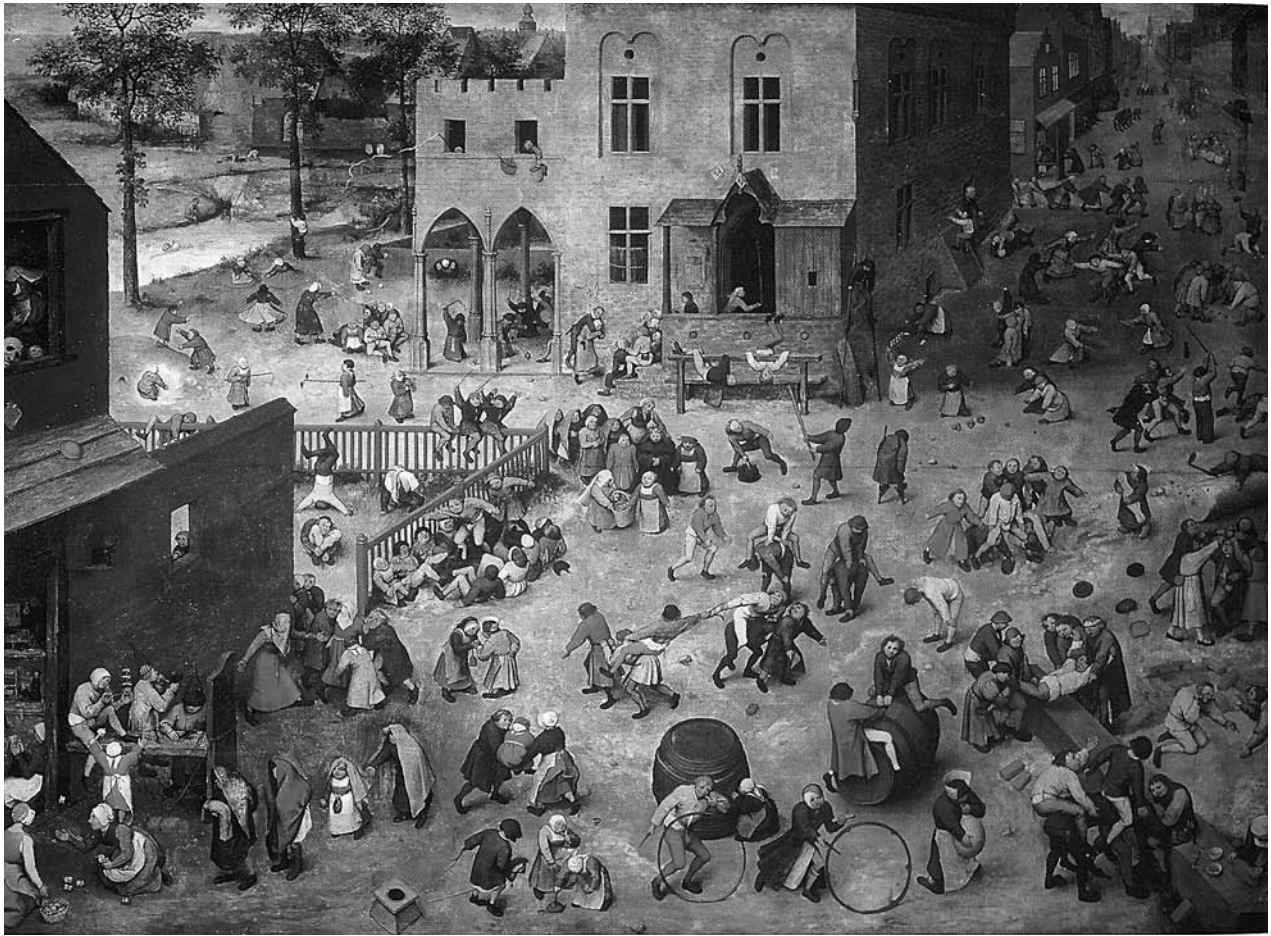
how many significant variations must be identified and explained.

Children in Agricultural Societies

Much of world history is taken up with the development of agricultural societies and civilizations. We know several things about children in agricultural societies, and about comparative issues, even when further specific analyses remain desirable. First, most children in agricultural societies were put to work at a young age, and indeed the economic utility of children was vital to family calculations in any agricultural society. This remains true in agricultural societies today. One of the reasons birthrates rose when agriculture replaced hunting and gathering was because of a need for labor. This does not mean that children were worked excessively hard, but that they were expected to help, and job training constituted a major part of the socialization of both boys and girls. Only an upper-class segment, as well as a few children identified as particularly talented from the lower orders, might be spared from work in order to spend significant time in school.

Second, because families in agricultural societies were fairly large, with an average birthrate of five to seven children per family, children had considerable interaction with siblings, and older siblings, particularly girls, were expected to help care for their younger brothers and sisters. As death rates between infancy and two years of age ranged from 30 to 50 percent of the total in agricultural societies, children in those societies also had extensive, intimate experiences of death.

There were also, however, a number of differences among various agricultural societies. Schooling is one; differences in schooling depended both on the dominant culture and on available resources. Islam encouraged efforts to provide some religious education, particularly in the cities, especially to boys but sometimes to girls. Hinduism, by contrast, fiercely limited access—at least to religious literacy—to the top three castes. Chinese Confucianism encouraged



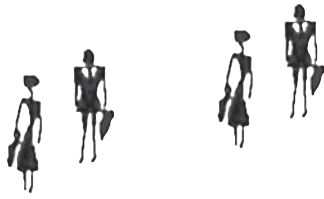
Pieter Bruegel the Elder, *Children's Games* (1560). Oil on canvas. This painting documents adult/child interaction in popular games played by the Dutch peasantry during the sixteenth century.

lots of education for a minority, but showed little concern for a broader base. But Confucianism as adopted in Japan under the Tokugawa shogunate (1600/1603–1868) produced widespread schooling, reaching up to 25 to 30 percent of all boys. Within Christianity, Protestantism encouraged efforts to promote literacy, whereas Catholicism, more reliant on the intermediary of priests, was traditionally less active.

Approaches to discipline also varied. American Indians were appalled at the amount of physical punishment dished out by Protestant immigrants. Denominations of Christianity that emphasized original sin, which no child could escape, tended to be strict. Hinduism, by contrast, encouraged a greater delight in children and their promise. Family structures also varied in ways that could affect childhood. The European-style family, introduced from the later Middle Ages (fourteenth–fifteenth century),

emphasized relatively late marriage and nuclear, rather than extended, families; children had a closer, possibly tenser relationship with individual parents than was true in the extended families that were characteristic of eastern Europe and most of Asia. Because there were few adults around, Europeans often hung young infants on hooks in the house, so that they would not get into trouble while their mothers worked. In contrast Chinese and African mothers typically took their children with them to work in the fields, wrapping them on their backs and maintaining close physical contact. Emphasis on work in subordinate positions helps explain the common emphasis on obedience for children in agricultural societies, even in school settings.

In between commonalities and contrasts, agricultural societies varied (though more modestly) when it came to issues of gender in childhood. All the societies were patriarchal, emphasizing boys, particularly



older boys, over girls. But some societies stressed the importance of boys more than others, to the point that in some female infanticide was used to get rid of unwanted girls and limit the total burden of children on individual families. This was true for long periods of Chinese history and also in classical Greece. Islam, however, worked hard against the older Arab practice of female infanticide, on grounds that both boys and girls had souls. Chinese Confucianism stressed more systematic inculcation of girls' inferiority than did Indian culture; one manual (written by a woman) urged that girl babies be placed at the feet of beds, to emphasize their lower position, while boys be allowed to sleep at the side of parents. There was also some variation in arrangements for marriage of older children. All agricultural societies stressed the importance of property transmission and adult supervision in marriage. In India, China, and some parts of Africa, marriages were arranged while girls were very young, whereas in regions where Christianity and Islam dominated, mate selection for children usually took place at a somewhat later age.

Childhood in Industrializing Societies

The world history of childhood shifts gears considerably as agricultural civilizations begin to be challenged by a more commercial world economy. Comparison remains important, but some wider generalizations are also possible. Western Europe and the new United States pioneered some of the crucial departures from the norms of premodern childhood, and while other parts of the world did not follow slavishly, there were some general patterns emerging by the later nineteenth century.

A gradual redefinition of the purposes of childhood, away from work and toward schooling, was a key change. The greater emphasis on education emerged in Europe and the United States as a result of Enlightenment beliefs in the educability and progressive possibilities of children. This view dovetailed with the long-term results of industrialization

which, after producing some initial factory exploitation of children, reduced the number of jobs children could do while increasing the need for literacy and numeracy in the labor force. From the 1830s onward, labor laws explicitly limited children's work. Other societies jumped on the educational bandwagon with varying degrees of speed. Japan, where schooling was already well developed, pushed for universal education from 1872 onward. Eastern Europe moved in the same direction, and in the post-World War II years under Communism, which disputed other aspects of the Western model, mass education became a major goal. Everywhere the numbers of children in school and the length of time devoted to education increased. Intriguingly, while girls lagged behind boys in educational access in some places, most mass education movements included girls, if only because of the need to improve the education of mothers as part of the wider association of childhood and schooling.

In the West, this fundamental redefinition of childhood was accompanied by heightened attention, at least in principle, to the innocence of children and to their lovable qualities. Birth rates began to drop, which expanded the emotional as well as financial investment in individual children. With the decline of infant mortality, particularly dramatic between 1880 and 1920, there were growing efforts to shield children from death and new movements for the legal protection of children. The concept of adolescence expanded the reach of childhood and resulted in the minimum legal age for marriage going up, as well as in growing attempts to regulate adolescent sexuality. By no means did all of this export to other parts of the world, but in most cases industrialization resulted in lower birth rates, which had a similar impact in increasing the attention lavished on individual children; this was true in Japan, for example, and, by the later twentieth century, in China as well.

By the twentieth century, and particularly after World War II, several global currents added to these patterns of change, though great diversity remained. Children's work received international attention. From the 1920s onward international organizations, such as the International Labor Office, formulated



The world history of childhood shifted gears considerably as agricultural societies were challenged by the world economy. Commercially sponsored beauty pageants for young girls are common in twenty-first-century Chinese malls.

standards that would limit the burden of work, particularly on young children. But the pressures of the global economy, which led manufacturers to seek ever cheaper labor, actually expanded the incentive for the use of child workers in some regions. By the later twentieth century half of all child laborers were employed in South and Southeast Asia. Economic pressures also accounted for a growing sexual exploitation of older children with parents sometimes selling daughters to aid the family economy in societies such as Thailand or parts of Eastern Europe, where the sex trade has grown; some global tourism focused explicitly on sexual activities, and girls, rather than adult women, were sought because it was believed that they would be less likely to be infected with HIV. Some desperately poor families also exploited children for exportable body organs, while in Africa the growing phenomenon of child soldiers pointed to another disruptive pattern.

Against these trends, a global human rights movement with a focus on children gained increasing momentum. The Save the Children organization, which emerged in 1919 after World War I and the Russian Revolution, sought to help displaced children across Europe. Its mission evolved after World War II to a more general campaign to assist children materially and psychologically affected by war—leading, for example, to the 1996 United Nations Study of the Impact of Armed Conflict on Children. More general attempts to define children's rights internationally led to the 1989 United Nations Convention on the Rights of the Child, ratified within a decade by all but two countries, Somalia and the United States. The Convention enunciated rights in law and in educational access. In 1999 the International Labor Organization followed with Convention 182 against the most exploitative child labor, including sexual exploitation. These initiatives sometimes won

superficial commitments that led to little change, but some imaginative implementations have also ensued, such as a 1996 “foul ball” campaign that forced the Federation of International Football Associations to refuse to endorse soccer balls sewn by children, or a 2003 decision to stop the use of child riders in camel races in parts of Arabia.

Another global phenomenon affecting children involves new patterns of migration, emerging from the late nineteenth century onward and involving long-distance movement into societies with radically different cultures—for example, Asian migrations to the West, Caribbean migrations to the United States and Western Europe, or African and Middle Eastern migrations to Western Europe. Generational tensions and identity issues, part of any migration process, have been exacerbated.

Finally, the spread of global consumerism has obvious implications for children and childhood. Children often lead in picking up consumerist cues, welcoming them in part because of their role in reducing parental and other adult authority. Children in many societies have become prime consumers of global goods, whether rock music or fast food. Global symbols like Disney, blue jeans, or Coca-Cola provide some currency for a global youth culture quite different from the more traditional cultures of older generations. Interestingly, even as Western and international agencies express concern about the sexual exploitation of children, consumer cues often emphasize the sexuality of older children—another tension in the modern global mix, and one that inspires resistance from more traditional sectors eager to defend customary modesty.

These changes, accelerating in the first years of the twenty-first century, do add up to a tidy package. Some modern global forces put new pressures on

children, particularly in some of the world’s poorer regions. Despite diversities, something of a fundamental redefinition of childhood has been under way for more than a century, affecting how children can define their roles and how adults perceive them.

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See also Child Nurture

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China

For millennia China has influenced (and been influenced by) the rest of world. Advances in science and technology put China ahead of the West for a few centuries after 1000 CE, but China's dynastic governance (and occasional warlordism) temporarily set the country back. But in the twenty-first century China has undergone a series of remarkable transitions; its government has successfully reasserted unity and expanded its global influence beyond earlier limits.

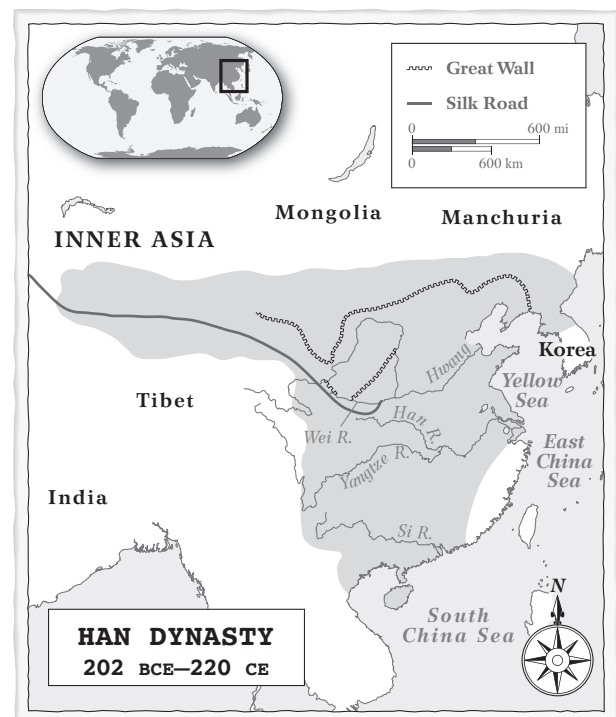
China's prominent role in world history corresponds to its size and its age. In the twenty-first century China is second only to Russia and Canada in territorial extent; some 1.33 billion people living within China's borders make the country by far the most populous land on Earth. *Homo erectus* populations existed in China about 900,000 years ago, and modern *Homo sapiens* arrived about 40,000 years ago. Agriculture dates back more than 10,000 years; state-building and civilization arose, initially in the Huang (Yellow) River valley, beginning about 4,300 years ago, and attained lasting and distinctive forms by the time of the Shang dynasty (1766–1045 BCE).

Chinese civilization first influenced neighboring peoples in eastern Asia—Koreans and Japanese farther east, steppe nomads to the north and west, and tropical gardeners to the south. China has always retained primacy in that part of the world thanks to the skills, the numbers, and the economic and political prowess of its population. As transport and communication improved over time, China's influence reached ever more widely across Asia, and the Chinese continually enriched themselves by importing new skills, new knowledge, and new things from afar. Beginning

about 100 BCE, with the opening of organized caravan trade along the so-called Silk Roads, this process of interaction began to affect western Asia and even distant Europe, creating an Old World web that eventually expanded around the globe after 1500, creating the tumultuous world we know today.

Early China to 221 BCE

Chinese texts preserve a uniquely comprehensive political narrative. It begins with mythical divine rulers and continues with accounts of a merely human dynasty, the Xia (2100?–1766? BCE). Scholars





Wooden irrigation flumes, along with canals and dams, aided rice cultivation.

hotly debate whether archaeological evidence unambiguously proves the existence of the Xia dynasty. But in the 1920s, excavation at Anyang, seat of the last rulers of the Shang dynasty, uncovered thousands of “oracle bones” inscribed in a script close enough to modern Chinese writing to be interpreted by experts. These and other remains show that basic elements of subsequent Chinese civilization had already taken shape by 1300 BCE.

Anyang is situated where the Huang River of northern China traverses a region of soft, windblown loess soils. That was where early farmers had begun to raise millet, later supplemented by wheat and barley, come from Mesopotamia. The Shang armies also used horses, chariots, and compound bows, introduced from the western steppe.

Far-reaching changes came under the Zhou dynasty (1045–256 BCE). First of all, rain-watered agriculture

that had been basic for the Shang was supplemented and soon overshadowed by extending cultivation to the fertile soils of the river flood plain. This required massive building of dikes and canals to control and direct the flow of water. When successful, this water engineering assured ample moisture for the harvest and diminished north China’s dependence on uncertain summer rains. It also vastly expanded the area of cultivation generations of conscripts labored to extend dikes and canals up and down the river valleys and across the coastal plain of north China.

Drainage canals permitted early Chinese cultivators to irrigate their new fields and made it possible for them to raise rice. Rice grew naturally in shallow water along the lakeshores and river banks of southeastern Asia, where local gardeners began to harvest it as early as 8000 BCE. But artificial dikes and canals, like those constructed in the Huang Valley, artificially extended the area of suitably shallow water enormously. Millet and other older crops persisted, but by about 200 BCE rice had become an important staple for China’s rapidly growing population, as it remains to this day.

When river flood plains began to fill up with cultivated fields, the Chinese took on a far more strenuous task of leveling slopes, building dikes around small artificially leveled fields, called paddies, and channeling even very small streams to bring water to them. This allowed hillsides in what eventually became central and southern China to produce rice almost as abundantly as the naturally flat river flood plains did.

As this enormous engineering effort gradually expanded across the landscape—a process that took millennia, and may not have reached its final limits in the Himalayan foothills even today—China’s population began to assume the close-packed density and imposing numbers that still characterize the country. Human muscles, assisted by shovels and wheelbarrows (a Chinese invention), did almost all the work. It remains the most extensive, drastic, and successful remodeling of a natural landscape ever undertaken by humankind.

Impact of Rice Cultivation

Similar rice paddies eventually appeared in Korea, Japan, the Philippines, Java, and Sumatra, in all the great river valleys in Southeast Asia, and as far away as the Ganges in India. Wherever wet rice cultivation spread, dense rural populations arose and supported royal or imperial governments. Something like half of humankind came to depend on this sort of agriculture and still does. But because China's two great rivers, the Yangzi (Chang) and the Huang, drained such extensive watersheds, the country remained by far the largest and most populous among all the rice-growing lands.

Rice, like other grains, must be harvested and stored when ripe to feed everyone throughout the year and provide seed for next year's crop. Governments and a sizable class of landowners arose when it became feasible for them to collect stores of grain from the harvest in payment for taxes and rents; once-independent cultivators were thus turned into rent- and tax-paying peasants. Rice-growing peasants had more to spare than other grain growers since a single rice seed ordinarily produced several stalks carrying more than a hundred seeds in all, compared with a seed-to-harvest ratio of only about 6 to 1 for wheat in medieval Europe. That did not mean that Chinese peasants were rich. Instead, taxes and rents rose high enough to allow the transfer of extra food to city folk—rulers, landlords, artisans, and casual laborers. So from the time rice became basic for China, cities grew to be larger than was possible in rain-watered lands elsewhere.

Despite its unrivalled productivity, irrigated rice cultivation had serious costs. Standing water in paddy fields made malaria and a debilitating parasitic disease called schistosomiasis very common; for a long time the Yangzi Valley—today the most fertile and populous region of China—remained notoriously unhealthy and was less densely populated than the north.

In the north, man-made dikes confined the Huang, and the river's channel clogged with silt picked up as it flowed through soft loess soils. Like the Mississippi today, that silt soon raised the lower course of the

river above the level of the land outside the dikes. Efforts to forestall floods by building higher dikes could stave off disaster for a while, but sooner or later the river broke through and resulting floods became far greater and more damaging than before. The Huang thus earned the nickname "China's sorrow." No other river carries so much silt, and the Huang is correspondingly unstable. In historic times unusually high floods on several occasions have shifted its lower channel by several hundreds of miles.

Increasing Rule of Landowners

Enterprising local landowners initiated (and conscripted field workers to build) the large-scale water-engineering works that reshaped China. As newly irrigated fields came into existence, the income and authority of landowners grew; as local rulers they soon were strong enough to pay little or no attention to the distant emperors. From the start they quarreled among themselves. Centuries of upheaval ensued while agricultural production increased, as did the ills created by intensifying warfare among local rulers.

Confucian and other schools of thought competed in words as vigorously as rival armies did, defining much of what became classical rules of behavior for later generations. But ideas in and of themselves had little to do with the ultimate restoration of public order. Rather, when the Zhou dynasty died out in 256 BCE, the pretense of imperial unity was abandoned, and the contemporaneous Warring States period came to a climax in 221 BCE when a single warlord from the state of Qin on the northwest borderland subdued all rivals. His dynasty did not long survive. Instead, after another bout of warfare, China attained a more lasting imperial and cultural unity under the Han dynasty (202 BCE–221 CE).

Imperial China (202 BCE to 1911/12)

The Han dynasty became a model for other dynasties in later Chinese history. The advantages of imperial government uniting the fertile river valleys

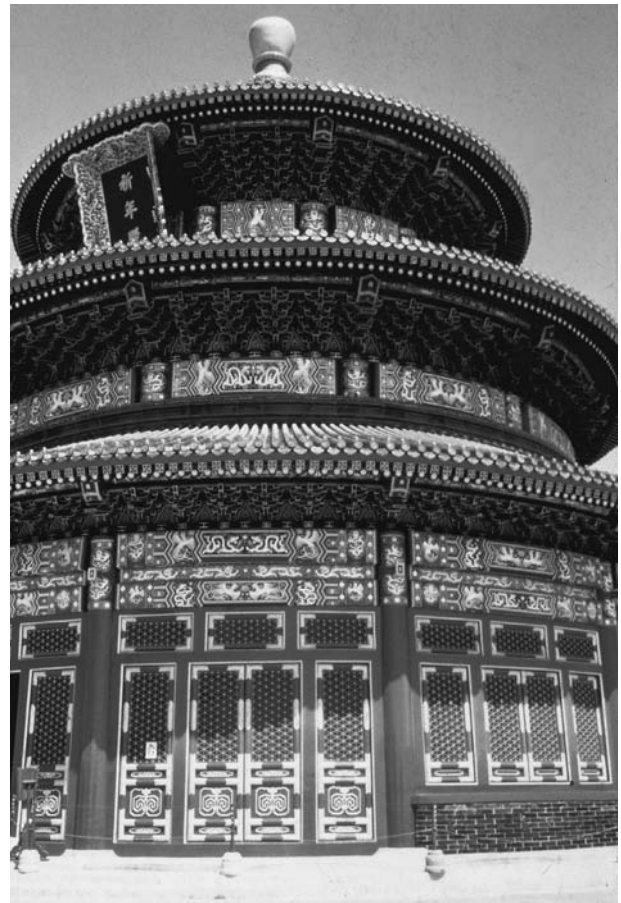


As early as the Han dynasty, China established tribute systems in which the emperor presented gifts to nomad chieftains in exchange for obedience and loyalty.

of north and south China with shifting control over borderlands was so great, that whenever a dynasty collapsed, a new emperor and dynasty soon emerged after relatively brief civil wars. As the central government expanded over the centuries—and China's borders stretched to absorb territory occupied by diverse populations speaking different languages—officials recognized the need to create a system that facilitated communication.

Written symbols, however, can be used to record and communicate languages as different from Chinese as Japanese and Korean, just as the numerals 1, 2, and 3, pronounced differently when spoken in English, French, and German, are mutually understandable as visual representations. Eventually the characters of classical Chinese literature, as edited, elaborated and preserved by Confucian scholars—and then propagated by formal education among

untold millions of Chinese across two thousands years—provided a set of ideas and precepts that both restrained and guided rulers and also taught obedience to the emperor and his officials just as long as divine favor—the Mandate of Heaven—kept him on the throne. The Han dynasty was the first to patronize Confucian scholars, and the emperors spent much time performing ancestral rituals designed to maintain good relations with heaven and lesser spirits, as Confucius (551–479 BCE) had prescribed. Even when Buddhism won a large following at court and in the country at large, subsequent dynasties continued these rituals to be safe from supernatural harm.



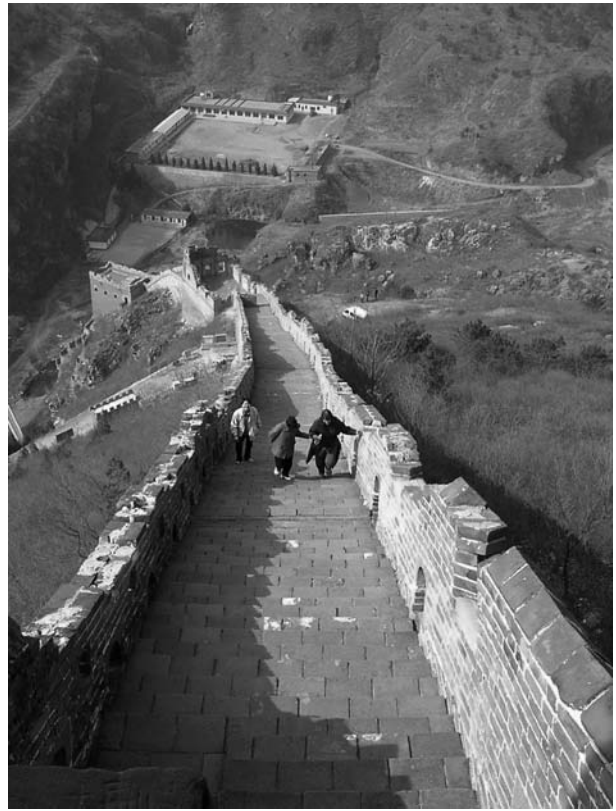
The Temple of Heaven in Beijing, built in the fifteenth century. Emperors were both guided and restrained by the Mandate of Heaven, the divine sanction of just and wise rule. Photo by Joan Lebold Cohen.

The Confucian style of commitment to imperial unity was in turn sustained by the way bulky goods, which were paid as taxes in kind, could arrive at the imperial capital after traveling in barges along canals initially constructed for drainage and irrigation. At first the Yangzi Valley remained isolated from the Huang River network of canals, so resources from the south could not easily reach the imperial court in the north. But in 611 CE the Grand Canal opened, connecting these two principal river systems. Nothing close to such a capacious, cheap, and safe transport system existed elsewhere. The Chinese government and people prospered as a result, spreading rice paddies and building cities throughout the hills and valleys of the Yangzi watershed, more than doubling China's size and resources by the time the lengthy pioneering effort neared completion.

Massive expansion southward in turn allowed the government to cope, not quite so successfully, with the problem of safeguarding itself and its subjects. Enlarged tax income made it easy to elaborate rituals for propitiating heaven and other powerful spirits. Keeping steppe nomads at a distance and preventing their destructive raids was more difficult. Horses thrived on the grassy steppes; and nomad tribesmen spent much of their lives in the saddle, guarding their herds against outsiders and, when opportunity offered, stealing horses from one another, or invading Chinese borderlands to seize grain or anything else they found useful.

The Great Wall and Its Impact

Men mounted on horses moved far faster than infantry could ever hope to do. But horsemen could not easily overcome the obstacle of fortified city walls; thus the famous Great Wall of China was constructed across centuries in the hope of stopping steppe raiders. Infantry equipped with crossbows (a Chinese invention) could indeed repel steppe attacks from on top of the Wall as long as enough bowmen were already in place to meet them. But hundreds of miles of Wall and open country between its gaps needed more men on guard than even the Chinese Empire



The Great Wall, constructed over centuries to prevent raids from steppe nomads, has become an iconic symbol of China. Photo by Tom Christenson.

and its canal transport system could support day after day year round.

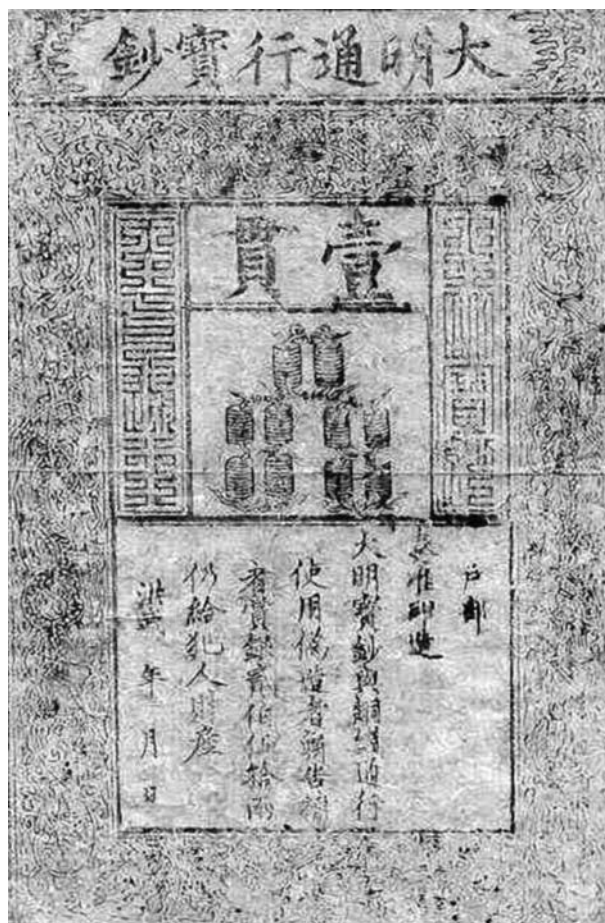
Two alternatives existed: hiring some nomads to stop their fellows from attacking by paying them with what they might otherwise have seized; or training and supplying enough Chinese cavalymen to meet and defeat steppe raiders. Both methods were tried over and over, without solving the problem lastingly. Hired nomads could change sides at any moment; but keeping horses in China was horribly expensive. In the absence of a supply of natural grass, a horse ate many times as much grain as a man needed, so matching steppe horsemen with enough Chinese cavalymen was very costly. More nearly successful was to establish peaceful relations with nomad chieftains, by giving them goods they desired as gifts in return for ritual recognition of obedience to the Chinese emperor. But such treaties, too, often broke down and raids began anew.

Nonetheless, over centuries the effect of raiding and gifting between China and the peoples of the

steppe was to familiarize nomads with more and more aspects of Chinese civilization, eventually spreading key Chinese inventions far and wide throughout Eurasia. Chinese armies and armed expeditions also extended Chinese influence westward from time to time, beginning in 101 BCE, when the Han emperor Wudi sent an expedition to the Ferghana Valley, in modern Uzbekistan, to bring back a breed of “blood-sweating” horses capable of carrying heavily armored men on their backs. For centuries thereafter caravans connected China with western Asia along what Westerners called the Silk Roads. As a result, communication within the Eurasian web attained a new velocity and regularity that increased little by little and reached a climax under Chinggis (Genghis) Khan (1126–1227) and his successors.

To begin with, China had much to learn from Indians and other peoples of western Asia. Buddhist holy men began to filter into China even before the Han dynasty collapsed; and during the years of civil strife and divided sovereignties that ensued, the new religion won many adherents, including Shi Huangdi, the emperor who founded the Sui dynasty and reunited China in 589. Buddhists retained imperial favor until 843 when Confucians succeeded in disbanding their monasteries and prohibiting their religion. But the Confucians had to borrow much from the Buddhists in order to refute them; so restored Confucianism came to resemble the other high religions of Eurasia more closely than before. Buddhist sects continued to exist in secret, especially among the poor and the oppressed, and often sparked rebellions when a dynasty began to weaken.

Buddhist art also affected older Chinese styles profoundly. The landscapes and portraiture of classical Chinese painting owed much to their Buddhist predecessors. More important for Chinese society as a whole was the fact that Buddhist monasteries introduced many Chinese to the advantages of buying and selling goods of daily consumption. In ancient China money played only a limited role for rural populations. Taxes, rents, and services were usually paid in kind, and peasants lived on what goods remained. Buddhist monks however, coming from India along the



Paper money originated in China in the twelfth century, but use in the West was not widespread until a shortage of coinage in the 1600s.

Silk Roads, were accustomed to selling the produce of landed estates pious believers deeded to them and then used the proceeds to buy whatever the monastery needed. Before their dissolution in 843, each monastery in China therefore became the center of a local market; Chinese townsmen and peasants far and wide soon expanded the use of money by buying from and selling to one another as Buddhist monks had done.

Cash and Carry

Use of money eventually became widespread enough that under the Song dynasty (960–1279) the imperial government found it convenient to collect taxes in money rather than in kind. Before a century had passed more than half the government’s income took the form of (first) metal and then paper currency. Consequently, millions of ordinary peasants started to sell part of

their harvest to pay taxes. Some even specialized, for example, by raising silkworms, and started to buy their food just like townspeople. Thereupon, goods of common consumption—rice, salt, iron, silk, and innumerable others—began to circulate along the waterways of China. Even a small difference of price made it worthwhile for merchants to carry goods to distant markets along the rivers and canals; and all the advantages of specialized production, which the eighteenth-century Scottish economist Adam Smith later analyzed so convincingly, came into operation among something like 100 million Chinese. China began to grow in population, wealth, and skill more rapidly than ever before, while the government fanned the whole process by spending its cash income on whatever it needed.

Simultaneously, agriculture intensified when a new species of early-ripening rice reached China from the south after 1000. Wherever water was available all summer long, this meant that Chinese farmers could raise two crops a year, thereby doubling production per acre. Needless to say, the effect was enormous. Work intensified, population increased and became denser than ever, since throughout the well-watered plains families could survive on half as much land as before. The social discipline of unending work to keep fields, dikes, and canals in order made the Chinese work force far more diligent and productive than most others.

This superiority began to show under the Song, when important new industries appeared, not least the manufacture of guns and gunpowder. Newly perfected porcelain began to rival silk among China's exports; and when the discovery of how to make coke out of coal solved a long-standing fuel shortage in northern China, large-scale iron works multiplied. Fragmentary tax records show that iron production almost quadrupled from 32,500 tons a year in 998 to 125,000 tons in 1078, but that pace was not long sustained, and by 1260 production had dropped to a mere 8,000 tons per year.

Guns and Gunpowder

Chinese officials shaped by the Confucian tradition distrusted captains of industry almost as much as

they distrusted soldiers. Officials feared that such persons, left to themselves, might become rich and powerful enough to threaten public authority. So the fact that officials closely supervised weapons manufacture from the start, and then monopolized the sale of iron agricultural implements in 1083, may have changed prices and made iron production unprofitable. What happened is uncertain, but we do know that most imperial tax income went to supporting armies along the steppe frontier, and as their steppe neighbors became more formidable, the Song government began systematically to reward the inventors of new and more efficient weapons. Gunpowder weapons accordingly came quickly to the fore.

The government needed all the help it could get, for in 1127 the Song were driven from northern China by a new tribal steppe confederation. Nonetheless, strenuous investment in naval vessels, defended by new technologies in guns and catapults, as well as by crossbows, allowed the dynasty to survive as the Southern Song (1127–1279), ruling from Hangzhou, a new capital to the south of the Yangzi River. Then another steppe confederacy under Chinggis Khan conquered north China in 1227; his grandson Khubilai (Kublai) Khan commissioned Chinese artisans to build a navy of his own and would later use it to overrun south China, thus founding the Yuan dynasty (1279–1368).

Mongol Empire

The massive commercialization of Song-dynasty China and accompanying improvements in weaponry soon spread far and wide within Eurasia. Steppe peoples were the first to feel the impact, as the rapid development of their military formidability demonstrated. Indeed, the Mongol Empire at its height extended across all of Asia to the shores of the Mediterranean and northward into Russia. No land empire since has equaled its extent. For two or three generations after the 1240s, thousands of soldiers, merchants, captives, and caravan attendants moved continually back and forth across the steppe.

The mingling of peoples provoked by the Mongol conquests was extraordinary. We know that when



a papal emissary, William of Rubruck, reached the Mongol capital at Karakorum in 1253 he met the wife of a goldsmith who had been born in Flanders a few miles from his own birthplace; and the Muslim traveler Ibn Battuta tells how he met a merchant from his native Morocco in south China about a century later. A Venetian gem merchant, Marco Polo (1254–1324), spent seventeen years in China. His memoirs, which were dictated while he was a prisoner of war in Genoa at the end of his life, became a sensation in Europe. Innumerable such encounters spread detailed knowledge far and wide about superior Chinese skills. It is striking to realize that the three inventions the English philosopher Francis Bacon (1561–1626) later declared to have made Europe modern—the compass, gunpowder, and printing (together with its essential partner, paper making)—all reached Europe from China by word of mouth, and without leaving any written record. Motifs of Chinese painting also traveled throughout the Muslim world, eventually so misunderstood that stylized drawings of the massive Yangzi gorges became perches for peacocks.

Borrowing from afar always involves transformation and adjustment to a new environment. That had been true of Chinese borrowing from India and western Asia in earlier times as they developed their own Buddhist sects and forms of mounted warfare. European, Indian, and western Asian responses to gunpowder, printing, and the compass were just as varied, but the new Chinese techniques affected warfare, shipping, and communication everywhere, even though Muslims at first rejected printing.

Han Chinese were never fully reconciled to Mongol rule under the Yuan dynasty, and when the Huang River broke through its dikes and devastated much of northern China before finding a new path to the sea, they knew that the Mandate of Heaven had been withdrawn from their foreign rulers. Plague also ravaged China in the 1330s, and the government mismanaged the paper currency by indulging in reckless inflation. Not surprisingly, public order broke down until, after years of fighting, a new (and non-foreign) dynasty, the Ming (1368–1644), united the country once more. As Mongol power collapsed,

caravan linkages across Asia diminished without breaking off entirely.

The Chinese began to explore alternative sea routes as soon as defenses along the northwest frontier seemed sufficiently secure, allowing the third Ming emperor, Zhu Di (known as the Yongle emperor, reigned 1402–1424), to embark on an ambitious program of overseas exploration and expansion into the Indian Ocean. Altogether, six armadas, dispatched between 1405 and 1433, carried hundreds of ships and thousands of men to the shores of the Indian Ocean, touching on the coast of east Africa and even penetrating the Red Sea. Wherever the ships appeared the Chinese admiral, Zheng He, collected rarities as gifts and demanded that local rulers recognize the sovereignty of the Chinese emperor. The scale of these expeditions dwarfed the four ships with which Vasco da Gama started his voyage to India in 1497, but unlike the Portuguese discovery of the sea route to India, Zheng He's voyages had no enduring effect. Although his naval expeditions won friends for the Ming, they did not bring in enough revenue to cover their costs. Recognizing that the voyages were unsustainable, the Confucian bureaucracy banned all maritime travel. The imperial navy was allowed to rot away, and the Ming focused on defending their land borders.

Overseas Trade Declines

Private overseas trade from Chinese ports dwindled as long as sailing remained illegal, but a Chinese diaspora had already begun to develop throughout Southeast Asia and continued to thrive until very recent times. So the Chinese never withdrew entirely from the seas. What might have been if they had anticipated Europeans by crossing the Earth's oceans and discovered both America and Europe sometime before 1450, as they were certainly capable of doing, beggars the imagination. This is perhaps the most dramatic turning point in world history—an abdication whose long-term consequences still reverberate.

Nevertheless, from their own point of view, China's rulers were wise in concentrating public effort on safeguarding their landward frontier while closely

He who cannot agree with his enemies is controlled by them. • **Chinese Proverb**

regulating trade with European and other foreign merchants who began to visit their ports after 1520, when the first Portuguese ship showed up. For little by little the Chinese began to prevail against the steppe horsemen.

Three circumstances go far to explain this seismic shift in China's relation with the steppe peoples. First, beginning in the time of the Mongol Empire, bubonic plague spread across Eurasia killing up to a third of the population on its initial onslaught. Probably the plague bacillus had emerged from one of its long standing homes in the Himalayan foothills when Mongol horsemen raided northern Burma (now Myanmar) in 1252–1253, and then carried it back to their homeland, where a new array of burrowing rodents—the normal carriers of the infection—offered the bacillus a new set of hosts.

Within a few decades the disease became endemic across the entire Eurasian steppe, infecting burrowing rodents of several different species; and after the initial catastrophic attacks on human populations in China, western Asia, and Europe between the 1330s and 1349, lesser outbreaks of plague recurred from time to time in all the agricultural lands of Eurasia. We have no written record of what happened among steppe dwellers, but it seems certain that their exposure was greater than among farmers since, wherever they pitched their tents, the reservoir of infection among burrowing rodents of the grasslands lay immediately beneath their feet. Nomad populations shrank substantially as a result and nomad strength in war diminished accordingly.

Second, with the development of more-efficient handguns after about 1550, and with better supply systems, Chinese (and Russian) armies further weakened the nomads. The Ming dynasty began to expand its power into the steppe, organizing mobile armies of foot soldiers, equipped more often with crossbows than with handguns, and supplied by wagons trained to form defensive circles in the face of nomad attack. These tactics proved very effective and soon allowed Chinese settlers to begin to move into the grasslands wherever moisture was sufficient to sustain crops.

Nonetheless, between 1644 and 1683 China suffered a second conquest from the steppes when Manchu cavalymen, taking advantage of quarrels among rival Chinese generals, seized Beijing and proclaimed a new dynasty, the Qing (1644–1911/12). The Manchus were already familiar with Chinese ways and were correspondingly more acceptable to their Chinese subjects than the Mongols had been. Their cavalry, supplemented by Chinese infantry, made a formidable force and allowed the Chinese to expand their power westward until they encountered the equally expansive Russian Empire. Thereupon, two treaties—signed in 1689 and in 1727—defined boundaries between them. The last steppe confederacy to resist the Chinese met defeat in 1755; and Tibet was subdued between 1755 and 1779, bringing China's imperial boundaries to limits that still prevail.

East/West Exchange

This expansion westward was also sustained by a massive growth in China's population. Here it was crops introduced from the Americas—potatoes, sweet potatoes, and peanuts—that made the most difference. Sweet potatoes, in particular, tolerated poor soils and could grow on higher slopes and other marginal locations where rice did not thrive. They therefore became very significant in south China, while ordinary potatoes played the same role on a somewhat smaller scale in the north.

Communication with Europe expanded and became far more precise after 1601 when a Jesuit mission was admitted to the Ming court. Surprisingly, the Chinese made the Jesuits responsible for correcting their calendar to fit the seasons properly. The emperor and his ministers believed that rituals assuring the harvest could only work when offered at the right time of year; and nothing mattered more than that. Later they also asked the Jesuits to cast cannon for their armies and to supervise a ground survey and then make a map of the entire empire.

Jesuit missionaries continued active at the Chinese court until 1706, and year after year reported



Chinese soldiers, killed by Anglo-French forces in one of the key battles of the Second Opium War, lie at Fort Taku, Tianjin.

everything they did to Rome. They made only a handful of converts, but nevertheless found much to admire in Chinese society, and European readers of their detailed reports often did so, too. In particular, the long-standing Chinese practice of recruiting government officials by written and oral examinations seemed very rational to learned Europeans, and several German states imitated the Chinese example early in the eighteenth century. A little later, Chinese decorative art, as transmitted by porcelain and embroideries, became suddenly fashionable as well. And radical eighteenth-century French writers, like Voltaire, thought the Chinese example of a country without priests or revealed religion was far superior to European superstition. In short, the two civilizations were exchanging ideas among experts as never before and on a scale that began to affect them both in far-reaching ways.

Overall, therefore, the Chinese government and economy prospered at home and abroad until the closing decades of the eighteenth century, when population pressure on the land began to provoke rebellions, and when frictions over foreign trade intensified. The British were unhappy that China restricted their trade to the port of Guangzhou (Canton) and only allowed them access to selected merchants who demanded silver currency for Chinese

goods like tea, silk, and porcelain. The Chinese rebuffed a British effort to negotiate a trade treaty in 1793 when Lord Macartney, whose primary mission had been to establish European-style diplomatic relations with China, refused to prostrate himself before the emperor as court ritual required. In the early 1820s, despite official efforts to prohibit it, trade in opium imported by the English East India Company created addicts in Guangzhou and adjacent regions. When the East India Company monopoly on English–China trade was abolished in the 1830s, tensions over opium continued to mount, leading to the First Opium War (1839–1842). The war intensified when the British navy showed up on the Chinese coast in 1841–1842, proceeded to bombard coastal ports into submission, and even interrupted traffic on the Grand Canal. A series of “unequal” treaties ending this Opium War (and one that followed in 1856–1860) transferred Hong Kong to British control, opened Chinese ports to European traders, established a uniform 5 percent tariff, and gave Europeans the protection of consular and mixed courts for settling disputes among themselves and with the Chinese.

Such humiliation was impossible for the Chinese people to accept, while European admiration for things Chinese turned into something like disdain



Traditional junks sail amidst modern boats on Shanghai's Huangpu River. Photo by Joan Lebold Cohen.

for their helplessness. At the bottom of Chinese society, desperate but ill-considered efforts to adopt European secrets of power began to spread among angry young men, as the Taiping Rebellion (1850–1864) showed. It was instigated, and for a while led, by a man who, after repeatedly failing the imperial examinations, met an American Baptist missionary from Tennessee and subsequently claimed to be the younger brother of Jesus Christ, sent by God to bring heaven to Earth and rid China of its corrupt Manchu rulers.

For a few years the Taipings met with widespread success, overthrowing the imperial administration in south China and almost capturing Beijing. But Britain and France sent armed forces to safeguard their treaty rights, and after occupying Beijing and sacking the emperor's summer palace in 1860, they joined forces with the local Chinese militias that defeated the Taiping rebels by 1864. By then, between 20 and 30 million Chinese had died, and much of the country had been laid waste. The dynasty barely

survived, harassed by increasing diplomatic and military pressure not just from Britain and France but also from Russia, a newly-united Germany, and most acutely from neighboring Japan. In 1900, the so-called Boxer Rebellion, provoked this time by an underground Buddhist sect, tried to drive the foreigners away, only to meet defeat. Desperate efforts at self-strengthening ensued, but starting to build a European-style army merely created a disloyal officer corps that joined rebellious students to overthrow the dynasty in December 1911; the Qing emperor agreed to abdicate in February 1912.

Post-Imperial China

Three figures dominated the tumultuous political scene in China after the fall of the Qing: Sun Yat-sen (1866–1925); Chiang Kai-shek (1887–1975); and Mao Zedong (1893–1976). Sun Yat-sen was trained abroad as a medical doctor, but turned into a revolutionary conspirator before becoming the first



Children in Communist China respond with emotion to an unseen speaker.

president of the Republic of China (1912–1949). As head of the Chinese Nationalist Party (Guomindang) he aimed to reshape Chinese society, but local warlords operating in many different provinces resisted his leadership; by the end of his life the Guomindang found itself sharing power with a rival Communist party, modeled in part on the Russian example.

Chiang Kai-shek, trained as a soldier in Japan and Russia, became head of a new military academy organized by the Guomindang before succeeding Sun Yat-sen. He quarreled with the Communists in 1927 and compelled them to withdraw from the area around Guangzhou in southeastern China; Mao Zedong had already begun to recruit an army of guerrillas among impoverished peasants in neighboring Jiangxi province. After their fabled retreat from Jiangxi in 1934–1935 (called the Long March), the Communists found refuge in the northwest at Yan'an; with Mao firmly in control, they launched plans for a rural revolution.

Chiang then set out to defeat competing warlords and was able to occupy Beijing before the Japanese army invaded Manchuria in 1931 and China proper in 1937. Chiang's armies eventually had to retreat up the Yangzi all the way to Chongqing, while Japan set

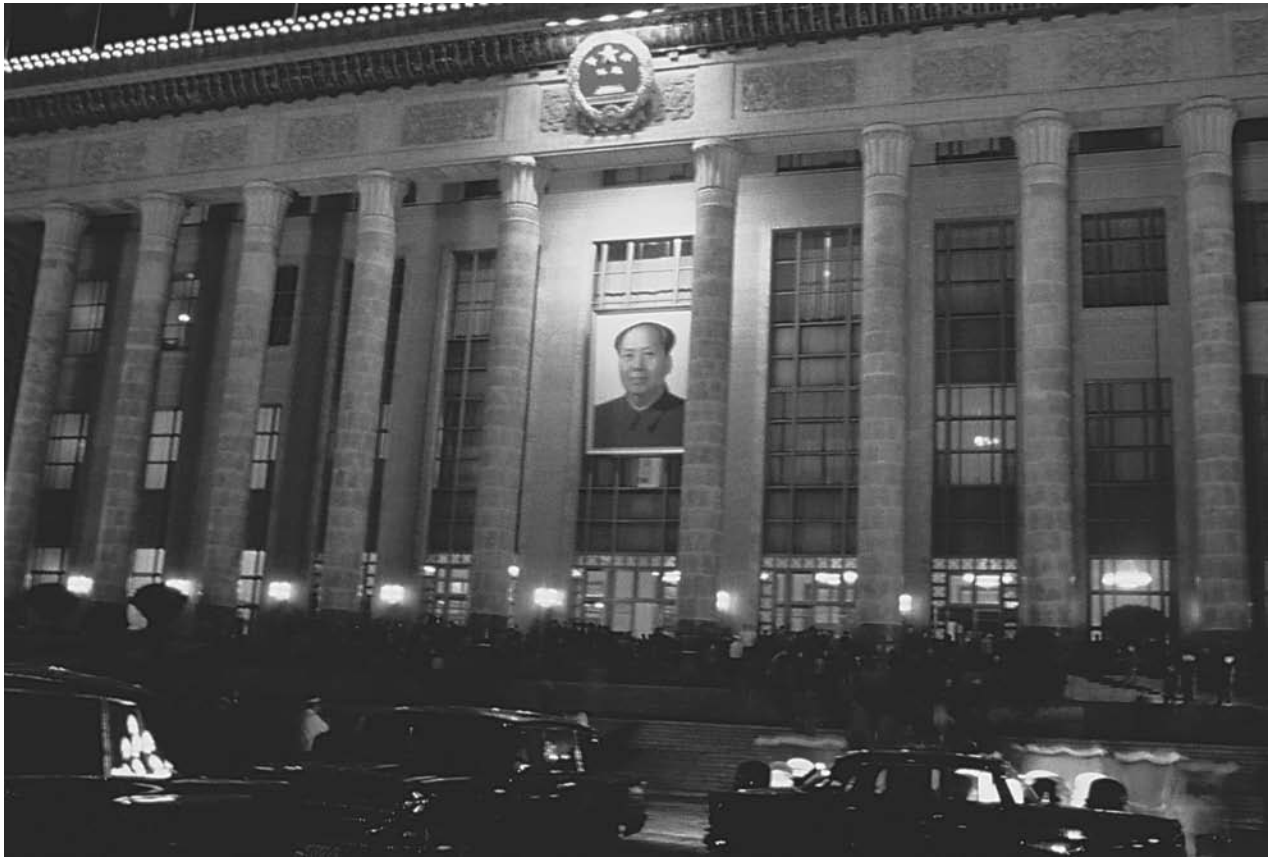
up a puppet Manchu emperor over the rest of China. Nonetheless the United States and Britain recognized Chiang's government throughout World War II and made Chiang's China (Republic of China) a founding member of the United Nations Security Council.

But Japan's defeat in 1945 reopened the struggle between Chinese Communists and the Guomindang. Despite American efforts to support Chiang, Mao's forces prevailed, setting up a new People's Republic of China in October 1949. Chiang and a remnant of his army withdrew to the island of Taiwan where their successors still remain in power.

The rebellions, wars, and general disorder before and after the end of the Qing dynasty closely resembled previous dynastic transitions. Many historians believe Mao's government behaved very like a new dynasty, even though succession depended upon a small circle at the top of the Chinese Communist Party rather than upon a small circle of Confucian officials serving a new emperor.

Internationally, Mao's victory at first seemed to strengthen the Communist cause enormously, and for a while U.S. politicians were much agitated by the "loss of China." Yet in fact Russian and Chinese Communists were rivals as much as allies from the start, and 1968–1969 border disputes even led to brief armed collision between the two governments. President Nixon took advantage of this rift in 1972 to travel to China in the hope of reestablishing diplomatic relations, thus recognizing its growing economic and political power. Liaison offices opened in Beijing and Washington D.C. in 1973, and formal diplomatic relations were inaugurated on 1 January 1979.

Since then China has gone from strength to strength. Mao's successors, notably Deng Xiaoping, relaxed efforts to collectivize China's farmland in 1981, allowing peasants to produce what they chose and to sell their surpluses at will. Parallel private competition with state-run factories soon provoked urban and industrial expansion on a quite extraordinary scale—as much as 12 percent annual growth in gross national product. Chinese-manufactured goods soon became cheaper and often better than



A portrait of Mao Zedong hangs prominently on a government building. More than three decades after his death Mao's image remains an icon of Chinese Communist rule.

anything available elsewhere. Exports swelled accordingly and other countries, with the United States in the lead, went deeply in debt by importing all sorts of consumer goods from China. In 2008 China played host to the Olympic Games, a crowning glory for a government that has never ceased to face foreign criticism for its suppression of human rights in Tibet and elsewhere.

Yet all is not well in the new China. Ecological pollution is widespread and acute. Population presses heavily on resources, and official efforts to diminish the birthrate by prohibiting couples from having more than one child strains traditional family life, despite the relaxation of the one-child policy in 2009. The vast Three Gorges Dam on the Yangzi may disrupt age-old methods of irrigation. Still other disasters may suddenly loom. Political discontent simmers in Tibet and perhaps elsewhere; but so far, at least, the Communist government has been successful in reasserting political unity, increasing wealth for many,

and expanding China's worldwide influence beyond all earlier limits.

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Adapted from "China in World History," by William H. McNeill. In Linsun Cheng et al., *Berkshire Encyclopedia of China* (2009). Great Barrington, MA: Berkshire Publishing Group.

See also Afro-Eurasia; Art—China; Art—East Asian and European Connections; Asian Migrations; Buddhism; Chinese Traditional Religion; Confucianism; Confucius; Daoism; Chinggis Khan; Han Wudi; Hong Merchants; *I Ching (Classic of Changes)*; Islamic World; Laozi; Mao Zedong; Mencius; Mongol Empire; Polo, Marco; Porcelain; Qin Shi Huangdi; Revolution—China; Revolutions, Communist; Ricci, Matteo; Silk Roads; Sima Qian; Sui Wendi; Sui Yangdi; Sun Yat-sen; Taiping Rebellion; Tang Taizong; Trading Patterns, China Seas; Trading Patterns, Indian Ocean; Warfare—China; Warfare—Steppe Nomads; Yongle Emperor; Zheng He; Zhu Yuanzhang

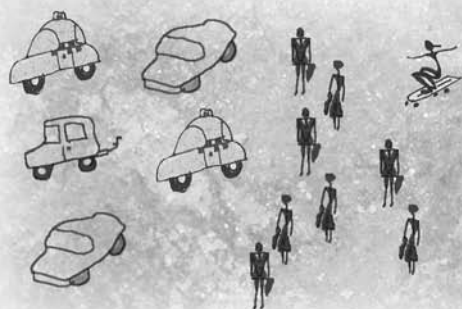
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Chinese Traditional Religion

Chinese traditional religion borrows elements from Daoism, Buddhism, and Confucianism, blending them into a system of beliefs centering upon the gods and spirits who are said to rule the physical world. The pantheon of the popular religion includes the spirits of the deceased and has a hierarchy similar to that of an empire.

The customary beliefs and practices of Chinese popular religion have constituted an integral part of Chinese civilization throughout the course of its five-thousand-year history. Even today, popular religion remains a vital force in many Chinese ethnic communities, thriving particularly in Taiwan, Hong Kong, and Southeast Asia, where it has never been actively suppressed by the political authorities. In general, the ideas and customs associated with this form of religious expression represent a syncretic popularization of the more literary and institutionalized traditions of Confucianism, Daoism, and Buddhism. Existing in relative harmony with these more established systems of belief, popular religion in China has evolved and flourished much more freely than similar folk traditions in the West, where the established religions, such as Christianity and Islam, are exclusivist and have historically suppressed heterodox religious movements.

The belief in the existence of gods and spirits (*shen*) that have power over the affairs of this world constitutes the essential feature of the differing forms of popular religion in China. These spirits are variously conceived of as the deceased members of one's family or community, as deified figures from history or literature, or as the spiritualized embodiments of natural and geographical forces. The most common

form of religious practice involves the maintenance of private shrines and community temples, where the prayers and supplications of the believer are frequently accompanied by ritual offerings of food or the ceremonial burning of incense. Various forms of shamanism and divination are practiced in an effort to attain a more sympathetic union between the human and the divine and thereby discern or influence the course of one's personal or community destiny. In short, the values and aspirations that have sustained popular religion throughout the ages are those related to the survival and preservation of the family and community, along with the desire to maintain the delicate harmony and reciprocity conceived to exist between the human and spiritual realms.

Household Rituals

Ancestor worship is one of the most common rituals associated with Chinese popular religion. Dating back to the ceremonial practices of China's ancient kings, it has evolved to constitute a popular expression of the deeply rooted Confucian ethic of filial piety. Traditional Chinese households maintained a domestic altar where ancestral tablets of stone, wood, or paper were inscribed with the names of the deceased to serve as the focus of offerings made to their spirits. Today, photographs often take the place of the more traditional tablets, but the desire for blessings, along with the family's obligation to ensure its deceased members a comfortable existence in the next world, remain the primary motivation of such practices. Those that died with no descendants to maintain their ancestral rites, or who perished



Traditional Chinese households maintained a domestic altar for making offerings to deceased ancestors.

under particularly violent or evil circumstances, were of great concern to the community in traditional times. These “hungry ghosts,” as they were known in popular legend, could resort to frightening forms of spiritual mischief if they were not properly propitiated. Many communities therefore established shrines specifically devoted to the ritual commemoration of these orphan spirits.

Another common expression of popular religion at the household level was the worship of the stove god (Zao Jun). Also dating back to very ancient times, this practice represents one of the most enduring cults associated with the Chinese folk tradition and shares many similarities to the worship of fire or kitchen gods in other traditional societies. As the benevolent preserver of the family hearth, the stove god was believed to oversee the moral conduct and ritual propriety of the family unit and to issue a yearly report on such matters to Heaven around the time of the traditional lunar new year. In this respect, the stove god was conceived of as a sort of policeman in a hierarchy of divine officials that ruled the spiritual realm just as the earthly authorities governed the affairs of this world. Worship of the stove god thus reflected the pervasive belief in Chinese popular religion that the spiritual world was organized in a bureaucratic fashion that paralleled

the centralized imperial administration of China’s dynastic rulers.

Public Rituals

Many other activities associated with Chinese popular religion served as civic ritual intended to preserve social harmony, reinforce local identity, or ensure the good favor of the gods and spirits in meeting the various challenges of community survival. One particularly prevalent cult associated with this sort of community ritual was the worship of the local earth god (Tudi Gong). A small shrine for this deity was maintained in virtually every neighborhood or rural locality in China, bolstering the sense of regional solidarity so characteristic of traditional society. The earth god was believed to protect the community from the potentially evil influences of wandering ghosts or malevolent spirits (*gui*), along with overseeing and reporting the activities of those inhabiting his precinct to higher deities. Thus, like the stove god, the earth god was seen as another component of the spiritual hierarchy that constituted what one modern scholar has described as the “imperial metaphor” of popular religion.

The city god (Cheng Huang) was next highest in the rank of divine officials accorded the task of supervising the spiritual affairs of the local community. Enshrined in a temple near the center of his jurisdiction, the city god was normally depicted in the traditional robes of a Confucian scholar-official. Indeed, the various city gods were frequently associated with a deceased notable honored in local history for his righteousness and efficacy as an official of the imperial government. The city god was even believed to be in command of soldiers that could be used to enforce his divine edicts and preserve the moral integrity of the community. These soldiers were themselves the recipients of ritual offerings by the local residents, who occasionally placed small portions of simple food on the thresholds of their homes to reward them for their service and to assuage their ferocity. On key holidays or anniversaries, it was customary to physically convey the statue of the

Making sacrifices at ancestral gravesites to honor deceased relatives was a basic part of religious ritual beginning in the Zhou dynasty (1045–256 BCE).



city god on an inspection tour of the region under his command. These ritual processions were often accompanied by great celebration and fanfare as the local residents reconfirmed their sense of community by organizing various festivities.

The Supreme Deity and the Influence of Daoism

The origin and essential nature of the Chinese belief in a supreme deity remains one of the most obscure and debated topics in the study of Chinese philosophy and religion. From the investigation of Shang dynasty (1766–1045 BCE) oracle bone inscriptions dating back to the second millennium BCE, it is clear that the Chinese considered Shangdi (“Ruler on High”) to be the supreme god of the spiritual realm. Because of its awesome and overwhelming powers, this deity could not be supplicated directly, and the divinatory practices of the Shang kings normally consisted of calling upon the spirits of deceased royal ancestors to intercede with Shangdi on their behalf. In the centuries that followed, this supreme deity became increasingly referred to as Tian (“Heaven”) and was regarded somewhat more abstractly, and in a less personified manner, than in earlier times. During the Zhou dynasty (1045–256 BCE), the

Chinese ruler became formally regarded as the Son of Heaven (Tianzi), a development that permanently linked the imperial institution with the chief deity of the spirit world. Thus, throughout most of Chinese history, the ruler was regarded as the primary intermediary between Heaven and Earth, and only he was permitted to worship or implore Heaven directly.

From the time of the Northern Song dynasty (960–1126 CE), the supreme deity of the Chinese has been popularly conceived of as the Jade Emperor (Yu Huang Shangdi), the supreme ruler of the heavens and the underworld and the protector of mankind. According to Daoist legend, the Song emperor Zhen Zong (968–1022; reigned 997–1022) experienced a visitation from the Jade Emperor in a dream, afterwards proclaiming himself the deity’s incarnate descendant. This official acknowledgement of the Jade Emperor placed the god at the pinnacle of the Chinese pantheon and formally sanctioned the popular conception of an elaborate bureaucratic order in the spiritual world that paralleled the imperial institutions of the world below. In Chinese popular religion, the Jade Emperor reigned supreme over all the Daoist, Buddhist, and other popular deities of traditional lore in addition to commanding the various spiritual forces of the natural world. Approached primarily through intermediaries, the



At the New Year, calligraphy hanging on homes in South China honors kitchen gods and other auspicious guardians who will keep the evil spirits away from the door. Photo by Joan Lebold Cohen.

Jade Emperor was often implored by the common people for good harvests and protection against natural calamities. He was also turned to for the remission of sins, in the hope that his pardon, as the ruler of the underworld, would secure a more favorable afterlife. This popularized conception of the supreme deity was, therefore, less abstract and more accessible to the masses than the Tian associated with classical Confucianism.

Many of the deities associated with Chinese popular religion, including the Jade Emperor, are derived from the various sects of folk (or religious) Daoism that emerged during and following the Han dynasty (206 BCE–220 CE). Differing significantly from the philosophical Daoism of the earlier classical tradition, folk Daoism placed great emphasis upon mastering the sublime forces of the natural and spiritual worlds with the ultimate goal of attaining everlasting felicity and physical immortality. Daoist immortals (*xian*) therefore became the primary subjects of religious

reverence, and their individual stories provided the legendary basis for an elaborate pantheon of divine beings. These Daoist “saints,” who collectively symbolized happiness and prosperity, included allegedly historical figures from a variety of social and occupational backgrounds, both male and female. The members of an especially noteworthy group, the Eight Immortals, were often venerated as the patron deities of various professions in a fashion quite similar to the veneration of patron saints in Western Catholicism. Daoist deities also included spiritual beings associated with the forces of nature or the agricultural cycle, such as the Lei Gong (the god of thunder), Yu Shen (the god of rain), and Feng Shen (the wind god). Daoist priests trained in the esoteric traditions of their sect were often called upon in times of drought or other natural calamities to perform rituals of exorcism to rid a region of malevolent spirits or to conduct magical ceremonies to restore harmony to the natural forces.



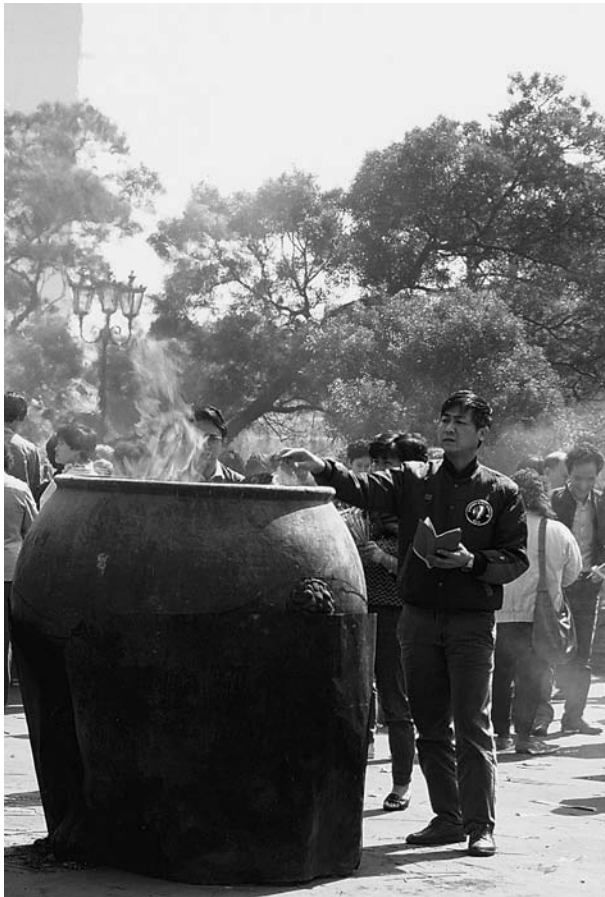
When joss sticks (incense) are burned as offerings, the aroma reaches gods and ancestors for their pleasure in the afterlife. Photo by Joan Lebold Cohen.

Buddhist Influences

Folk Buddhism was another source of many of the deities and ideas incorporated into Chinese popular religion. The most popular among these are drawn from the Mahayana Buddhist belief in bodhisattvas, supremely compassionate beings that have postponed their attainment of nirvana for the sake of assisting all others in the quest for spiritual salvation. The female bodhisattva Guanyin (called the goddess of mercy) was by far the most widely worshipped of these spiritual beings. Often supplicated in times of personal loss or tragedy, Guanyin was regarded as a benevolent savior for the masses, who in her infinite compassion would never fail to rescue or console her sincere devotees. Statues of Guanyin could be found in many Buddhist shrines and

temples throughout China, and households frequently maintained her image on their domestic altar. The spiritual comfort of turning toward the loving goddess Guanyin has many parallels to the deep devotion directed toward the Virgin Mary in Western Catholicism.

Folk Buddhism also influenced popular beliefs pertaining to life after death. One of the most essential features of popular religion in China is belief in a divine system of rewards and punishments, in which departed individuals are judged according to their merits in this life and sent either to a blissful abode in heaven or a tormenting corner in hell. These visions of heaven and hell, along with other notions regarding ghosts and the afterlife, have served for centuries as one of the most creative subjects in Chinese art and storytelling. In short, popular religion in China has



A supplicant puts fake paper money into a burning vat, believing that the “cash” will be delivered to ancestors who will have use for it in the afterlife.
Photo by Joan Lebold Cohen.

assimilated many of the concepts and deities central to both the Buddhist and Daoist traditions, informally combining and transforming them in a manner that has stimulated and inspired the popular imagination throughout Chinese history.

Tradition of Syncretism

The enduring appeal of popular religion among many ethnic Chinese communities around the world testifies to its lasting importance as a conveyor of China's accumulated cultural traditions. By incorporating, in syncretic fashion, key elements

of the country's diverse religious and philosophical traditions, it has consistently served to bring a measure of cultural harmony to potentially conflicting systems of belief. Popular religion in China thus illustrates the inherent tolerance and flexibility of Chinese civilization at the level of folk culture. Thus, while sharing some notable similarities with the veneration of saints and other aspects of popular religion in the West, Chinese popular religion has enjoyed a freer course of evolutionary development and has, therefore, more readily assimilated and preserved the diverse influences that have contributed to Chinese civilization throughout its long history.

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See also Buddhism; Confucianism; Daoism

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Chinggis Khan

(c. 1162–1227)

MONGOL CONQUEROR

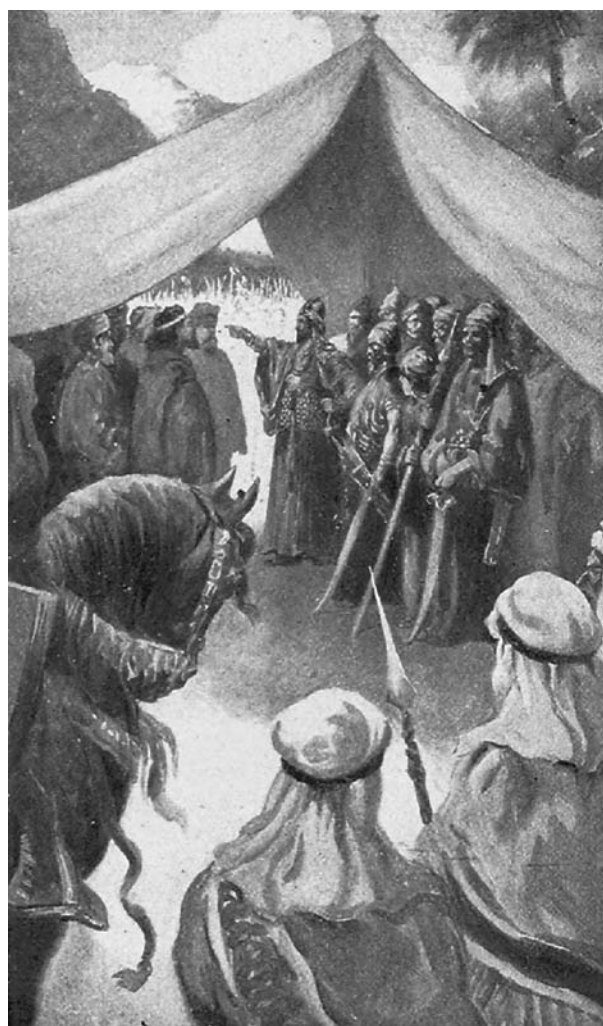
Chinggis Khan (popularly known in the West as Genghis Khan) was a tribal leader in the late twelfth and early thirteenth centuries. He first united Mongolia, then conquered northern China and much of Central Asia. The Mongol Empire eventually stretched from the Pacific Ocean to the Adriatic Sea.

Chinggis (Genghis) Khan was born with the name of Temujin. Although Chinggis Khan has a negative image in the West, he is one of history's most charismatic and dynamic leaders. After surviving tribal wars in Mongolia, Temujin built a tribal confederation that restructured Mongolia and established an empire that encompassed more territory than that of any other conqueror. His successors continued to expand it, making it the largest contiguous empire in history.

Born to the noble family of Yesugei and Ho'elun of the Borjigin Mongols, Chinggis Khan was betrothed as a child to Borte of the Onggirat, another Mongol tribe. Yesugei was assassinated on his way home from leaving Temujin with Borte's family, after which Temujin returned to his own family. Temujin endured many additional hardships in his youth, including tribal warfare and the kidnapping of his wife Borte, but slowly he recruited supporters and assumed a mantle of leadership among the Mongols.

After rising to power in 1185, Temujin experienced several setbacks, but eventually he emerged victorious. A key to his success was an alliance with Toghril Ong-Khan, ruler of the Keraites, a powerful tribal confederation. With Toghril's support, Temujin regained Borte and became a major power in Mongolia. Eventually, relations between Temujin and Toghril soured, but

Temujin was victorious in the ensuing war between them. By 1206 Temujin was the paramount power in



"The Inauguration of Chinggis Khan." This and the other historical illustrations in this article come from *Ghengis Khan*, by Jacob Abbott. New York: Harper & Brothers Publishers (1902).

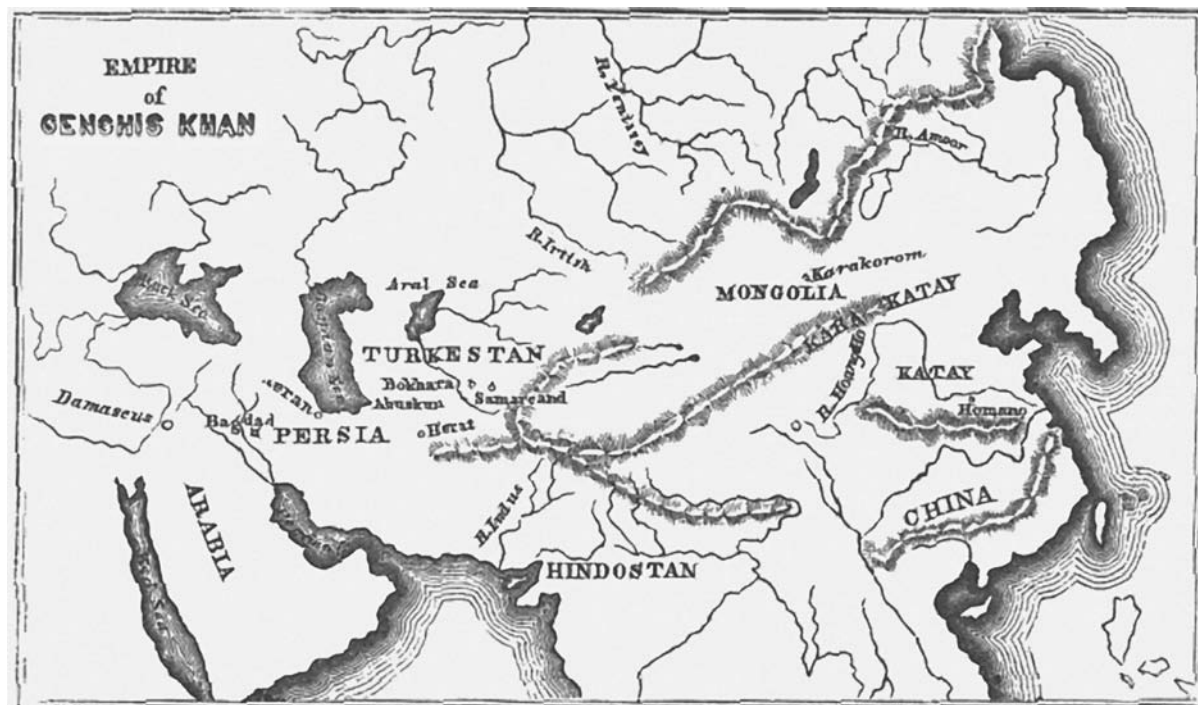
Mongolia and received the title Chinggis (or, traditionally in English, Genghis) Khan (thought to mean Oceanic, or Firm, Resolute Ruler).

After uniting the various tribes of Mongolia into a single nation, Chinggis Khan went on to conquer much of northern China and Central Asia. His wars were as often occasioned by his desire for retaliation for perceived wrongs as for territory or riches. In 1207 the Mongols began operations against the kingdom of Xi Xia, which comprised much of northwestern China and parts of Tibet. This campaign lasted until 1210, when the Xi Xia ruler submitted to Chinggis Khan.

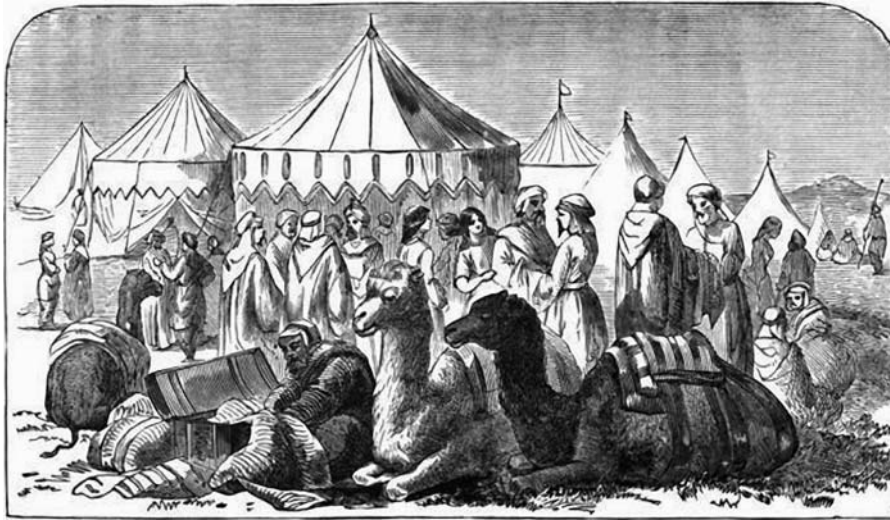
Chinggis Khan did not rest long. In 1211 he led his armies against the Jin dynasty, which ruled northern China. War continued against the Jin until 1234, well after Chinggis Khan's death. Meanwhile, in 1219, during the war in China, a caravan under the protection of Chinggis Khan was massacred in Otrar, a city of the empire of Khwarizm, which consisted of much of modern Uzbekistan, Turkmenistan, Iran, Afghanistan, and Tajikistan.

With his armies engaged in China, Chinggis Khan attempted to find a peaceful solution, but the ruler of Khwarizm forced the issue by refusing to turn over the governor of Otrar. Chinggis Khan left a trusted general, Muqali, to battle the Jin and led an army into Central Asia. The war lasted from 1219 to 1222, and the Mongols destroyed Khwarizm. Striking from several directions, Chinggis Khan's armies carried out a campaign that is still considered strategically remarkable even today. Yet despite having conquered Khwarizm, Chinggis Khan kept only the territories north of the Amu Dar'ya River so as not to overextend his armies.

In 1226 his armies invaded Xi Xia once again to quell an uprising there. During the campaign, Chinggis Khan fell from his horse and later died from internal injuries suffered in the fall. His followers completed the reconquest of Xi Xia and then buried Chinggis Khan in a secret location that remains a mystery, although several modern expeditions have attempted to find it.



Map showing the kingdom of Chinggis Khan. His strategic and organizational genius created one of the most highly disciplined and effective armies in history.



“Merchants Offering their Goods.” The Mongol Empire secured trade routes and encouraged merchants from all regions to travel and do business within the empire.

In the scope of world history, Chinggis Khan's achievements are many. An organizational and strategic genius, he not only created one of the most highly disciplined and effective armies in history, he also gave birth to the core administration that ruled his empire. His nonmilitary achievements included the introduction of a writing system to the Mongols, the promotion of religious tolerance throughout the empire, and unity among the Mongols. Furthermore, Chinggis Khan fostered transcontinental trade. The empire secured trade routes and encouraged merchants from all regions to travel and do business within the empire. Because of this, new goods, technologies, and ideas spread across Eurasia. But Chinggis Khan's most enduring accomplishment is the presence in the twenty-first century of a Mongol nation and culture. Mongols today still venerate him as the founding father of Mongolia.

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See also Mongol Empire; Warfare—Steppe Confederations

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Christian Orthodoxy

Although it has no central authority, the doctrine of Orthodox Christianity is based on holy tradition, especially the tradition established by the seven ecumenical councils that were held during the fourth through eighth centuries CE. The Eastern Orthodox Church initiated its separation from the Roman Catholic Church of the West in the ninth century, and its theology differs from that of the Western denominations.

The Orthodox Church is a communion of independent Eastern churches organized geographically, usually by country. Together they constitute the second-largest Christian denomination after the Roman Catholic Church. Orthodoxy sees itself as the one holy, catholic, and apostolic Church founded by Jesus Christ.

Eastern and Oriental Orthodox Churches

Most Orthodox churches belong to the Eastern Orthodox family of churches, with a smaller number belonging to the Oriental Orthodox family. In Eastern Orthodoxy, the churches are classified as either autocephalous (completely self-governing) or autonomous (mostly self-governing, but dependent upon a mother church). First among the autocephalous churches are the four ancient patriarchates that remain Orthodox; they are, in order of seniority, the churches of Constantinople, Alexandria, Antioch, and Jerusalem. These are joined by the eleven autocephalous churches of Russia, Serbia, Romania, Bulgaria, Georgia, Cyprus, Greece, Poland, Albania, the Czech Republic, and Slovakia, and the Orthodox Church in

America. The autonomous churches are those of the Sinai, Finland, Japan, China, and Ukraine.

The Oriental Orthodox churches are those that may be traced to disputes over the Third and Fourth Ecumenical Councils. The Assyrian Church of the East, sometimes erroneously referred to as “Nestorian,” is generally regarded as having not recognized the Third Council. Those churches generally regarded as having rejected the Fourth Council are the Armenian, Coptic (Egyptian), and Ethiopian churches, and the Syrian churches of Antioch and India.

Theological Authority

While Western Christians dispute whether the proper sources of theological authority are the Bible alone or the Bible together with the tradition of the church, Orthodox Christianity understands there to be one source, holy tradition. This tradition is rooted first of all in the Bible, and then in the seven ecumenical councils (including what is commonly called the Nicene-Constantinopolitan Creed, or Symbol of Faith, completed in 381 CE), and in later councils, the writings of the church fathers, the liturgy, the canons of ecumenical and local councils, and the holy icons.

When it comes to the formulation of church dogma, however, the Eastern Orthodox churches accept the validity of the first seven ecumenical councils. These meetings of bishops in the first eight centuries of the church’s history, all convened to settle theological disputes within the Church, are considered the most authoritative expressions of Christian doctrine. The First Council of Nicaea (325 CE) affirmed the humanity and divinity of Christ and composed the first two-



A page from Miroslav's Gospel (c. 1180) an illuminated manuscript resulting from the fusion of Western (Italian) and Eastern (Byzantine) elements. The text is now housed at the National Museum of Serbia in Belgrade.

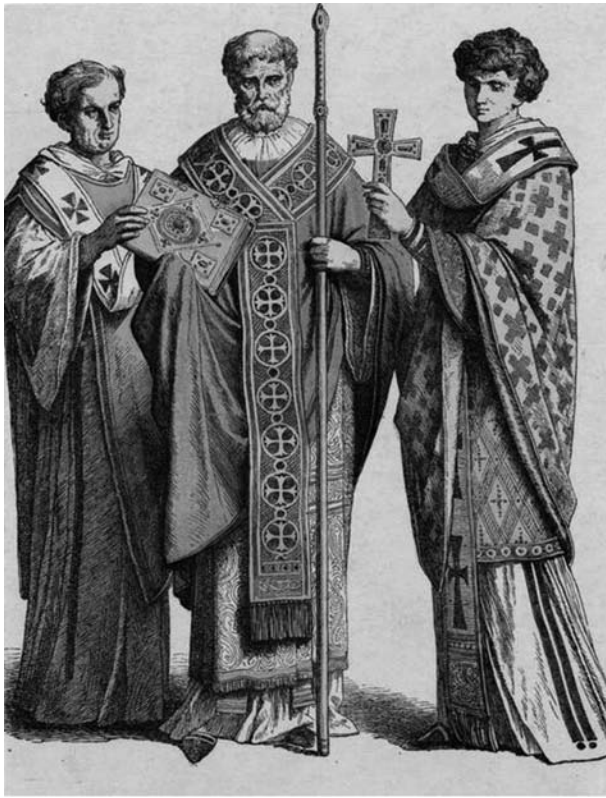
thirds of the Nicene-Constantinopolitan Creed. The First Council of Constantinople (381 CE) affirmed the divinity of the Holy Spirit and added the final third of the Creed. The Council of Ephesus (431 CE) affirmed the unity of Christ and declared his mother, the Virgin Mary, to be Theotokos ("birthgiver of God"). The Council of Chalcedon (451 CE) defined the human and divine natures of Christ, as opposed to the "one nature" doctrine of the Monophysites. The Second Council of Constantinople (553 CE) continued the work of Chalcedon. The Third Council of Constantinople (680–681 CE) condemned the Monothelite ("one-will") heresy, affirming that Christ has two wills (divine and human). The Second Council of Nicaea (787 CE) condemned the iconoclasts ("icon breakers") and upheld the proper veneration of icons.

The Great Schism

The break between East and West, between the Eastern Orthodox Church and the Roman Catholic Church, is often dated to 1054 CE, but the history is more complex. The Great Schism was the result of an estrangement between the East and the West that developed over several centuries due to differences in culture, politics, and language, as well as theology. The chief theological controversies that exacerbated the estrangement and led ultimately to a break in communion had to do with the authority of the Roman pope and a change in the Nicene-Constantinopolitan Creed. Both issues led to the so-called Photian Schism of the ninth century and to the mutual excommunications that occurred in 1054.

The five centers of the church in the first millennium CE, the so-called Pentarchy, were Rome, Constantinople, Alexandria, Antioch, and Jerusalem. Rome, as the first capital of the empire and as the traditional location of the death of two Apostles, Peter and Paul, was honored by being accorded primacy. In the East, the proximity of the patriarchal sees to one another functioned like a system of checks and balances, allowing the East to maintain the polity of autocephalous churches in communion with one another. But Rome was alone in the West, and over time the office of the pope began asserting more and more authority, even to the point of claiming jurisdiction over the Eastern churches. The proclamation of papal infallibility in the nineteenth century added a further obstacle to reunification.

The Nicene-Constantinopolitan Creed declares that the Holy Spirit "proceeds from the Father." Beginning in Spain in the sixth century, however, some Western Christians began adding a word (*Filioque*) to the Latin translation of the Creed that results in the declaration that the Spirit proceeds "from the Father *and the Son*." Despite efforts to add this word to the creed at Rome, it was not officially added to the text until 1054 CE. The *Filioque* issue is really twofold. On the one hand, there is a possible dogmatic dispute. If by *Filioque* the West means that the existence of the Holy Spirit has two sources (the



Clergymen of the Eastern Orthodox Church. From *Costumes of All Nations: 123 Plates, Containing over 1500 Coloured Costume Pictures by the First Munich Artists*. London: Grevel and Co., 1913.

Father and the Son), then the East sees the resulting subordination of the Spirit to the Son as heresy. If the West means something else, however, such as the position of St. Maximos the Confessor (580–662 CE) that the Spirit proceeds from the Father and through (*dia*) the Son, then a resolution of the theological difference is possible. On the other hand, the East clearly believes that no one autocephalous church has the authority to change the Creed, which was the product of two ecumenical councils. So even if there is a dogmatic resolution, the Orthodox position would still require the elimination of *Filioque* from the Creed.

A Liturgical Theology

The etymology of the term *Orthodox* is twofold, having the meaning of either “right belief,” “right glory,” or both. This is suggestive of Orthodoxy’s fundamental assumption that worship is the primary

theological transaction. Thus it is the Church’s worship, especially its eucharistic liturgy, that is the locus of theology, and not the classroom or the library. The theologian is not the academic but the one “who prays truly,” in the words of Evagrius of Pontus (c. 346–399 CE). Orthodox theology is therefore best understood as doxological in character.

The Orthodox Church celebrates at least seven mysteries or sacraments: baptism, chrismation (confirmation), Eucharist, repentance (confession), marriage, anointing of the sick (unction), and ordination. The principal forms for celebrating the Eucharist are the Divine Liturgy of St. John Chrysostom (used most of the year), the Divine Liturgy of St. Basil (used ten times annually), the Liturgy of the Presanctified Gifts (used on weekdays during Lent and the first part of Holy Week), and the Divine Liturgy of St. James (traditionally used on the feast of St. James of Jerusalem, but there is a growing use of this liturgy on other days during the year). While refraining from speculation as to the metaphysics of eucharistic presence, Orthodoxy believes strongly in the real presence of Christ’s body and blood.

The Church year begins 1 September and includes the pre-Nativity fast (Advent); Nativity (Christmas); Theophany (Epiphany); Great Lent; Pascha (Easter); Pentecost; and the additional fasts preceding the feast of the Apostles Peter and Paul (29 June) and the Dormition (Assumption) of the Theotokos (15 August). The Twelve Great Feasts of the Church are the Nativity of the Theotokos (8 September); the Exaltation of the Cross (14 September); the Nativity of Christ (25 December); Theophany (6 January); the Meeting of Our Lord (2 February); the Annunciation (25 March); the Entry of Our Lord into Jerusalem (Palm Sunday); the Ascension; the Day of Pentecost; the Transfiguration (6 August); and the Dormition (Assumption) of the Theotokos (15 August). Most Orthodox churches reckon these dates according to the Julian calendar, although since the beginning of the early twentieth century, a number have adopted the secular Gregorian calendar for fixed dates. The Paschal cycle of movable feasts is still reckoned according to the Julian calendar.



*Vstriecha krestnago khoda
na prazdnik Vsiekh Sviatykh*
(Procession for the Feast of
All Saints) 1945.

In addition to the mysteries, the Church observes the canonical hours of prayer: vespers, compline, the midnight office, matins, the third hour, the sixth hour, and the ninth hour. As in the West, these are rarely celebrated fully outside of monasteries. However, most parishes celebrate Saturday night vespers and/or Sunday morning matins.

Theological Positions

In addition to differences from Western Christianity as to the sources of theological authority, the theology of the Orthodox East is characterized by numerous theological positions, also known as theological distinctives, that greatly affect its understanding of God, humankind, and the economy of salvation. Because Orthodoxy did not undergo Roman Catholic scholasticism or the Protestant Reformation that resulted, the East has avoided many of the theological polarities associated with the internecine struggles of the West.

Mystical Theology

For the Christian East, theology—dogmatic, moral, or otherwise—must be lived. “Mystical theology” is

the term that identifies the inextricable relationship between dogma and life, between the teaching of the Church and one’s personal experience. In the Orthodox view, theology that is not experienced is useless, and mysticism without theology is mere subjectivity. It is noteworthy that the East has given only three of its saints the title of “theologian”—St. John the Evangelist in the first century, St. Gregory of Nazianzus (329–389 CE), and St. Symeon the New Theologian (c. 949–1022 CE).

Apophatic Theology

The Orthodox tradition distinguishes between apophatic (negative) theology, and kataphatic (positive) theology. While each has a role within the Orthodox theological tradition, the apophatic is clearly preeminent. Following the lead of (Pseudo) Denys the Areopagite (fifth or sixth century CE), the East emphasizes the radical inability of human thought and language to describe God and “utterly excludes all abstract and purely intellectual theology which would adapt the mysteries of the wisdom of God to human ways of thought” (Lossky 2002). The theological ascent to God must be apophatic. Kataphatic theology, on the other hand, is a kind



Greek Orthodox churches, like this one in Warsaw in the early twentieth century, share distinctive elements of architecture, especially onion-shaped domes topped by crosses. New York Public Library.

of descent in which God manifests himself within the created order.

The Trinity

At the heart of all Orthodox worship, theology, spirituality, and life is the Holy Trinity—the Father, the Son, and the Holy Spirit. It is commonplace to say that Eastern theology begins with the three Persons and goes on to affirm the one Being, while Western

theology generally begins with the one Being and then proceeds to a consideration of the three Persons. The value of this generalization is limited, but it is accurate to say that the East has emphasized the three Persons of the Trinity more radically than the West. Perhaps the most famous Orthodox icon of all is the Old Testament Trinity painted by the Russian iconographer St. Andrei Rublev, c. 1410. It is a depiction of the three angels who appeared to Abraham in Genesis 18, an appearance understood by the East to be a Theophany (“manifestation”) of the Trinity.

Original Sin

Western Christianity’s understanding of many subjects, not least of them the question of Adam’s sin in the Garden of Eden, has been greatly shaped by the thinking of St. Augustine of Hippo (354–430 CE). Unfortunately, Augustine’s view of original sin was predicated on St. Jerome’s Latin (mis-) translation of Romans 5:12, which Jerome misunderstood to say that all humans bear the guilt of Adam’s sin, and not merely the consequence of that sin, which is death. To avoid association with Augustine’s view, Orthodox Christians generally prefer to refer to Adam’s sin as “ancestral sin.” Christian Orthodoxy also rejects the Calvinist notion that humankind is utterly depraved as a result of the Fall and the resulting denial of human freedom.

The Atonement

Western Christians since the eleventh century have largely understood the reconciliation between God and humankind in terms associated with St. Anselm of Canterbury (1033–1109). His “satisfaction theory” of the Atonement seems to portray God as requiring satisfaction for the sins of humankind, with Christ undergoing the required vengeance. In contrast, the Orthodox or “classical” theory sees the Cross as the victory of Christ over the forces of evil. More than that, however, the Christian East understands the salvific work of Christ as considerably wider and more far ranging than the Crucifixion alone. Humankind

was separated from God by our nature, by sin, and by death; Christ overcame these obstacles through his Incarnation (by which he assumed and therefore healed human nature), his Crucifixion (by which he overcame sin), and his Resurrection (by which he destroyed death and made all of humankind immortal).

Soteriology

Orthodoxy has been largely untouched by the Western disputes concerning justification and sanctification, instead understanding salvation as a matter of *theosis*, or deification. Tracing the idea from biblical texts such as 2 Peter 1.4, the Gospel of John, and the epistles of St. Paul, through the texts of patristic witnesses such as St. Irenaeus of Lyons (c. 120–203 CE), St. Athanasius of Alexandria (298–373), and St. Gregory Palamas (1296–1359), the Orthodox understand salvation as our becoming by grace what God is by nature.

Grace versus Free Will

A great part of the Reformation debate with Roman Catholicism centered on the relative roles of grace and free will in human salvation. Some Protestants, concerned to safeguard the efficacy of God's grace, went too far and denied human freedom. Orthodoxy overcomes this opposition with its understanding of synergy, the biblical idea (as in 1 Corinthians 3:9) that we are cooperators with God.

Moral Theology

Western moral theology, utilizing the insights of philosophical ethics, usually portrays the nature of morality as a function of nature (natural law), utility (various consequentialist theories), the character of the moral agent (virtue ethics), or simply as a matter of God's command or prohibition (voluntarism). While these elements play a role in the work of some Orthodox moral theologians, the patristic understanding characteristic of the tradition as a whole sees the moral life as a function of *theosis*.

Spiritual Theology

The classic text of Orthodox spirituality is *The Philokalia of the Neptic Fathers*, a five-volume Greek work edited by St. Nicodemus of the Holy Mountain (1748–1809) and St. Makarios of Corinth (1731–1805), published in 1782. The *Philokalia* (“love of the beautiful”) is a collection of writings on the life of prayer ranging from the fourth to the fourteenth centuries. It is associated with hesychastic (from the Greek *hesychia*, meaning “stillness”) spirituality and gives special attention to the Jesus Prayer (“Lord Jesus Christ, Son of God, have mercy on me”).

Science and Religion

Because Orthodoxy has emphasized a spiritual epistemology, or gnosiology, aimed at the deification of the creature rather than a totalizing narrative subjugated to biblical accounts, it has not been concerned with either the astronomical debates sparked by Galileo in the seventeenth century or the creation–evolution debate that began with the work of Charles Darwin in the nineteenth century but which was more characteristic of the twentieth century.

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See also Roman Catholicism

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Churchill, Winston

(1874–1965)

BRITISH STATESMAN

Sir Winston Spencer Churchill, British politician and writer, is best known as his country's prime minister during World War II. In 1940, when Britain looked defeated, he defiantly rejected any deal with Nazi Germany. Determined to fight on, he inspired his people with oratory that called upon them to be heroes. At the time of supreme crisis, he promised nothing "but blood, toil, tears, and sweat."

Churchill's lifetime spanned a period that began when Britain's prestige was near its peak and ended when Britain had fallen to the level of a second-rank power and its empire had broken up. Churchill enjoyed a long, multifaceted, and sometimes controversial career. It started in the 1890s when he was a glory-seeking cavalry officer and journalist in India and concluded in the 1950s when as an old man he headed the British government in the first decade of the Cold War. In 1953 Queen Elizabeth II knighted him, and ten years later the U.S. president John F. Kennedy made him the first honorary American citizen.

Egocentric, energetic, and extravagant, Churchill often appeared larger than life. Although short in stature and unathletic in build, he seemed a giant. His image was that of a jaunty, confident, cigar-smoking, hard-drinking, bulldog-obstinate John Bull. Few people knew that he suffered from debilitating bouts of depression that he called his "black dog." Other than his wife Clementine, he had few close friends.

By birth, Churchill was an aristocrat, although without a personal fortune. Like most boys of his social class, he grew up spending more time with his beloved nanny than with his aloof parents. His

politician father, Lord Randolph Churchill, was a younger son of the Duke of Marlborough. His mother, born Jennie Jerome, was the glamorous daughter of a wealthy American. After doing poorly at Harrow school, the young Churchill attended the military academy at Sandhurst.

Churchill's time as an army officer was brief. He saw combat on the Indian frontier and in the Sudan, was a military observer in Cuba during conflict between Spanish troops and nationalist rebels, and during the South African (Boer) War was taken prisoner by the Boers and escaped. Except for a few months during World War I, when he commanded a battalion in France, he was a civilian the rest of his life, but a civilian who by holding political office commanded navies and armies.

In 1900 Churchill was elected to the House of Commons as a member of the Conservative Party. Objecting to Conservative proposals for protective tariffs, he soon switched to the Liberal Party, which defended free trade. The renegade Churchill was rewarded with increasingly important offices, beginning with the number two position in the ministry for colonies. He earned a reputation as a social reformer while president of the Board of Trade and home secretary. Shortly before the outbreak of World War I he became first lord of the admiralty. The failure in 1915 of a naval attack on Ottoman Turkey, followed by a disastrously unsuccessful land invasion at Gallipoli, led to Churchill's resignation. Demoted to the office of chancellor of the Duchy of Lancaster, he soon left the government altogether. Two years later he returned to high office as minister for munitions. Subsequently, he served his friend Prime Minister David Lloyd George as secretary of state for war and

It is a mistake to try to look too far ahead. The chain of destiny can only be grasped one link at a time. • **Winston Churchill (1874–1965)**



Prime Minister Winston Churchill of Great Britain (c. 1942). Library of Congress.

air and as colonial minister. Lloyd George's coalition government fell in 1922. By this time, the Liberal Party was divided and dying. Churchill made his way back to the Conservative Party. Prime Minister Stanley Baldwin was generous to the returning prodigal: Churchill served as chancellor of the exchequer from 1924 to 1929. This would be the last office he would hold for a decade. A multiparty national government dominated by the Conservatives, which came to power in 1931, kept Churchill on the back benches.

In the 1930s Churchill took positions that undermined his credibility. He led the fight against Baldwin's proposal to grant India a large degree of political self-government. Churchill was determined to preserve the integrity of the British Empire. When Edward VIII insisted on marrying Wallis Simpson, a divorced American woman, Baldwin and the leaders of the other political parties demanded that the

king abdicate. In contrast, Churchill wanted the king to keep his crown. Such eccentric policies isolated Churchill. He was regarded as impetuous and unreliable. This reputation made it difficult for Churchill to get a hearing when he warned about German rearmament and fiercely attacked appeasement of Adolf Hitler.

Nazi Germany's invasion of Poland in 1939 vindicated Churchill. He was reappointed first lord of the admiralty. When the war went badly, Prime Minister Neville Chamberlain resigned, and Churchill at age sixty-five replaced him. He assumed this office on the day that the German armies began their successful invasion of France and the Low Countries. After France sued for peace, Britain had no major allies until 1941, when Germany invaded the Soviet Union and Japan attacked United States possessions in the Pacific. Churchill took an active role in planning military campaigns. Remembering the enormous casualties of World War I, he favored a Mediterranean strategy and delayed a cross-Channel invasion of Nazi-occupied France. Despite his age and the discomfort of World War II aircraft, Churchill traveled frequently to confer with other political leaders. In addition to meetings with President Franklin Roosevelt in North America, he participated in other so-called summit conferences at Casablanca, Cairo, Teheran, and Yalta. Although fiercely anti-Communist, he developed a working relationship with the Soviet leader, Joseph Stalin.

Churchill's party lost the general election held in 1945. Although he was over seventy, his political career was not over. In 1946 he made his famous "iron curtain" speech at Fulton, Missouri, one of the defining moments that marked the beginning of the Cold War with the Soviet Union. During the 1940s Churchill favored some kind of limited economic and political unity for Western Europe. From 1951 to 1955 he again served as prime minister, retiring in his eighties.

Outside politics Churchill earned a reputation as a writer. Always in need of money, he wrote prolifically, mostly history and biography, often dictated to secretaries and researched by assistants. Some of



Winston Churchill, wearing a coronation robe, with his son and grandson in ceremonial dress. Photo by Toni Frissell. Library of Congress.

his books first appeared serialized in newspapers. His most important books include a biography of his father (1906); a history of World War I entitled *The World Crisis* (1923–1931); an autobiography up to the year 1904, entitled *My Early Life* (1930); a history of his ancestor, the first Duke of Marlborough (1933–1938); a collection of biographical essays, *Great Contemporaries* (1937); *The Second World War* (1948–1954); and his *History of the English-Speaking*

Peoples (1956–1958). In 1953 he was awarded the Nobel Prize for Literature.

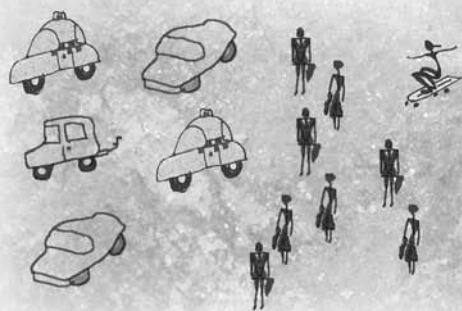
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See also British Empire; World War II

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Cinchona

Incas of the Andes were likely to have used the bark of the cinchona tree to combat fever, and Europeans later recognized it as a remedy for malaria, but many found it difficult to stomach and inconsistent in strength. After 1820, scientists' ability to isolate quinine, an antimalarial alkaloid, from its bark led to the cultivation of the tree in Java and India, until the advent of synthetic antimalarials after World War II.

Native to the eastern slopes of the Andes, the bark of the cinchona tree entered into the medical practice in Europe in the late sixteenth century as the cure for recurring fevers—that is, malaria. It is likely that the Incas had earlier used cinchona as a fever-reducing drug; the Spanish conquistadors are thought to have benefited from this indigenous practice when they introduced malaria from the Old World into the Americas during the course of their conquests. Popularized by the Jesuits, the use of cinchona bark increased in Western Europe over the course of the seventeenth and eighteenth centuries, eventually overcoming Protestant prejudice against the “Jesuits’ bark.” It gained a deserved reputation as a specific remedy for a particular set of physical complaints, long before the germ theory of disease.

Cinchona bark had its drawbacks, however. There were many different varieties of cinchona tree. The four principal alkaloids—that is, the organic bases containing nitrogen that had a physiological effect—varied greatly among the barks. Furthermore, the bark was difficult to stomach; Europeans generally took it mixed with wine.

From 1820, after the successful isolation of the cinchona alkaloids of quinine and cinchonine by French

chemists, demand increased for cinchona bark as the raw material for quinine, which became the most popular antimalarial medicine. Malaria was widespread in both the Old and the New Worlds, and new chemical manufacturing companies in North America and Western Europe sprang up to transform cinchona bark into the more easily digestible, alkaloidal forms of the antimalarial medicine. Andean specialists (*cascarillos*) harvested the bark; new roads were cut into the remote highlands of Bolivia, Ecuador, and Peru, and new towns were established to handle exports. The Andean harvesting methods, however, involved stripping off the bark, which killed the trees and ultimately put the future of the extractive industry at risk.

By the mid-nineteenth century, Europeans became increasingly concerned about the prospects for a continuing supply of cinchona bark from the Andean highlands. As Europeans embarked on their second great colonial expansion in the middle of the nineteenth century, the administrators of European empire laid plans to create a cinchona plantation industry within the Asian tropics. Thus began one of the great imperial European botanical ventures of the nineteenth century.

After Dutch failures in the 1850s to establish cinchona on Java in the South Pacific, in the early 1860s the British introduced cinchona to the Nilgiri Hills in southern India and to the highlands of Ceylon (Sri Lanka). These experiments were successful with two varieties known as *Cinchona succirubra* and *C. officinalis* that grew at different elevations. But these sizable efforts were then largely eclipsed by the dogged experimentation of the Dutch managers on Java, who procured seeds of another subvariety of cinchona known as *C. ledgeriana*. The Dutch experimenters



Illustration of *Cinchona calisaya* from a nineteenth-century book.

sampled the alkaloid contents of the barks of individual trees, and then destroyed all but the highest yielding. They also undertook an agronomic program of grafting high-yielding *C. ledgeriana* on to the hardier *C. succirubra* stocks. By the late nineteenth century, a large majority of the world's supply of cinchona bark was produced under the auspices of the Dutch on Java. The British cinchona plantations in India continued to produce bark for antimalarial medicines to be consumed within British India. Other European imperial powers—notably the French and the Germans—also set up cinchona plantations in Africa and in Southeast Asia, but these plantations produced relatively small amounts of bark, destined for the colonial tropical markets.

The demand for cinchona bark to make antimalarials was erratic. Malaria was a global health problem, but the antimalarials were expensive, and North

Americans and Western Europeans made up the lion's share of the market. Demand spiked during epidemic outbreaks and then receded. Plantation owners on Java often found themselves with an oversupply of cinchona bark, and when the price plummeted, some were forced out of business. The survivors of these market paroxysms entered into cartel agreements in a series of attempts to stabilize the global price of the bark.

During the 1920s, plantation owners and cinchona brokers formed an international cartel known as the Kina (the Dutch word for “cinchona”) Bureau, based in Amsterdam. It set the prices for producers and purchasers. In 1942, the Japanese conquered the Dutch East Indies and seized control of the cinchona plantations, severing the Allies' supply and provoking experimentation with other natural and synthetic antimalarials. After the war, the cinchona plantations on Java were reestablished, but the new synthetic antimalarials, such as chloroquine, had come to replace most of the demand for quinine from cinchona.

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See also Malaria; Quinine

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By 3000 BCE, the first system of cities, with Uruk at its center, emerged in Mesopotamia. Urban centers have played important roles in human history since, by exerting economic, political, and cultural influence over large populations. As the portion of the world population inhabiting cities has grown over the past several millennia, urban centers have become larger and more influential.

World history is sometimes viewed as the history of cities because urbanization has been coextensive with the portion of human experience commonly portrayed in world histories—that is, the past five or six millennia. Indeed, the study of world cities and their interrelationships can offer useful insights not just into the growth of a central form of human organization, but also into world history itself, especially in terms of these three questions: (1) How are world cities defined and identified? (2) Over the entire time span of world history, which cities were world cities, and can they meaningfully be regarded as the centers of the world system of their time? (3) What are the major outlines and trends in the system of world cities?

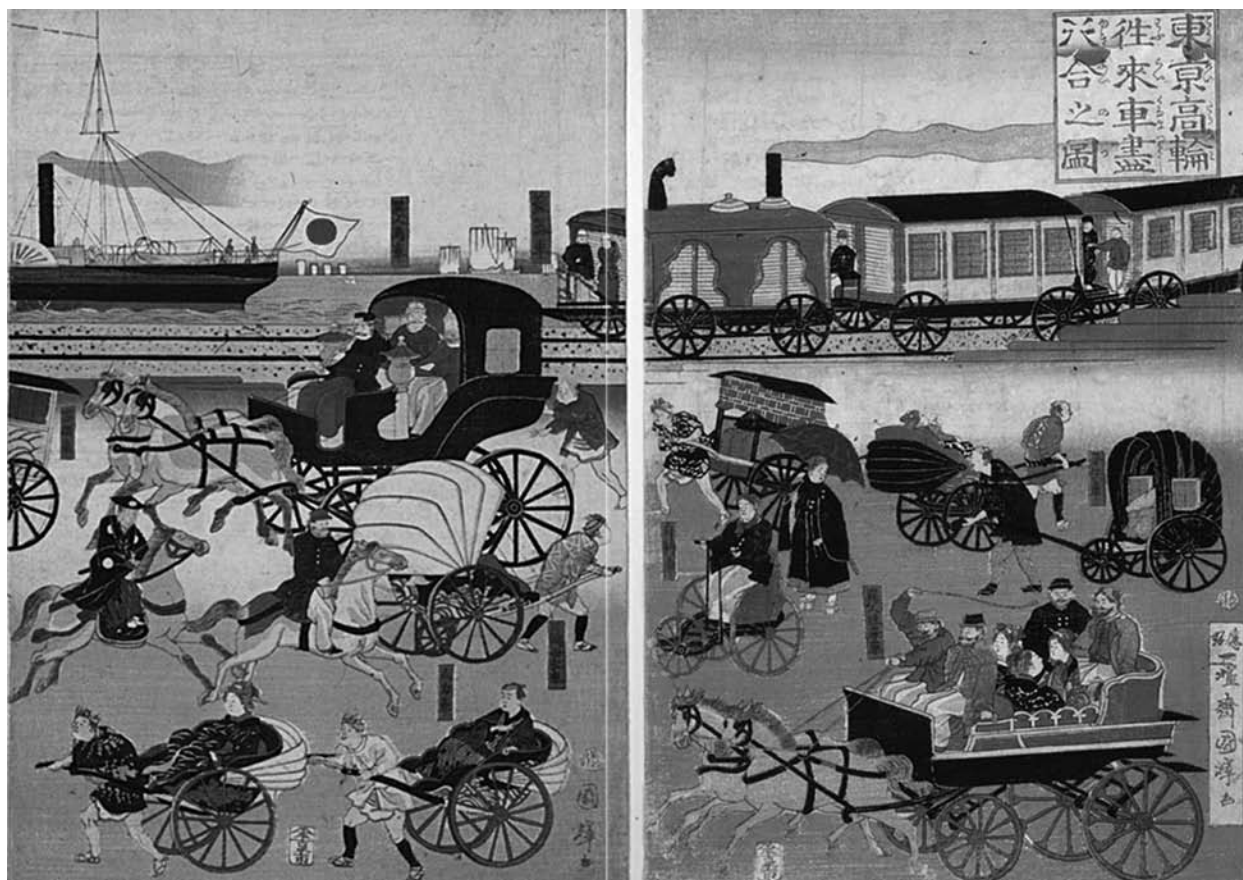
What Is a “World City”?

World cities can be defined as cities of world importance, actually and potentially. The source of that importance might be either a city’s size or its position in the functioning of the world system. *Size* can be reckoned principally in terms of population numbers (compared with other cities of that same era)—and with distinctions made among world cities of the ancient,

classical, and modern periods—because over historical time cities have grown larger by orders of magnitude. The term *world system position* might, in the most obvious case, refer to a place in the global economy, either in a commercial role or a productive capacity. For instance, the capitals of powerful or strategically important states and the military garrisons they might harbor will be politically important, and religious centers will attract interest and visitors from afar. There have also been cities noted for their cultural assets and the excellence of the learning they afford. Large cities have often been multifunctional; large populations, in turn, provide fertile soil for innovative enterprises. It is hard to find a single, dominant world city over the past several millennia, but sets of urban centers can be identified and examined for their form and composition, and for the connections among them (for example, were they imperial or nonimperial?).

Identifying world cities primarily by size, both spatial and temporal, is useful because in a survey of this scale it’s not practicable to make an empirical, detailed, and documented assessment of world system position. The ancient era (about 3000 to 1000 BCE) takes into account cities with settlements whose population may be estimated (for instance, on the basis of archaeologists’ site reports) to be in excess of 10,000; the population of most such cities are in the range of 10,000 to 100,000. The classical era (1000 BCE to 1000 CE) considers urban centers with populations of 100,000 or more, most typically in the range of 100,000 to 1 million. For the modern era (since 1000 CE) the focus is principally on cities with populations in the range of 1 to 10 million.

Until quite recently the prevailing view held that a statistical description of urbanization prior to about



This Japanese woodblock print by Utagawa Kunitoku shows various modes of transportation used in Tokyo in the nineteenth century, from carriages and rickshaws to tricycles and trains. Library of Congress.

1800 was impossible. But new sources have opened up—for instance, in archaeology and social and economic history—that make that task less difficult. The pioneering effort in this regard has been Tertius Chandler's *Four Thousand Years of Urban Growth* (1987), a product of decades of research that brought together a mass of material on cities between 2250 BCE and 1975 CE. Complementing and extending that work has been George Modelski's *World Cities: -3000 to 2000* (2003), which provides fuller coverage for the first four millennia but deals more lightly with the data from 1000 CE onward; it also reports on world trends in urbanization.

The Ancient World

The first city system emerged in southern Mesopotamia in the fourth millennium BCE in what the archeologist Vere Gordon Childe dubbed the “Urban Revolution.” This group of urban settlements

centered on Uruk, clearly a major cult center; Uruk was probably also a focus of political activities and was almost certainly the center of regional exchanges whose reach extended from Iran in the east, to the upper Euphrates in the north, and to Egypt in the west. By 3000 BCE there existed in this area (and nowhere else) some half-dozen units that satisfy this survey's criteria for an incipient world city system. Uruk was at that time the largest among them and the largest city in the world at that time, with a population possibly reaching forty thousand. And this is just one reason for calling it the first world city, because it is also known, from archaeological and literary evidence, that Uruk was the likely locus of the invention of writing and of calendars, innovations that proved to be of epochal significance.

This was the Uruk nucleus of an emerging system of world cities. The first basic, identifiable trend was the emergence, by the mid-third millennium BCE, of a viable and productive center in Sumer, the heartland

of cities, which was then organized in the form of some two-dozen autonomous city-states. An increasingly costly competition for regional leadership animated those states (for example, by about 2300 BCE, the competition between Umma and Lagash), which made it possible for Sargon of Akkad, from outside the Land of Sumer, to step in and subdue them. The reign of Akkad and Sumer came and went, and was followed by a native dynasty based on Ur. As late as about 2000 BCE something of a numerical parity existed between Sumer and non-Sumer cities, but a short time later the former land of cities completely dropped out of sight. By contrast, important cities rose in Egypt (Memphis, Thebes, and Heliopolis), in north Mesopotamia (Mari), and in the Indus Valley (Mohenjo-Daro and Harappa).

The second basic trend was the experience of dispersal, or more precisely, the spread of urban practices throughout Eurasia that coincided with what in several areas were described as “Dark Ages”—for instance, in Sumer, in the Harappan region, and in post-Mycenean Greece. By the end of the ancient era (and the Bronze Age), three of the four major regions of the “Old World” had been fertilized by the Urban Revolution: West Asia (for instance, Babylon), the Mediterranean (Mycenae), and East Asia (Yin, near Anyang, a major Shang capital). The less-than-successful experiments in the Indus Valley, in the Ukraine, and even in Peru would ultimately bear fruit, too. This dispersal was in fact a form of redistribution, because while Sumer lost cities and was virtually deurbanized, urbanism rose elsewhere and the number of world cities remained about the same as it had been a millennium earlier (twenty-two in 2000 BCE became twenty-three in 1200 BCE). In other words, the ancient era witnessed rapid urban expansion at the center in its first half, followed by deceleration and dispersal in the second.

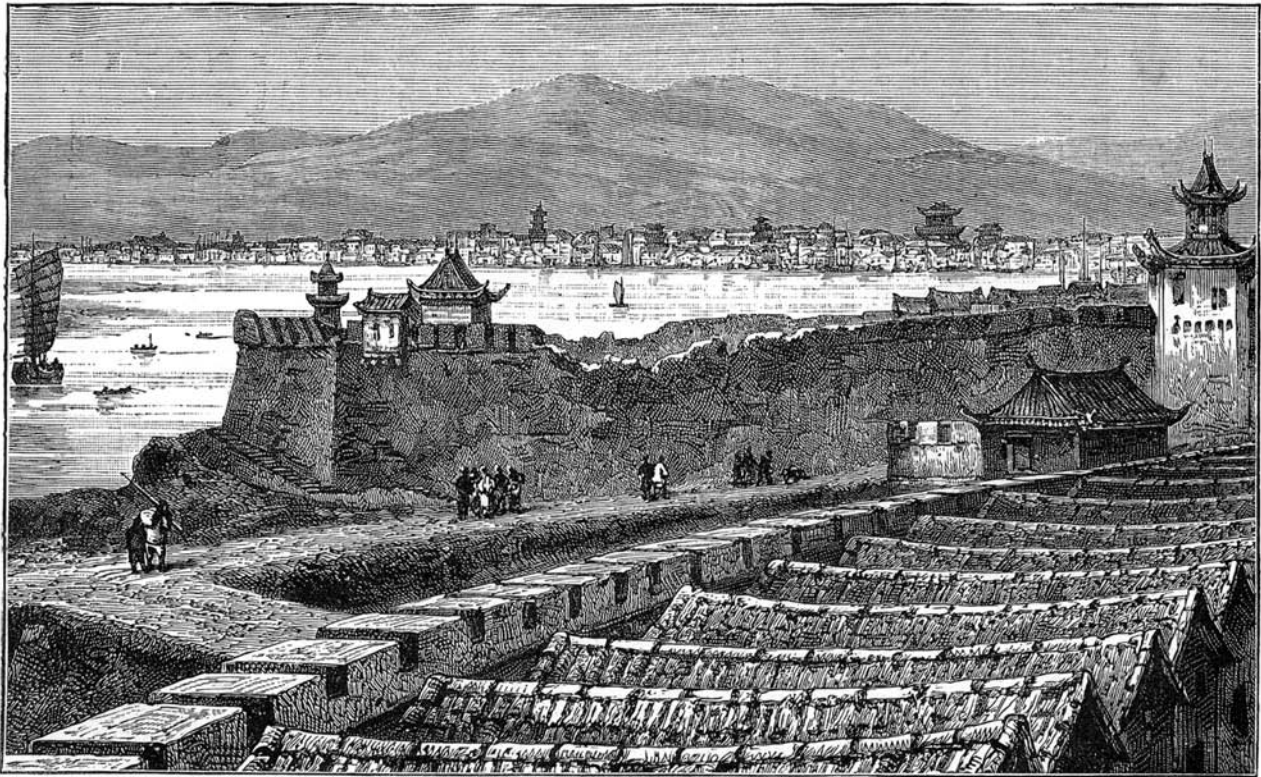
The Classical World

The principal tendency of the classical era was the rapid formation and subsequent consolidation of strongly regional but also interconnected urban

systems in the four main regions of Eurasia: East Asia, South Asia, the Mediterranean, and West Asia. A separate development also occurred in the Americas. In the first three of these regions a thriving system of independent city-states developed, which then succumbed to imperial rule; but in West Asia, the sequence is reversed, and in Mesoamerica, the Mayan system of city-states collapsed by itself into incoherence.

In East Asia, virtually all the principal urban growth occurred in China. Haoqing (near Xi'an) was the Western Zhou (1045–771 BCE) capital and ceremonial center that bridged the ancient and classical periods. After its destruction in 771 BCE, the political center shifted to Luoyang, and in this Eastern Zhou era (770–221 BCE) that followed, urbanization took off with considerable flourish. One Chinese historical record credits ninety-one cities as likely founded before 771 BCE, the number rising to 466 in the Spring and Autumn period (770–476 BCE) of Eastern Zhou. City building was apparently part of state building, with the term for “state” (*guo*) denoting a walled city. While many of these cities were quite small, in no time a system of independent and flourishing states arose, each anchored in a major city with merely nominal and ceremonial links to Luoyang.

That, in turn, left the field open to immensely destructive wars, in what came to be known as the period of Warring States (475–221 BCE). The most ruthless and warlike of these states, Qin, conquered all the others and founded the first imperial dynasty 221–206 BCE). But that proved short-lived, and the Han dynasty (206 BCE–220 CE) that replaced it quickly built a great new capital, Chang'an (Xi'an), while continuing Luoyang in a secondary role. Chang'an and Luoyang each had their good and bad times (the former was largely destroyed in 189, sacked in 315, plundered in 756 and 763, and subjected to a bloodbath in 881; the latter was utterly destroyed in 189 and 190, sacked in 311, and declined after 907), but they continued to alternate as China's leading cities right until the end of the classical era, when Kaifeng assumed a central place in the Northern



Citizens of a nineteenth-century Chinese city stroll along a protective wall.

Song (960–1126). By that time Kyoto (Japan) and Sorabol (in Silla, Korea) also joined the ranks of world cities in eastern Asia that accounted, in the classical era, for about one-third of the world's major urban potential.

The South Asian experience paralleled that of East Asia, albeit on a smaller scale, in that the first millennium BCE saw a flourishing of cities in a context of autonomy, in north India in particular, a process that was then set back by the founding of imperial structures and by external incursions. Out of a cluster of tribal units an urban landscape emerged in the Ganges Valley that in turn coalesced into a system of independent polities that became the seedbed of Buddhism. However, a recent study of the sites of the capitals of sixteen of these early historic states showed them to be in the range of 50 to 200 hectares, suggesting populations smaller than their counterparts in China of that time and falling below our threshold.

Over time, one of these became the dominant power and formed the core of an empire centered on Pataliputra, on the Ganges, a large city that greatly impressed a Greek ambassador about 300 BCE. In the second half of the classical era the focus of north

India shifted to Kanauji, which became the capital of the Guptas and continued as the centerpiece of regional politics until it was sacked by Muslim armies in 1018 and then destroyed. In the south, Buddhism gained an early foothold in Sri Lanka at Anuradhapura and came to radiate its influence throughout Southeast Asia, including Sri Ksetra in Burma (now Myanmar), Palembang in Srivijaya, and Angkor in Cambodia.

The Mediterranean was the focus of the other major urban network of the classical world, equal in weight to East Asian. The Mediterranean network began to form later in the ancient era but quickly expanded via three great waves of urbanization: the Phoenician, the Greek, and the Roman. In about 1000 BCE Tyre sent a first colony to Cyprus, and soon its settlers founded Carthage, which in short order became the powerhouse of the western Mediterranean. Pliny the Elder, the encyclopedist, put its population, prior to the start of the wars with Rome, at 700,000, probably too high but indicating its reputation. The second wave came from the Greek world, under the sponsorship of individual cities. For example, Corinth initiated the foundation of Syracuse, on



The harbor of Hong Kong, a major center of trade and commerce.

Sicily, whose defeat of the Athenian expedition tipped the scales in the Peloponnesian war, and which may have been, about 400 BCE, the largest city in the Greek world.

But the greatest impetus to Hellenization came from the conquests of Alexander of Macedon (Alexander the Great), the founder of numerous cities. The most important of these was Alexandria, which became the capital of the post-Alexandrine rulers of Egypt, the Ptolemies, who fashioned it not only into a center of political power, and of trade and shipping, but also equipped it with a great lighthouse on Pharos Island, a beacon to ship-farers and a symbol of enlightenment for a city boasting of a *museion* with its huge library. A city that was home to many nationalities, Alexandria became the first exemplar, in Stoic thought, of a *cosmopolis*, a city of the world, a higher formation than a mere *polis*.

The last wave was that of the Romans, builders of an empire, but also builders of cities. Rome annihilated Carthage (but within a century put a new city in its place) and conquered Alexandria, to become

the imperial capital of this new Greco-Roman world. It grew to huge proportions, to become the world's most populous city, its citizens, untaxed, living off free bread, slave labor, and other spoils of empire. The sack of Rome in 410 CE marked the start of the collapse of Western Rome and the definitive onset, in this part of the world, of the second Dark Age.

Which was the city whose population was the first to attain 1 million? The estimates for Alexandria, at about 100 BCE, tend to put it in the 500,000 range, but some scholars claim that it might have reached 1 million between 200 and 100 BCE, which would make it first. But a more conservative guess would be Rome about 1 CE. The next city to reach "millionaire" status was Tang era Chang'an, at between 700 and 800 CE.

Early in the classical era, powerful west Asian empires, in particular the Assyrian and the Persian, pressed upon the Mediterranean world, probably pushing the Phoenicians out to sea and impressing the Greek world. But the collapse of the Persian realm diminished the vitality of that region and reduced its

Table 1.

Modern Cities of 1 Million Inhabitants or More (in millions)

Year 1000	1200	1400	1600	1800	1900*	2000*
1	3	1	1	4	16	299
Baghdad	Baghdad	Nanjing	Beijing	London	London	Paris
	Kaifeng			Beijing	Manchester	Berlin
	Hangzhou			Edo	Birmingham	Vienna
				Guangzhou	Glasgow	Moscow
					New York	St. Petersburg
					Chicago	Beijing
					Boston	Tokyo
					Philadelphia	Calcutta

*These are partial lists of the number of cities.

urban potential, and it was not until the Muslim conquests of the seventh century that new political and urban space opened up to become what is now called the “Muslim world.” Arab cavalry armies overthrew the Sasanian Empire and overran large portions of the Eastern Roman Empire based in Constantinople.

Urbanization became one of the hallmarks of the Muslim world. Many cities were conquered, such as Alexandria and Antioch, others were destroyed, such as the Sasanian capital, Ctesiphon, and yet others founded, among them Fustat, and later Cairo, al Kufah, and Basrah, as well as Baghdad and Rayy (later to become the seed of Tehran), together with Kairouan and Cordova (as a capital) in the west. By 900 CE, the Muslim world had the densest urban network; it was a principal precinct of the world system on the eve of the modern era.

Each of the four regional processes in Eurasia in the classical era had its own developmental trajectory, but these processes were not isolated phenomena but were entangled in several ways, though seldom in a complete fashion. They can be seen as a world city system with two chief lines of communication: the overland Silk Roads, via Central Asia, and the maritime Spice Roads, via the Indian Ocean. Both in effect bound east Asia to the Mediterranean. The world cities basically formed one system, with routes that served as links among the cities. These were not just trade routes but also the paths taken by new ideas and social innovations such as Buddhism.

The one area of significant urban development that stands apart was in the Americas, between

400 and 800 CE in particular, cities in Mexico (Teotihuacán), the Mayan lands (Tikal, Caracol), and possibly even Peru, created a conceivable nucleus of a regional city system. But the system was short-lived and largely collapsed after 800. Anthropologist David Webster questions the urban character of the Mayan cities in particular, and suggests that they were actually “king-places” or “regal-ritual” cities whose single-functionality was one reason for the fragility of the system when it was exposed to environmental stress and persistent warfare.

The Modern World

For the modern era, this survey returns to a unitary vision because the threshold criterion rises to 1 million, in other words, to “millionaire cities” that, at least initially, were few in number. (See table 1.)

The table depicts a process that over the course of one millennium raised the number of modern world cities from one, to 300, a rate of urban expansion never previously experienced. What is more, most of that expansion occurred in the last one or two centuries.

To start with, the urban landscape at the turn to the second millennium continued as it was in 900, with a central role for the Muslim world and strong Chinese participation. But then, soon after 1200, disaster struck. In a space of two or three generations, the Mongols captured all the “millionaire cities” and seized control of the Silk Roads, even while laying waste to north China and Central Asia, destroying and massacring



A view of central São Paulo. Now the largest metropolis in South America, the city sprawls over 7,800 square kilometers and is the corporate headquarters of Brazil's most important firms.

the inhabitants of Beijing, Merv, Samarkand, Herat, and Baghdad. When they faded away, one century later, this was still the “Asian age,” but the spirit had gone out of it, and the Silk Roads withered.

Viewing the table of modern world cities, an “Asian age” might still be seen right up to 1800 because all the world’s major cities were then Asian, if not actually Chinese. But on closer inspection that is less of an indicator of wealth and power than a symptom of stagnation because the table shows, before 1800, no evidence of growth, only some form of musical chairs. The growth that mattered was happening at the other end of Eurasia, in Western Europe, but it was, for a while, still under the radar. The growth factor initially rose from the city-states, Genoa and Venice, and in the Low Countries, whose experience was by 1500 translated into that of nation-states. Portugal, Spain, and the Dutch Republic assumed increasingly important global roles spearheaded by their enterprising cities—Lisbon, Antwerp, and Amsterdam. These were experiments in new forms of global organization that reached maturity with the experience of Britain. By 1800 London broke through to the “millionaire city” league, which suggests that innovation is not just a product of city size.

The list for 1900 offers a clear picture of the urban structure that shaped the world of the nineteenth and twentieth centuries: the strong British stake earned in

the Industrial Revolution, with London, Manchester, Birmingham, and Glasgow; the then-new, and rising, United States’ challenge, with New York, Chicago, Boston, and Philadelphia; the traditional great powers of Europe, with Paris, Berlin, Vienna, Moscow, and St. Petersburg, and somewhat marginally, Tokyo, Beijing, and Calcutta.

By 2000 the urban landscape was much changed. The figure reported in table 1, some three hundred cities for that year, means that the population of world cities became too numerous to be shown in that small table. In that year, all the world’s regions were now fully represented. The largest single share was that of east Asia which, at over one-third, was not really surprising, for this is about what its share was in the classical era. Overall, the world city system had moved into a new configuration and scholars are now at work to clarify the nature and composition of this new system.

Major Trends

Over the past several millennia cities have emerged and have grown bigger and better, and their weight in the social makeup of the human species has kept on rising. By the start of the twenty-first century, one-half of the world’s population was living in cities, and 10 percent in world cities alone (compared to about 1 percent in the ancient and 2 percent in the classical worlds). What is more, because of the concurrent rise in the same time frame of the overall population of this planet, from maybe 6 million to over 6 billion, the absolute number of people living in cities is the highest ever.

The world cities have composed, over the millennia, the center of the emerging world system, but their story can never constitute the entire picture, for it neglects all those living outside the great urban centers, those in the peripheries and in the hinterlands of world history. In fact, the process of interaction between the centers and the peripheries has been a major and recurrent feature of the world system. Thousand-year-long sequences of concentration, which brought city building, may have alternated with periods of redistribution that show stable if not



Tianjin, a municipality in northeastern China, is home to the country's sixth largest urban population.
Philip Baguet.

stagnant urban conditions, and these, in the past two instances, gave rise to Dark Ages. This raises the question of whether the urban expansion and concentration recently and prominently underway might not be heralding the onset of a new age of redistribution.

The world cities might be thought of as making up a complex, interlinked system in a condition that might be termed “urban entanglement.” In approaching this

system, the useful starting point is the presumption of connectivity; in other words, what needs to be demonstrated is isolation and lack of contact rather than the reverse, which is currently the standard. If world cities have formed a system, then that system might be thought of as having emergent properties over and above the characteristics of its members, such as the alternation of phases of concentration and redistribution just mentioned.

More generally, the world city system might be viewed as a component of world system evolution. The eras of world history (ancient, classical, and modern) could be considered as phases of that process, and such eras display quantitative features (such as changes in magnitude) as well as qualitative changes (such as the scope of the network). Therefore, world urbanization, which is a key component of globalization, might also be usefully studied as an evolutionary process.

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See also Urbanization

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Citizenship

Citizenship in a polity not only signifies membership in that community, but also the rights and duties that come with it. The ideal of citizenship grew from ancient Greece and Rome, but it has varied with the world's shifting political paradigms, expanding to allow more people into its framework.

The core meaning of *citizenship* is membership in a community. Beyond that core meaning, conceptions of citizenship have changed greatly over time and place, as to the nature both of the community and of the membership in question. Classically and enduringly, citizenship has been about a *political* and often a *legal* relationship: a citizen is a member of a polity by virtue of reciprocal rights and duties shared in common. As a membership status and as a behavioral norm, then, citizenship bespeaks an equality of citizens; but citizenship also thus entails inequality, in distinguishing citizens from noncitizens.

Classical Origins

The historic origins of citizenship lie distinctively in ancient Greece and Rome. Unlike the advanced civilizations that developed in the river valleys of ancient Mesopotamia, Egypt, and China, the classical civilizations of Greece and Rome were founded on the primacy of the city-state regime. The city-state (*polis*) of fourth-century BCE Athens produced the first classic theorist of citizenship, Aristotle (384–322 BCE), who expounded Athenian citizenship as a matter of “democratic” self-governance, with citizens (*polites*) at once “ruling and being ruled.” Notably, however, most

of the adult inhabitants of Athens—women, slaves, and even resident aliens such as Aristotle himself—were not eligible for citizenship. Citizenship was thus a privileged legal status and a restricted participatory civic ideal. In the Roman republic, with its earliest territorial expansions in the fourth century BCE, the government began to extend the status of the citizen (*civis*) far beyond the city of Rome itself, in order to secure Roman rule. Expansions of the republic, however, increasingly precluded an active political role for most citizens, who had no opportunity to participate in the institutions of government, which remained centered in Rome. Even in the late republic of the first century BCE, however, an ideal of “civic virtue”—of the citizen’s devotion to the polity—shaped Roman public culture, as exemplified in the classic legacy of the philosopher, politician, and lawyer Marcus Tullius Cicero (106–43 BCE). During the ensuing centuries of the Roman Empire, however, citizenship became principally a formal matter merely of imperial jurisdiction and administration. With the decline of centralized imperial rule in the fourth and fifth centuries CE, the classical idea of citizenship went into eclipse.

Medieval Eclipse and Neoclassical Renaissance

During the medieval period it was not only the collapse of centralized government that diminished the significance of citizenship in the European West; the rise of Christianity brought a profound challenge to the classical primacy of citizenship as a societal ethos. According to the great Church father Augustine

Voting is the least arduous of a citizen's duties. He has the prior and harder duty of making up his mind. • Ralph Barton Perry (1876–1957)



The Roman Senate. Although the republic extended the status of “citizen” far beyond the city limits, government institutions remained centered in Rome.

(354–430 CE), in his masterpiece of Christian cosmology *The City of God*, men’s allegiance to a “heavenly realm” posed a superseding alternative to all earthly allegiances. Furthermore, throughout medieval Europe the growth of feudalism brought regimes of decentralized government based on networks of inherently fragmented political allegiances. Citizenship, as it had in Athens, once again came to refer typically to association with a city or town. Citizenship meant the enjoyment of “liberties” as privileges or immunities granted to the members of a local urban community in its corporate capacity, for example, the English borough, the French *bourg*, and the German *burgh*.

The revitalization of urban life in parts of Europe eventually brought enhanced meaning to citizenship, notably among the preeminent city-states of Renaissance Italy. The commercial and civic vitality of such cities and the revival of the study of Roman law in leading universities fostered a neorepublican ideal of participatory citizenship. This neoclassical conception of citizenship in early modern Europe was elaborated in a rich literature of “civic humanism,” most famously, from the pen of the Florentine politician and scholar Niccolò Machiavelli (1469–1527).

Sovereignty, “Civil Society,” and Revolutions

Dating from the early modern era, the rise of powerful nation states found legitimization in cogent theories of monarchical sovereignty, such as those of Jean Bodin (1530–1596) and Thomas Hobbes (1588–1679). Such theories held that political identity lay in the direct personal relationship of every “subject” to the “sovereign.” Even in regimes of absolute monarchy, however, modern individual identity tended over time to become more than a matter of the political status of the “subject.” Commercial development brought increasing political and extrapolitical significance to individuals’ economic and social endeavors in the milieu of “civil society”; and the activities of civil society promoted attitudes of citizenship that supplemented and complemented the civic identity of the “subject.” This incremental reconception, from “passive subject” to “active citizen,” was also promoted by the very statism of centralizing national regimes, not least, for example, in their efforts to routinize general taxation. But, even more important, in England, America, and France, respectively, revolutionary neorepublicanism generated profound reconceptions of citizenship.

In reaction to absolute monarchy, including struggles for religious toleration and freedom, notions of popular sovereignty began to cohere in various theories of rights, whether legal or natural, that focused on the political importance and integrity of the individual. In England among the propertied elite, there emerged a developing political culture of individual “patriotic” vigilance against arbitrary government that climaxed in antimonarchical revolutions in the seventeenth century and that became institutionalized in the eighteenth. During the European Enlightenment more generally, various “social contract” theories accorded an essential civic role to the individual, for example, in Jean-Jacques Rousseau’s (1712–1778) morally impassioned vision of the *citoyen* as the individual constituent of “sovereign” government, and in Immanuel Kant’s (1724–1804) seminal philosophy of modern liberal individualism.



In medieval Europe citizenship was determined by a hierarchal series of allegiances leading to the monarchy. From top, left to right: (1) Knight of the Garter, (2, 3) warriors, (4, 5) serving men, (6) male citizen, (7) female citizen, (8) minstrel, (9) lady of rank, (10) Richard III, (11) Margaret of Scotland, (12) knight, and (13) the Earl of Warwick.

It was, however, in the late-eighteenth-century republican revolutions in America (1776–1783) and France (1789–1799) that modern democratic conceptions of citizenship were first constitutionalized and institutionalized. Drawing on but also transforming English constitutionalism, the new American nation reconceptualized citizenship as a matter of the constitutionally guaranteed fundamental legal rights of individuals. And American law increasingly emphasized the central idea of volitional allegiance as the essence of citizenship. An American law of naturalization, even more liberal than its English precedents, thus developed to supplement the long-

standing tradition of citizenship as a status typically acquired on the basis of birthplace (*ius soli*) or parentage (*ius sanguinis*). Inspired in part by the American Revolution, the epochal French Revolution, in its natural rights theory, exalted the ethos of citizenship. Moreover, the distinctively antifeudal animus of the French Revolution infused subsequent European ideals of citizenship both with intensified nationalistic sentiments and with burgeoning aspirations for social and economic equality.

Nationalism and Twentieth-Century Vicissitudes

The nationalism and egalitarianism of the French Revolution, together with the individual-rights ideology of American constitutionalism, shaped ideas of citizenship throughout the Western world for most of the nineteenth and twentieth centuries. Especially in parts of Europe, identities based on race or folkways variously informed ideas of citizenship. Such particularization of the concept of citizenship accorded with the historicism predominant in much European thought, especially as influenced by Georg Wilhelm Friedrich Hegel (1770–1831). At the same time, however, the egalitarian dynamic in citizenship took on increased meaning, especially insofar as representative democratic regimes fitfully expanded the scope, and extended the distribution, of the legal rights of citizens. Amid this growth of representative government, the right to vote became especially emblematic of modern citizenship.

Nevertheless, in addition to the inequality entailed by the distinction between citizen and noncitizen—for example, in national legal regimes of immigration restriction and regulation—modern citizenship has admitted of egregious internal inequalities. In various countries, attributes such as gender, race, and religious affiliation have long into the modern era remained the basis for denying to many adult members of society some of the most important incidents of full citizenship, including property rights and the right to vote. Even more pervasively, according to the critique of Karl Marx (1818–1883) and many later



A poster from 1919 urges immigrants to become American citizens. Library of Congress.

variants of Marxian theory, the economic regimes of capitalism of the modern West have commonly institutionalized a model of “bourgeois citizenship” that, despite incidents of formal equality, nevertheless entails profound material inequality among the citizenry.

In the first half of the twentieth century, totalitarian revolutions and two world wars brought cataclysmic disruptions of the emergent culture of modern liberal democratic citizenship. As the political theorist Hannah Arendt (1906–1975) and others began to remark at mid-century, modern citizenship has importantly come to mean the right to have rights; but in various contexts—for example, under the government of fascist or communist dictatorships, and, quite differently, among certain stateless and disaffected populations living without the protections of effective government—the personal guarantees of liberal democratic citizenship have at times been marginalized or rendered nil.

Modern Welfare State and Liberal Democracy

In the aftermath of World War II, especially in conjunction with a European reinvigoration of the modern welfare state vision, there was a return to politically engaged theorizing about the progressive capability of the concept of citizenship. Formative work in this vein includes the classic article

“Citizenship and Social Class” published in 1950 by T. H. Marshall (1893–1981). Marshall posited an historical schema of the development of the rights of citizenship in Europe in which three categories of rights—civil, political, and social—were successively ensured to citizens in an evolutionary process of legal and political reform. And in Marshall’s influential view, the history of this evolutionary progress of reform attests to the inherent potential of the concept of citizenship for generalizing, indeed, universalizing conditions of substantive equality.

The concept of citizenship remains a central concern among theorists of liberal democracy. Neo-Kantians, such as John Rawls (1921–2002) in America, and “critical” theorists such as Jürgen Habermas (b. 1929), have led vigorous contemporary debates about citizenship. And liberal “communitarian” theorists such as Michael Walzer (b. 1935) have focused on the idea of citizenship in trying to appreciate the integrity of discrete political communities today in an international arena in which both armed conflict and rational globalization seem endemic.

Complexities and Expansions

Indeed, nothing is more characteristic of the contemporary significance of citizenship than the evident complexity and expansibility of the concept. For example, in well-established “federal systems,” such as those of the United States and Germany, national and state governments, respectively, accord distinctive status and extend independent benefits that create “dual citizenship” in those countries. There are also countries, such as Canada and Israel, which liberally allow dual *national* citizenship with other countries. And the growing integration of the European Union has heightened interest in what “multi-national” and “international” citizenship should and could mean today, legally and culturally. Moreover, there is even a vibrant new school of thought that seeks to promote both an ideal and a program of “world citizenship.”

Yet the variety of the complexities of modern citizenship includes even more than systemization

through regimes of federalism, internationalism, or cosmopolitanism. In an increasingly pluralistic world, where the populations of so many countries include ethnic and other “minorities,” citizenship can or should be necessarily “multicultural.” Conceptions of citizenship can be intercultural, as well: in China, for example, modern thinking about citizenship blends Western and Japanese influences with Buddhist and other indigenous traditions. And in but one paradoxical example of illiberal “modernization,” some newly independent southern African countries have drawn on traditional European notions of patrilineal citizenship in order to enact laws that burden women with civic disabilities that depart from precolonial regimes of greater gender equality.

In the modern West and throughout the world, the meaning of citizenship continues to change with the vagaries and initiatives of legal, political, economic, and social change. It is clear, however, that citizenship generally remains both a desired status and a cherished ideal. Indeed, the prospect for the twenty-first century is that, in a world culture of growing claims for political and social inclusion, citizenship will take on ever greater significance as a strategic concept in the public life of communities, from the smallest to the largest.

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See also Government; Greece, Ancient; State, The

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Civil Disobedience

Acts of civil disobedience have their roots in religion and the desire to honor a “higher law.” Today the term *civil disobedience* refers to any public, nonviolent act against authority. Such acts are not committed for personal gain, and maintain a goal of righting an injustice or abuse of governmental policies and laws.

Civil disobedience refers to a deliberate offense against authority committed openly to protest an unjust, arbitrary, cruel, pointless, or immoral law or policy of the government. It rests on the assumption that there is a “higher duty” or “higher cause” than civil authority. Civil disobedience, however, does not refer to just any kind of deliberate violation of law or government policy. Street crimes such as robbery and burglary are committed from motives such as personal gain and malice. The civil disobedient, on the other hand, is not interested in private or personal gain; rather, the purpose of civil disobedience is to protest an injustice or a wrong.

Defining Elements

The philosopher John Rawls formally defines civil disobedience as “a public, nonviolent, conscientious yet political act contrary to law usually done with the aim of bringing about a change in the law or policies of the government” (1971, 368). The important defining elements of civil disobedience in this definition are *public*, *nonviolent*, *deliberate unlawfulness*, and *conscientious*.

A Public Act

Civil disobedience refers to action that is of a *public* political nature. Acts of disobedience to family and school do not qualify as acts of civil disobedience. Rather, in engaging in openly announced defiance of particular laws or customs, activists are interested in demonstrating that they are withholding allegiance from the state until its alleged abuses are corrected. In addition, civil disobedience is often engaged in with prior notice as well as openly, since the protestors want as much publicity and attention as possible so as to draw attention to the injustice or wrong that is the subject of the protestors’ acts.

A Nonviolent Act

Civil disobedience contrasts with acts of “warfare against the state” such as assassination, sabotage, terrorism, riot, insurrection, and revolution. Civil disobedients engage in a kind of resistance within the accepted political structure, a violation of the law without loss of respect for law and the other basic political institutions. Civil disobedients want their acts to be *nonviolent* so that they can convince the majority of their fellow citizens that the acts are indeed conscientious and sincere and that the acts are intended to address what they perceive as an injustice or wrong.

Deliberate Unlawfulness

The civil disobedient can use one of two types of *deliberate unlawfulness* to protest an injustice or

Disobedience is the true foundation of liberty. The obedient must be slaves. • Henry David Thoreau (1817–1862)



Congress of Racial Equality conducts a march in memory of African American children killed in Birmingham bombings, All Souls Church, 16th Street, Washington, D.C. Library of Congress.

wrong. Direct civil disobedience is a type of deliberate unlawfulness that violates the very law that is the target of the protest. White people sitting in the “black section” of segregated buses in the 1950s is a good example of direct civil disobedience. More characteristically, the civil disobedient uses indirect acts of civil disobedience; that is, the act of civil disobedience violates some other law whose reasonableness is not in question. For example, one does not protest capital punishment for murder by committing murder. Rather, one may protest such perceived wrongs by the disruption of traffic into a correctional facility where an execution is scheduled.

A Conscientious Act

This element excludes motives of private or personal gain or malicious emotion as the primary reason for

the action. For example, Mohandas Gandhi subverted colonial rule in South Africa and India with acts of passive disobedience. By so doing, civil disobedients suffer inconvenience, expense, threats, real danger, and eventually punishment. Their willingness to suffer these consequences helps to demonstrate that the purpose of the acts is to protest an injustice or a wrong.

Political Authority and Civil Disobedience

Judeo-Christian traditions and political philosophy teach that there is a principle of obligation higher than that of human authorities of the political communities, and that in a conflict between the higher and the lower, the higher takes precedence. Three classic statements on civil disobedience by Henry



Martin Luther King Jr. advocated civil disobedience as a way to prod government into a dialogue that would lead to a solution.

David Thoreau (1817–1862), Mohandas Gandhi (1869–1948), and Martin Luther King Jr. (1929–1968) can illustrate this relationship between political authority and civil disobedience.

Thoreau's essay "Civil Disobedience" is perhaps the best-known American statement on the right of the solitary individual acting alone against a government that had allegedly abused its authority. Its immediate historical context was America's war with Mexico. In protest of that war, Thoreau refused to pay his taxes, a gesture that led to his spending a night in jail. In "Civil Disobedience," Thoreau argues that it was individuals and not the government that created the conditions for liberty. Moreover, societal reform does not occur through politics. The regeneration of society, Thoreau insisted, must begin with self-regeneration not political participation.

Mohandas Gandhi was a Hindu religious leader and social reformer in India who advocated the use

of noncooperation and passive resistance to achieve social and political reform. He believed that it was not sufficient to rely on persuasion or appeal to authorities to voluntarily change their unjust ways. The condition that justifies civil disobedience is the fundamental violation of human rights. But Gandhi thought that individuals should resort to civil disobedience only after careful consideration and only those who are qualified should practice it. To be qualified, a person must already have acquired the habit of willing obedience to laws; those who have not learned to obey laws for the right reason do not have the right to disobey the law.

One of the best-known statements on civil disobedience is the "Letter from the Birmingham Jail," written by Martin Luther King Jr. King wrote this letter following his arrest for refusing to halt a large civil disobedience campaign. King called upon citizens to become more involved in politics in order to secure the voting rights that had been denied to black citizens. He believed that civil disobedience presupposes recognizing political authority. King also conceived of civil disobedience as a crisis-heightening tactic that would prod government into a dialogue that would lead to a solution.

Contemporary Issues

The historical tradition of civil disobedience lies in religious conscience. Acts of civil disobedience arose because of the individual's need to remain true to the dictates of "higher law." Although the tradition of civil disobedience motivated by religious conscience has not disappeared, it is no longer the primary source for its manifestation. The modern discussion of civil disobedience often occurs against a background of acknowledged just constitutions, democratic parliaments, and valid laws. The citizen, in engaging in a disobedient act, makes claims that are based on the nature of his membership in a society.

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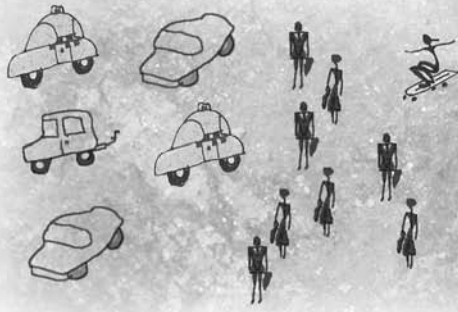
See also Gandhi, Mohandas; King, Martin Luther, Jr.

I submit that an individual who breaks a law that conscience tells him is unjust, and who willingly accepts the penalty of imprisonment in order to arouse the conscience of the community over its injustice, is in reality expressing the highest respect for the law. • **Martin Luther King Jr. (1929–1968)**

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Civilization, Barbarism, and Savagery

Victorian-era anthropologists widely accepted the terms *savagery*, *barbarism*, and *civilization* to describe the perceived progression of human society from the most primitive forms to the most advanced. Such distinctions, however, reinforce xenophobic views used throughout history to justify hostile acts toward dissimilar cultures.

Civilization, barbarism, and savagery are three powerful notions. At least since the eighteenth century, they have played an important role in the human sciences, even as the vocabulary for these notions has shifted over time. During this same span of time, these notions have also played a central role in numerous ideologies of empire, exploitation, and genocide. Ultimately scholars of world history and other social theorists must ask whether intellectual uses of the terms *civilization*, *barbarism*, and *savagery* can ever be free of these sociopolitical uses and consequences. Or is it the case, as the French anthropologist Claude Lévi-Strauss (1908–2009) has suggested, that to affirm the distinction between civilization, on the one hand, and barbarism and savagery, on the other, is to take a fateful step into practicing forms of barbarism and savagery, in the sense of behaving toward Others in the fashion imagined to be characteristic of barbarians and savages?

Before Anthropology

The term *civilization*, as the embracive term for humanity's cumulative achievements through time, did not appear before the second half of the eighteenth century, when it emerged in both French and Scottish

intellectual traditions in the context of rising confidence in the progressive character of human history. Yet, for centuries before that, words derived from the Latin *civilitas* were used, often in association with *barbarism* and/or *savagery* (and their grammatical variants), to differentiate a speaker's own properly organized society from the inferior life-ways of Others. As this formulation indicates, in these primary, or uncontested, uses of these terms, one finds a consistent conflation of the distinction between Self and Other with the distinction between superior and inferior peoples.

Though the terms *barbarism* and *savagery* circulated as contrasts for *being civilized*, the two terms of inferiority had roots in distinct axes of comparison. *Barbarian* entered Greek as a term for peoples who, it was held, lacked intelligible speech. *Savagery*, on the other hand, emerged from the Latin *sylva* and referred specifically to those who lived in the woods, with human life in this habitat being taken as the antithesis of the "civil" society of cities. Yet etymologies, even true ones, are socially significant only when people are aware of the origins of words; etymologies do not automatically come into the meaning of a word when it is used. Indeed, during the centuries before the time when Victorian anthropology codified a distinction between *savagery* (as the earliest stage of human development) and *barbarism* (as the stage after *savagery*), the terms were used largely interchangeably, without their distinct "roots" making much difference in their usage. Yet it does seem as if these "roots" shaped the overall pattern of their referential use prior to the Victorian era and thereby conditioned the way the terms were later formalized

in Victorian anthropology as sequential stages of human progress. During the centuries of “European expansion,” between c. 1500 and the Victorian era, peoples who inhabited forests and jungle were far more likely to be encountered overseas than on the Eurasian margins of Christendom. Consistent with this, the term *savage* came to be linked more tightly than the term *barbarian* to the peoples of the lands of “exploration” and “discovery,” notably Africa and North America. In this way it seems that *savages* came to be the more extreme contrast with *civilized* society. Finally, it should be noted—given that so few white people in the United States are aware of the fact—that at many moments during the history of the Americas, the term *savage* has had an expressive force and significance comparable to that of *nigger*.

We should also record, however, that nearly from the outset of early modern “discovery” and “exploration,” there were potent protests against the use of *barbarians* and *savages* as terms for Others. In 1550, for instance, Father Bartolomé de Las Casas (1474–1566) attacked the jurist Juan Ginés de Sepúlveda’s claim that Indians were “barbarians,” although, significantly, Las Casas’s famous *Defense* was based on a systematic myopia in regard to many of the ways in which Aztec society was unlike that of “civilized” Christians. Moreover, consistent with his largely assimilationist vision, Las Casas conceded that Indians were “barbarians” on the basis of religion, because of their lack of Christianity. Some three decades later, however, the French essayist Michel de Montaigne (1533–1592) offered a more radical critique of the conceptual distinction between *civilized* and *noncivilized*. In his essay, “On Cannibals” (1580), he wrote: “I find that there is nothing barbarous and savage in this nation, by anything that I can gather, excepting, that every one gives the title of barbarism to everything that is not in use in his own country.” Montaigne’s essay shows us that the struggle against Euro-centered ethnocentrism is not an invention of our time but is instead longstanding—preceding even the formation of what we today know as “Europe.”

Victorian Anthropology

It is during the final decades of the nineteenth century, in the classic works of Victorian social evolutionary anthropology (e.g., Morgan, 1877), that we find the most thorough attempts to render *civilization*, *barbarism*, and *savagery* as stabilized terms of a formal and objective scientific discourse. This instance of scientizing both presaged and overlapped the production of “scientific racism.” In Victorian anthropology, *savagery* and *barbarism* were differentiated as sequential stages of social evolution. This schema reflected a much broader and quite sharp increase in the use of time as an idiom for conceptualizing human social variation, which arose in the wake of the “revolution in human time,” itself located at the end of the 1850s and the beginning of the 1860s. In the new understanding of time, the beginning of human existence was located vastly deeper in the past than in the biblical chronology of some six thousand years. Concomitantly, recorded time suddenly appeared to be no more than a miniscule segment of the entirety of human existence. In this new intellectual context, Victorian anthropology identified living “savages” and “barbarians” with the newly recognized expanse of prehistory—peoples lacking writing with the time before writing—in support of elaborate models of generalized stages of human social evolution that, scholars held, preceded the advent of civilization.

Within anthropology, this pairing of living Others and prehistory, along with the knowledge produced in this way, came under scrutiny from Franz Boas (1858–1942) and his students. Social change, the Boasians argued, did not proceed along a singular or universal path, as Victorian social evolutionary theory required. Moreover, other societies in the contemporary world were not the equivalents of earlier stages of European societies but were instead the present-day outcomes of quite different trajectories through time, reflecting other cultural values. The diversity of human societies in the world could not be mapped on to a singular path of human social

Allen's Law of Civilization: it is better for civilization to be going down the drain than to be coming up it. • Paul Dickson (b. 1939)

evolution, but instead, exhibited a “great arc” of human possibilities (Benedict 1934, 24).

Language provided a crucial test of these issues for the Boasians. Starting from painstaking analyses of myriad non-European languages, the Boasians concluded that the existing languages of the world were equally “evolved,” as judged by their capacities for effective communication and conceptual abstraction. Linguistic differences were real—and took forms far more fantastic than could have been imagined without ethnographic research—but different languages could not, with any validity or objectivity, be sequenced. In sum: the view that Others lack intelligible speech, or are otherwise barbarians, is an ethnocentric illusion—exactly as Montaigne had argued 350 years earlier.

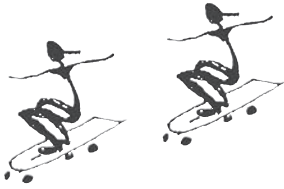
The Boasian critiques turned cultural-social anthropology sharply against social evolutionary models. In addition, through undergraduate teaching and the public circulation of some of their work, the Boasians fostered a nontrivial degree of self-consciousness among a wider public about the ethnocentrism present when others are deemed *savages* or *barbarians*. Yet, it is also important to recognize the incompleteness of the Boasian displacement of social evolutionary thought. One important index of this incompleteness is the vocabulary that they endorsed (by example, at least) as a substitute for *savages* and *barbarians*—notably the term *primitives*. *Primitives* carries a social evolutionary vision of the human career in time: it points unabashedly to a much earlier past, and it associates both simplicity and a lack of development with temporal earliness. In this way it is a sanitization, more than an exorcism, of the Victorian anthropological meanings of *savagery* and *barbarism*. Moreover, what we too often overlook in evaluating this sort of shift in labeling is that if we use a new term to refer to the same set of elements as a previous term or terms—as when people use *primitives* to refer to peoples previously known as *savages* and/or *barbarians*—we leave intact the underlying classificatory distinction, in this case the distinction between *civilized* and *precivilized*. In other words, when we reproduce patterns of reference, we also reproduce categories of language and thought.

Disciplinary History

Although social evolutionary thought was to a significant degree displaced within anthropology by the Boasian critiques, it is also the case that such thought was transposed into other sites, within and outside of the academy. Disciplinary history is a key example. Although the new chronology of the 1860s made historical time but a brief portion of human time and thereby established a novel meaning of *history*, historians of the late nineteenth century steadfastly disregarded the new understanding of human time. In this way, history as a scholarly activity avoided affiliating itself too closely, or at least too quickly, with the rejection of biblical authority represented by both anthropological models of *civilization*, *barbarism*, and *savagery*, on the one hand, and Darwinian theories of speciation, on the other. This situation changed during the first decades of the twentieth century with the work of James Harvey Robinson (1863–1936), the primary exponent of the “new history.” The long chronology was a central and abiding concern in Robinson’s work. For Robinson, it provided a vantage and scale that dwarfed the details of history on a smaller scale and thereby made visible the overall trajectory of the human career: it was the “building of civilization.”

That Robinson’s embrace of the long chronology brought social evolutionary thought into his “new history” is particularly evident in his entry “Civilization” in the 1929 edition of *The Encyclopedia Britannica*. There Robinson bypassed the work of Franz Boas, who had been his colleague throughout Robinson’s twenty-three-year career at Columbia University, and endorsed the “ingenious analogies” drawn by “anthropologists” between “Tasmanians, Australians, Eskimos, etc.” and “the Neanderthal race.”

Consistent with this, Robinson was a central figure in the complex process that resulted in civilization, even more than the nation-state, becoming the most prominent unit of historical analysis in undergraduate teaching in the United States during much of the twentieth century. During the 1920s and early 1930s, it was primarily Robinson’s students, along with a small number of other historians greatly influenced



by him, who took the lead in introducing and institutionalizing what quickly became the standard survey of Western civilization (known as “Western Civ”). In so doing, these curricular innovators drew heavily on both Robinson’s essays and, even more directly, his graduate-level teaching at Columbia. In particular, Western Civ echoed Robinson’s “new history” in both its reliance on the long chronology and its presentation of history as the movement of the civilizational Self away from and ahead of primitive Others.

It is important to note, however, that even as Western Civ embedded social evolutionary thought in its narrative of history, it also promoted a broadly cosmopolitan ethos and worldview. With its focus on “the West” as a civilizational area, Western Civ encouraged its addressees (U.S. undergraduates) to identify with something above and less parochial than “the nation,” in contrast to the more narrowly patriotic form of history taught in secondary education. So too, the Western Civ narrative depicted Western civilization as drawing on sources from all over the map of Europe. It thus offered a welcoming tale to the children of immigrants who, during the 1920s and 1930s, were diversifying the student bodies on U.S. college campuses, supplementing and quickly outnumbering the children of the established Protestant elite. Finally, in the Western Civ narrative, civilization was something possessed not by virtue of birth, but rather by means of the transmission of knowledge—as in formal education and schooling. Western Civ thus offered an account of history that, allegorically, rejected the notion of ascribed status and affirmed the ideal of merit-based system of achievement. In sum, although Western Civ was always intensely Eurocentric (by virtue of identifying the West as the primary site and agent of the building of civilization), in its heyday it was also “cosmopolitan” and “progressive” in these nontrivial ways.

That social evolutionary thought had been elaborated as an explicit theory in Victorian anthropology was, ironically, an important condition of possibility for its critical examination by the Boasians. The movement of social evolutionary thought into history

produced much less critical examination, both in Robinson’s day and since. In part this is because social evolutionary thought was brought into history as an embedded schema, rather than as an explicit theory. In addition, even as history departments made Western Civ their primary introductory-level course, most historians worked, in their scholarship and other courses, with dramatically shorter segments of time in their research and upper-level courses. In so doing they set aside, but did not explicitly examine or critique, the social evolutionary vision of Western Civ. It would be an error, however, to overlook the extent to which the geographic coverage of history departments, and many other facets of the organization of historical knowledge, are shaped by the distinction between *civilization* and *precivilization*.

An important exception to the prevailing disciplinary practice of side-stepping this complex issue can be found in the field of African history, as evidenced by Steven Feierman’s essay, “African Histories and the Dissolution of World History” (1993). A primary target of Feierman’s discussion is the very notion of *civilization*. The civilization concept, says Feierman, involves “a complex of elements” that historians and other social theorists have claimed are mutually reinforcing: “political and economic hierarchy, towns, commerce and intercommunication, writing, the plough, high densities of population and historical dynamism” (Feierman 1993, 177). But when we broaden our research to include African histories, we find numerous cases in which these “interrelations do not hold” (Feierman 1993, 177). No basis exists, then, for continuing to treat these elements as the components and indices of a distinct stage (or even form) of human sociality. As Feierman concludes: “The elements have no explanatory significance if treated as a check list” (Feierman 1993, 178).

Moreover, if we stubbornly hold on to the civilization “complex” and insist on using it to perceive African histories, we will overlook and misrecognize quite different linkages. For example, Feierman discusses how trade in the Kongo during the seventeenth century—involving, on an annual basis, ivory from

as many as four thousand elephants and as much as 36 metric tons of copper—was supported not by anything recognizable as a “state,” but rather by a dispersed “healing association” or “drum of affliction” (Feierman 1993, 178). The overall point then is that the civilization concept serves us poorly when examining African histories, and this is sufficient to conclude that it lacks universal applicability and validity.

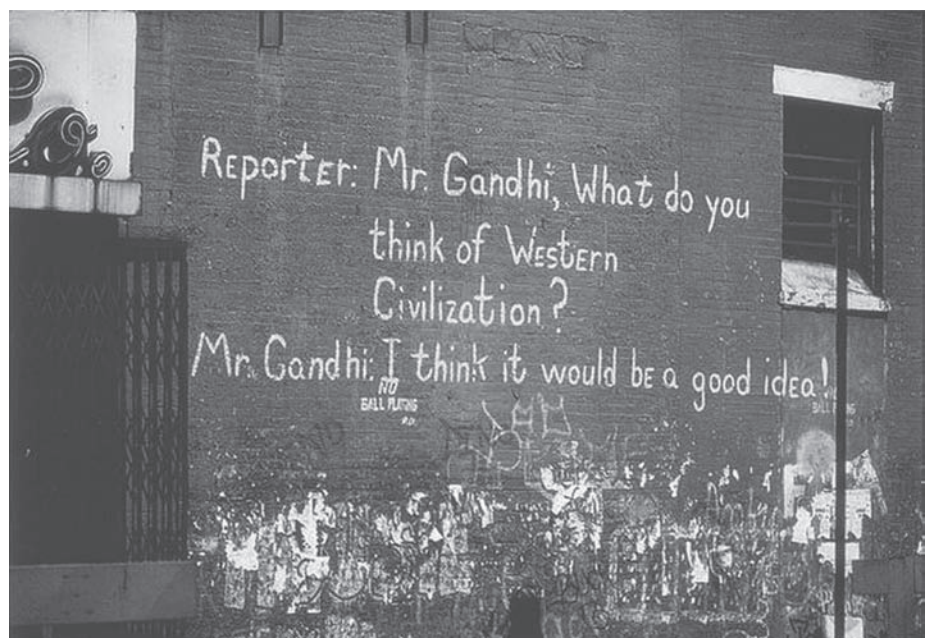
Contemporary Political Uses of Civilization

Research in both cultural-social anthropology and African histories thus contests the coherence of the *civilization/precivilization* binary. In addition, both fields have documented the recurring use of this distinction in support of projects of astonishing brutality, often in the name of “modernization” and “progress.” Nonetheless, the distinction remains a potent one, and has been used with particular verve by leading figures in the neoconservative movement, which, particularly in the United States, gained so much power after the 1960s.

The administration of President George W. Bush (in office 2001–2009), for example, repeatedly invoked images of a struggle between “civilization” and “barbarism” to conclude that the United States must wage war, rather than peace, in response to the violence of September 11, 2001, and other terrorist acts. Critics, however, argued that such rhetorical demonizing served to preempt a recognition of the modernness of so-called Islamic fundamentalism and of the primary factors that fuel global terrorism today, notably: (1) a widespread sense of desperation in many societies in response to the global maldistribution of political agency and the consumption of resources, (2) the global trade in weapons, including weapons of mass destruction, resulting largely from the Cold War, and (3) resentment in Islamic societies toward the U.S. government’s uncritical support for Israeli state policies of oppression toward Palestinians. The Bush administration’s goal of vanquishing the “barbarians” in our midst did not, critics argued, engage these root causes of terrorism.

A second context in which the neoconservative movement invoked *civilization* in recent years is

This popular, mass-produced postcard—its urban graffiti immortalizing an alleged exchange between Mohandas Gandhi and a reporter—attests to a critical sensibility in our world about use of the term “civilization,” and specifically about the term’s identification with the West.



in response to the movement to expand marriage to include same-sex couples. In February 2004, for example, George W. Bush endorsed an amendment to the U.S. Constitution to limit marriage to heterosexual couples, arguing that marriage so defined is “the most fundamental institution of civilization,” as demonstrated by “millennia of human experience.” (The most recent congressional votes on the amendment, as of 2010, took place 2006; the House of Representatives, which voted on the proposed amendment, did not garner enough votes to pass it; the Senate, which voted only on closure motions regarding the amendment, voted against considering it for ratification.) In response, the American Anthropological Association, drawing on its Boasian heritage, passed a “Statement on Marriage and the Family,” which reported that anthropological research offers no evidentiary support for Bush’s claims in this regard.

The distinction between civilization and precivilization is sufficiently established in contemporary knowledge of humanity that many, and perhaps most, world historians would question the idea of doing without it. Greater care and reform may be warranted, but not, on such a view, relinquishing the very idea of civilization. Yet for others, the intellectual and social-political record of civilizational thinking is sufficiently grim that, at the very least, the time has come for a moratorium on the use of notions of *civilization*, *barbarism*, and *savagery*—however euphemistically expressed.

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See also Anthropology; Ecology, Cultural; Ethnocentrism; Race and Racism

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Climate Change

Fluctuations in global temperatures throughout history have been accompanied by changes in sea levels and altered weather patterns, both of which have been linked to mass migrations, famines leading to disease, the collapse of some civilizations, and the growth of others. These cycles of warm and cold are affected by energy exchanges between oceans and the atmosphere, fossil-fuel emissions, and solar energy.

Many world historians explain changing Earth history in terms of its changing climate. Scientists however focus more directly on the causes for long-term climate change. They are: the exchange of energy by the oceans and atmosphere, fossil-fuel emissions, and solar energy. With global temperatures on the rise since 1860, climatologists predict that they may continue to increase by as much as 2°C during this century. Evidence of global warming appears in a melting Arctic ice cap—a reduction in volume of 3 to 4 percent each decade since the 1970s. As a result, sea levels have been rising since 1900 with the rate of change accelerating in the last half century. Contracting ice sheets and rising sea levels submerge coastal areas that affect the natural migration of some plants, animals, and microbes. According to the United Nations' Intergovernmental Panel on Climate Change (IPCC) report titled *Climate Change 2007*, "Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global mean sea level." During warming phases in the northern latitudes, migrating forests replace northern tundra and formerly marginal lands may become suitable

for cultivation and food production. The costs to millions and possibly billions of people who live near the rising seas, slightly above, at, or below sea level would be devastating as rising temperatures and volatile weather in the tropics and middle latitudes would displace them from their homelands.

Climate fluctuations from warm, temperate, and interglacial to cold, arctic, and glacial can occur rapidly within a century and without much warning. The final collapse of the last Ice Age occurred about 9500 BCE and marked the beginning of the current global warming period. This rapid atmospheric warming, possibly the most significant climate event in the last forty thousand years, caused abrupt rises in global sea levels. Warming and glacial melt at about 7500 BCE flooded the Black Sea basin. The biblical "flood" may have been a reference to this natural catastrophe. Although many gaps exist in our knowledge about climate warming and cooling, efforts to unravel the complexities of the global climate have focused on specific events that trigger changes in the weather.

The Atlantic Circulation Energy Exchange

The world's oceans serve as a heat transportation system absorbing much of the heat from the solar energy penetrating the atmosphere. As rising temperatures increase freshwater snowmelt, the salinity of the oceans decreases, affecting their circulation. Decreasing the volume of heavy salt water disrupts the great Atlantic Deep Water Circulation, which brings warm tropical water across the equator toward the North Pole. These warm waters become the "gulf



Polluted runoff is the greatest threat to U.S. coastal waters; accordingly, fossil fuel emissions are one of the leading causes of long-term climate change.

National Oceanic and Atmospheric Administration.

stream” that warms the New England coast and brings moisture and warmth to the British Isles. Without it, these coastal regions would become several degrees colder, turning fertile soil into permafrost.

Since the oceans transport heat, abrupt small increases in temperature or increases in fresh glacial melt lower the density of the water, namely its capacity to sink, slowing down and in severe instances stopping the circulation. According to some climatic models, turning off or slowing down this current, often called “a huge heat pump,” has cooled down the northern temperate regions and been responsible for many of the abrupt climate oscillations during the last 100,000 years.

El Niño

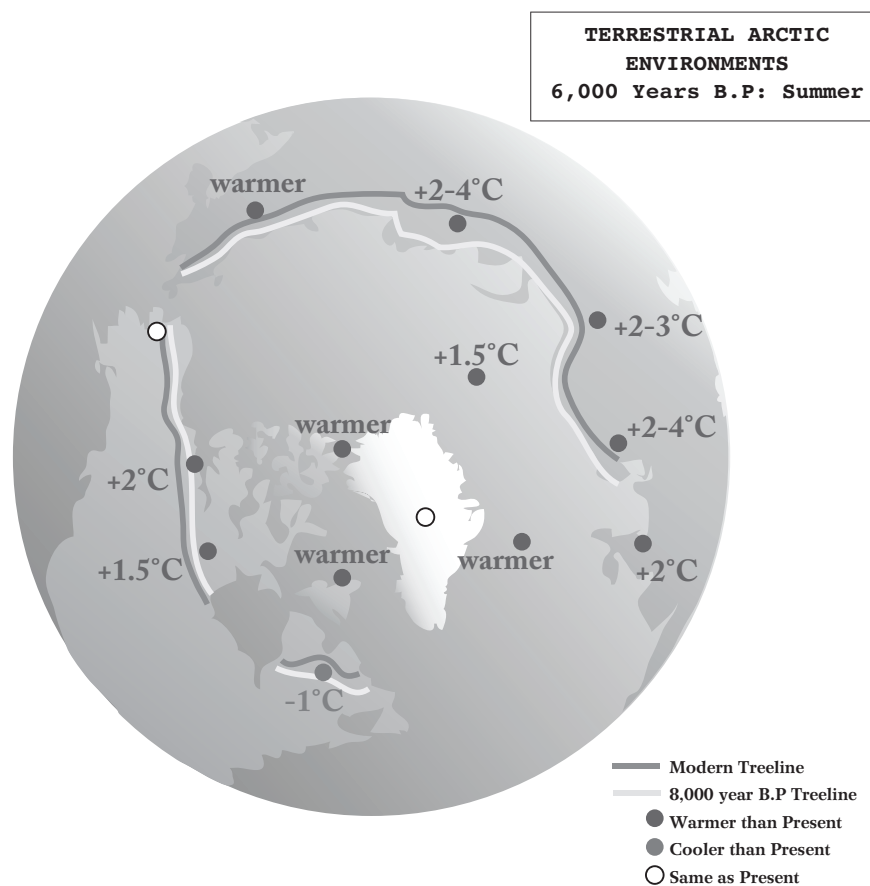
For the past forty years the salt content of the North Atlantic has declined continuously. But recent failures to simulate the relationship of these rapid climate changes to the Atlantic circulation have led scientists to search for another climatic event

that may contribute to either hemispheric or global climate change. They have concluded that the tropical Pacific Ocean and its El Niño episodes in combination with the Atlantic circulation may provide an answer.

As the world’s largest ocean, the Pacific covers about 181 million square kilometers, with the widest band along the tropics, where solar energy is converted mostly into heat. Ocean currents and wind velocity serve to distribute this heat. During some years, atmospheric and sea temperatures are abnormally warm for reasons that are not completely understood. These reasons may include sunspot activity, the effects of the Atlantic Deep Water Circulation, and the fact that the world’s oceans now consume a larger carbon load caused by fossil-fuel emissions.

Some climatologists believe that these anomalies may trigger El Niño oceanic conditions, meaning that the flow of cold water from South America to the warm Pacific pool decreases or ceases entirely. In the absence of the easterly wind shears that drive the surface cold water to Asia, westerly winds push the warm Pacific pool toward the Americas. Hot and humid air travels with this warm pool, soaking previously arid equatorial islands and the coastal regions of the Americas from Peru to the west coast of the United States with torrential rains. With accelerating westerly winds, precipitation extends into the Western Hemisphere from the Americas and Eurasia to the Russian plains. Drought strikes India, China, Indonesia, and Africa.

The impact of El Niño on the distribution of heat and precipitation around the world is well known. What remains unknown is the relationship between Atlantic and Pacific oceanic events on the global climate. Ocean temperatures and salinity influence circulation. In fact, some North Atlantic deep water may enter the equatorial Pacific and cool the water temperature and the atmosphere as it does in the Atlantic Ocean and in this way defuse the catastrophic climatic effects of El Niño. If the cold water circulation of the Atlantic slows or stops, however, then there exists no known constraint on El Niño’s harmful effects.



circulation, raised atmospheric temperatures, and created volatile weather.

By 1100 CE the warm period was giving way to the little Ice Age and mega-El Niños were in decline. With less energy transfer to activate the tropical oceans, one last major El Niño reached landfall in northern Peru in 700 CE. These pre-Spanish Conquest El Niños, similar to other major climatic events in world history, caused major political and cultural dislocations in the lives of native people. Floods in coastal areas and drought east of the Andes Mountains forced populations to relocate, rebuild, and adapt to the volatile weather systems that visited South America throughout this warming period.

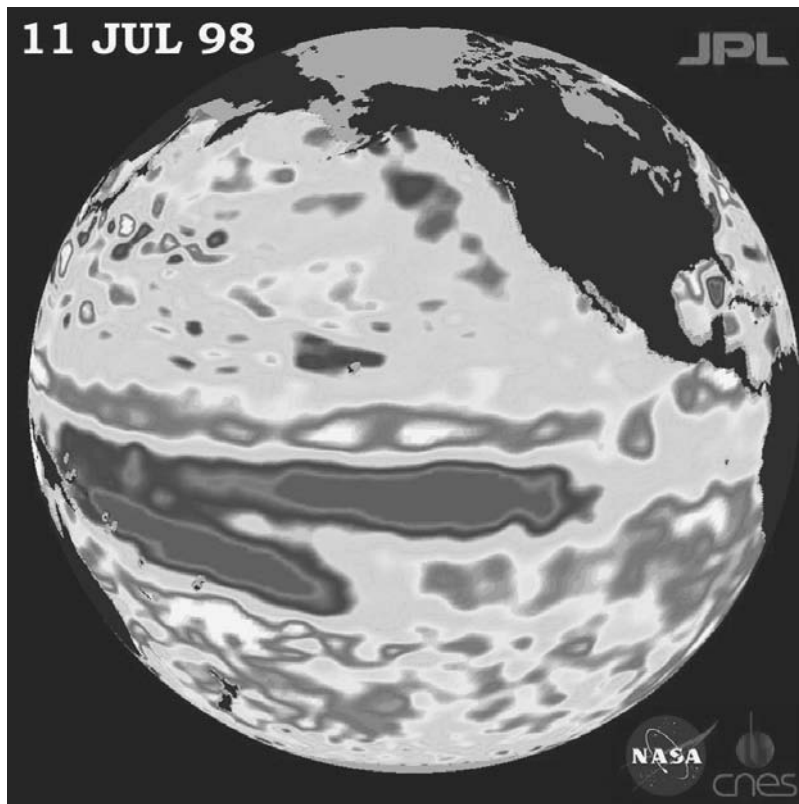
El Niño's Impact on World History

Prior to the Spanish conquest of the Incas in 1500 CE, advanced civilizations of native farmers and fishermen spread out along the northern Peruvian coast. These Native Americans, called the Moche, built pyramids, crafted pottery, and made gold ornaments to celebrate their spiritual and material achievements. The remains of their irrigated canals and mud-brick buildings attest to their advanced civilization. The sedimentary evidence found in riverbeds, in coastal lagoons, and by examining the fossil remains in these sediments reveals that repeated episodes of El Niño disrupted Moche civilization. Floods and droughts forced the Moche to abandon established sites for newer ones. With more energy from the overheated oceans, mega-El Niños activated water and wind

El Niño in Recent History

Research into the history of the El Niño weather phenomenon stems from the discovery that the El Niños of the 1980s had worldwide effects. Because of drought conditions during that decade, peasants were forced to leave northeastern Brazil, political instability occurred in some sub-Saharan countries, and food shortages became commonplace in India, China, and Japan. El Niño weather systems prove unmistakably the connectedness of the global climate system and its specific effects on biological entities, historical developments, and local and regional weather patterns.

The El Niño events of 1982–1983 reinforce theories and knowledge about the energy exchanges of the world's cold and warm waters, especially in the



El Niño Watch: A satellite image shows the Pacific Ocean stabilizing, 11 July 1998. NASA.

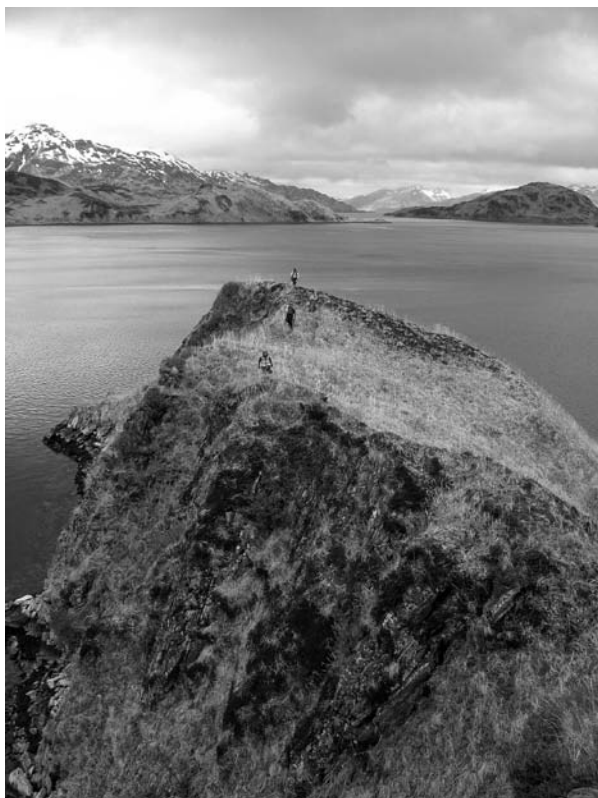
Indian, Pacific, and Atlantic, by absorbing solar energy and releasing heat into the atmosphere. The destructive forces unleashed by El Niño episodes suggest that the world's oceans reach a point of energy overload and need to discharge their accumulated heat. In this way an unpredictable global climate system is brought back into delicate balance.

As we have seen, scientists have identified three basic causes of global climate change—the exchange of energy by the oceans and the atmosphere, fossil-fuel emissions, and solar energy. Much remains to be discovered about its causes and effects, however. Solar energy output has periodic and sometimes irregular patterns of intensity. Periods of high intensity occur during eleven-year cycles and those of low intensity take place about every three and one-half years. Although the similarities in the pattern are not conclusive, some scientists argue that El Niño returns at intervals of high intensity. Finally, no substantial body of

evidence points to a relationship between the warming of the Pacific waters in recent decades, a trigger for El Niño, and atmospheric pollution. Since much is unknown about El Niño, it remains an area of great interest for scientists and historians because of its potential effects on the global climate and global population.

The Role of Fossil-Fuel Emissions

Rising global temperatures translate into increased atmospheric water vapor, a greenhouse gas, as more of the world's warming ocean water evaporates, causing more precipitation. Releasing the energy sequestered for millions of years in fossilized plants and animals by burning coal, oil, and gas elevates concentrations of another greenhouse gas, carbon dioxide (CO₂), in the atmosphere. Most of these emissions come from three key sectors: electricity generation,



Due to climate change, sea levels have been rising since 1900 with the rate of change accelerating in the last half century. Researchers from NOAA's National Geodetic Survey conduct a shoreline survey. National Oceanic and Atmospheric Administration.

transportation, and the heating and cooling of residential, commercial, and public buildings. Electric power generation globally contributes 41 percent of all CO₂ emissions. During periods of industrialization, the burning of fossil fuels and the process of deforestation have increased the carbon dioxide load in the atmosphere by about 25 percent. Within the last hundred years, 40–50 percent of the world's pioneer forests and uninhabited lands that change CO₂ into oxygen by the process known as photosynthesis have been transformed into agricultural production and commercial and residential construction. Also caused by the burning of fossil fuels, other fast-growing greenhouse gases such as methane (CH₄) and chlorofluorocarbons (CFCs) with greater heat-absorbing qualities than CO₂ have affected atmospheric

temperatures. From 1850 to 2000, the human contribution to the increased concentration of CO₂ by burning fossil fuels, deforestation, and agriculture was about 1.7 trillion tons. About 40 percent of this CO₂ remains in the atmosphere and it is increasing at a rate of about 0.5 percent per year. The life span of CO₂ molecules in the atmosphere is one hundred years, meaning that the emissions from the first Model T automobile that became available to consumers in 1927 and every vehicle built since remains a part of the human-induced global carbon load.

Global warming occurs more rapidly in frigid regions rather than in the temperate and tropical areas because arctic air lacks water vapor. This characteristic makes CO₂ a more important greenhouse gas where the air is cold and dry. In warmer, humid air, water vapor is a more important as a transporter of heat than CO₂. Because warming is unevenly distributed across the planet, what exactly CO₂ contributes to global warming remains debatable.

During the current warming phase one can expect the physical properties of CO₂ to contribute to more rainfall, higher atmospheric and oceanic temperatures, more clouds, and higher wind velocity. The biological effects of CO₂ are noteworthy, contributing to longer growing seasons in the temperate and tropical climates. Arid and semiarid lands mainly unavailable for agriculture may receive sufficient moisture to increase food stocks for a global population whose growth rate will stabilize at between 9 and 12 billion people by 2050. The specific impacts of human population growth on the global climate system remain unknown, however.

The Role of Solar Energy

Two additional forces drive the global climate system. One cited often in the scientific literature but recently challenged is the Milankovitch explanation. The Serbian astronomer M. M. Milankovitch argued that the eccentric orbit of the Earth established its major global climatic cycle of 100,000 years. During that time the planet goes through a full interglacial/glacial cycle. Within this longer pattern, another

41,000-year cycle controls the amount of solar energy reaching the Earth's higher latitudes. It is caused by the tilt of the Earth on its axis.

A much shorter cycle caused by the “wobble” of the Earth on its axis occurs either at 23,000- or 19,000-year intervals and affects the amount of radiation striking the low latitudes and the equator. Milankovitch argued that during the last 800,000 years, Earth experienced eight complete glacial/interglacial cycles. The Ice Ages lasted for 90,000 years followed by 10,000-year periods of warming. Accordingly, the current interglacial phase should be coming to an end.

Since the Milankovitch explanation accounts for only 0.1 percent change in the total solar energy reaching the Earth, however, some climatologists have looked elsewhere for a more coherent driving force behind climate change. They argue that fluctuations in solar energy follow a cyclical pattern of sun-spot activity. Using this pattern, they have identified a pattern of eight cycles during the last 720,000 years of the Earth's history. They are ninety thousand years in length, from full glacial with -0.3 percent of solar energy output to full warming with $+0.3$ percent. Given the dynamic changes in the Earth's history and the gaps in our knowledge about its physical and biological properties however, predictions about future global climate changes remain illusive, despite the existence of this cyclical pattern.

Impact of Climate Changes on World History

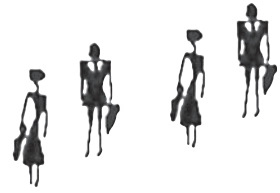
A warming phase during the last major ice age from 33,000 to 26,000 BCE may have eased the migration of anatomically modern humans from Africa and southwestern Asia into Europe, replacing the resident Neanderthals. Before rising global sea levels eliminated the passage from Siberia to North America, this warming phase allowed human hunters to cross the frozen Bering Straits. In successive waves, possibly beginning as early as 32,000 BCE but no later than 11,000 BCE, they followed the hunt and populated the Americas.

As the last glacial maximum was ending about 13,000 BCE, a time when rising temperatures on Greenland approximated current ones, the retreat of the glaciers was interrupted by two little ice ages, the Older Dryas at 12,100 BCE and the Younger Dryas at 10,800 BCE. (A dryas is an Arctic flower that grew in Europe during the last Ice Age.) Evidence that the warm water circulation failed to reach the northern hemisphere around 12,700 BCE and inaugurated the Younger Dryas suggests that glacial melt entering the North Atlantic at the end of the last glacial maximum either slowed or stopped the Deep Water Circulation. It transformed the northern temperate regions into a little ice age for the next 1,300 years. The landscape of the British Isles became permafrost, with summer temperatures dropping below 32°C and winter ones below -10°C . Icebergs floated to the Iberian coast and long periods of drought affected Asia, Africa, and the midcontinent of North America. The slowdown of the Atlantic circulation may have been responsible for the changing hemispheric climate.

Climatic Impacts on Indo-European Civilizations

Little ice ages have punctuated world history during these warming phases. As a result of cooling, the once fertile pastoral civilization of the Sahara collapsed, forcing the migration of its inhabitants to the Nile River valley about 5500 BCE. This settlement along the Nile coincided with the millennia-long rise of the ancient Egyptian civilization. Between 5000 and 4500 BCE, the Egyptians established their first empire and within centuries built the great pyramids at Giza. The Harappa civilization in the Indus Valley flourished as well, constructing public buildings and private dwellings of mud and fired bricks and using geometric plans to organize its cities.

From 4500 to 3800 BCE, a “global chill” interrupted human progress with seemingly endless periods of drought. The global climate may have been colder than at any time since the Younger Dryas. As happened during earlier periods of cold and arid



conditions, the human population migrated south, escaping from the most extreme climatic conditions. Farming populations, the descendants of Indo-Europeans who in progressive migrations had brought farming technology into western and northern Europe from Southwest Asia many thousands of years before, were forced by the cold climate to retreat southward. They retreated to warmer regions along the Mediterranean and southeastward to Ukraine, to southwest Asia, India, and into northwest China.

Another protracted cold period brought drought to the irrigation-dependent “fertile crescent” civilizations of the Tigris, Euphrates, and Indus valleys between 3250 and 2750 BCE. In fact, some archaeologists suggest that the lush, naturally irrigated landscape in modern southern Iraq may have been the location of the biblical “Garden of Eden.” Recent archaeological research has verified that the collapse of the great agricultural Akkadian Empire in northern Mesopotamia (3200 to 2900 BCE) coincided with a major volcanic eruption and a subsequent climate shift from moist and cool to dry and hot that lasted for more than a century. These concurrent events forced this ancient population to leave the north and migrate into southern Mesopotamia (modern Iraq).

The Rise and Fall of the Mayan Civilization

Another global cold spell that lasted from 2060 BCE to 1400 CE had beneficial effects turning tropical and subtropical regions into cooler and dryer climates. In Central America, the Mayan civilization expanded its agricultural productivity northward into the Yucatan, now part of Mexico, and built pyramids and cities in areas formerly thick with tropical vegetation and malaria-bearing mosquitoes. They remained there for about a thousand years.

Years without rainfall caused a series of collapses in Mayan agricultural productivity. Sedimentary records suggest that droughts began 1200 CE and revisited the region for the next five hundred years. They abandoned some cities in 1240 CE and the remaining ones in 1190 CE, when another severe dry

period hit the area. Other causes may have contributed to the demise of the Mayans but the relationship of climate change to the collapse is a compelling one. After this particular global chill ended, the hydrological cycle gained strength as the climate warmed. The tropical forest returned along with the mosquitoes and forced the remaining Mayans to abandon their homes and to migrate southward. The fact that Mayan ruins are discovered now in the dense tropical rain forests of Central America is evidence of more recent global warming.

With the stronger hydrological cycle of the last 150 years, pioneers have cleared forests for agriculture, growing seasons have expanded, and more food has become available for a growing population. The relationships between climate change, the migration of human and animal populations, and the rise and decline of civilizations will require more detailed study before global climate change becomes more accepted as a causal factor in world history.

The Little Ice Age

Evidence from sediments and ice cores reveal that a little ice age (shorter than the typical 80,000 to 90,000 years) of long duration from approximately 1300 to 1850 CE swept across the northern hemisphere. Viking outposts in Greenland populated during the Medieval Warm Period (1000–1300 CE) succumbed to the freeze between 1200 and 1300. Food production plummeted in preindustrial Europe. Even in the best of times, where diets consisted mostly of bread and potatoes, daily food consumption seldom exceeded 2,000 calories. Widespread malnutrition was followed by famine and the outbreak of infectious diseases.

The bubonic plague followed the great European famine in 1400. Between 1100 and 1800, France experienced frequent famines, twenty-six in the twelfth century and sixteen in the nineteenth century. Increasing cold temperatures shortened the growing season by at least one month in northern European countries and the elevation for growing crops retreated about 18 meters. Not all populations suffered equally during this ice age, however. For those living

along major rivers and coastal areas, fishing provided the animal protein lacking in the diets of the majority. In New England, 1815 was called “the year without a summer.” After 1850 and without warning this little ice age came to an end. Increased solar energy, the impact of industrialization on the atmospheric concentrations of greenhouse gases and changes in the Atlantic Deep Water Circulation have been identified as causes, either alone or in combination.

Climate Change: The Future

Examining climate events in history and reviewing the scientific findings of the present suggest that no single cause can adequately explain significant climate oscillations. The convergence of many changes in the world’s oceans, atmosphere, and land causes the disruptions and outbursts that we identify as significant climate events. These events possess such complex and unpredictable characteristics that to date the most advanced computers and global climate models (GCMs) have been unable to predict future climate events.

Despite our fragmentary knowledge of past climate events, knowing what to do in the future presents us with a great challenge. Population growth into coastal areas and onto marginal lands makes catastrophes more likely during periods of abrupt change. Increases in material consumption and energy use will continue to place stress on global ecosystems. The goal of sustainable growth in the developed world and the expectations for the same in the developing world remain elusive. In the words of Vaclav Smil (1990, 23), “If concerns about planetary warming will help to bring some sanity into the craven pursuit of economic growth and personal affluence throughout the rich world, and if they will aid in promoting control of population growth and responsible development policies in the poor world, then a warming trend might actually be an effective catalyst of desirable changes.”

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See also Energy; Ice Ages; Oceans and Seas

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Clothing and Costume

Although clothing serves a basic human need for protection from cold and hostile elements of the environment, it has also been used as a visual cue for determining gender, profession, social and economic status, and birthplace. Clothing has been radically influenced by social contexts and by the technologies available for making it.

As early humans moved out of Africa and into colder, more hostile climates they were confronted with the problem of keeping warm. Without a thick coat of hair to protect them from the elements they had to create an artificial means of retaining body heat in order to survive. From this basic need developed the rich and varied dress of the world's peoples. As societies began to develop, many other factors determined the specific dress of a region or a culture, including the technological levels, relative affluence, class and hierarchy, migration, war, religion, and industrialization. Historically dress has provided people with a visual cue that allows for the instant determination of ethnicity, class, gender, profession, economic status, and even place of origin. It forms an important element in social, technological, and economic history and can be an excellent basis for the study of culture. People have used dress throughout history to both accentuate and obscure the body. Most cultures have particular dress for ceremonial occasions and life celebrations, thus dress holds a central role in ritual, social, and political life.

Early clothing was dictated not only by climate and environment, but also by available clothing materials. The earliest forms of dress were probably animal skins, at first used in their original shapes and later

modified to fit the human form. The invention of textiles increased the scope and variability of early dress. Despite the wide diversity of dress globally, early humans developed a limited number of basic garment shapes. The first woven garments were probably simple rectangles or squares of fabric draped or wrapped around the body. These multipurpose garments could be used as a skirt, cloak, or even as a shelter or bundle for carrying possessions. Its descendants include the Roman toga, the Indian *dhoti*, and the Indonesian sarong.

A hole for the head in the middle of the basic rectangle increased the possibilities for covering the body. This garment could be worn loose, like the Peruvian poncho, or belted around the body. The sides could be sewn up to form a closed garment, like the Greek chiton. The addition of sleeves created the T-shaped tunics of the Roman and early European medieval periods and even the humble T-shirt. By slitting the T-shaped garment down the front, coat-like overgarments such as the Arabian *abbaya* were created. In the steppes (vast, usually level and treeless tracts) of Central Asia nomads refined the coat by adding triangles of fabric to the front opening that overlapped the chest area. This garment, the cross-fronted tunic, influenced early Chinese and Asian dress and can be seen today in the Afghan and Central Asian *khalats* and even the Japanese kimono. Any of these basic garments could be worn in combination or in addition to skirts or pants to further cover the body and protect it from the elements.

After the basic necessities were taken care of, dress became more elaborate, formalized, and regulated. It began to differentiate one group, class, culture, or religion from another. Clothing that mirrored social

Traditional Korean clothing is designed to be light and airy; here two women in billowing dresses pose for a photographer in 2004.



divisions and defined subcultures allowed an instantaneous visual determination of the wearer's place and status. Any deviation from the norm could be read as a change of identity or status and determine who was friend or foe. Dress became even a tool of governmental social policy—to promote national solidarity, to define the limits of accepted society, and even to force modernization. The Russian czar Peter the Great's insistence on nobles wearing Western dress, and the Turkish soldier and statesman Kemal Atatürk's dress reform for Turkey, were attempts to achieve modernization through clothing reform.

Gender

Gender is an important component of dress. Most cultures have specific styles that differentiate or reinforce gender divisions and enforce gender and social stability. For Western societies gender dress has meant skirts for women and pants for men. This differentiation is not a global standard, and women often wear pants, whereas in other regions men wear "skirts," usually in the form of sarongs, hip-wraps, or kilts. The symbolism placed on a garment by a

particular society makes a garment "male" or "female." Gender-specific dress can accentuate physical differences between the genders and/or emphasize erotic areas of the body, often by deformation of the body by padding, corseting, or other means. In many cultures women's dress directly reflects the wealth of their husbands or fathers, making dress an economic indicator. Some forms of women's dress, such as foot binding in China, have become symbolic of women's reduced position in paternalistic societies. The Islamic veil, to many Westerners, symbolizes the subjugation of Islamic women. But for many Islamic women the veil is a symbol of religious identity. It is also an example of the strength of custom. Veiling predates the Prophet Muhammad by six hundred years or more and is not a requirement of the Qur'an. As Islam spread, religion and local customary practices became inextricably linked. Deveiling campaigns in the former Soviet Union, republican Turkey, and modern France have met with resistance by religious women who view the veil as an important part of their religious identity.

Dress also has served to identify and define class and to mark social divisions. Divisional dress predates the rise of consumerism and is tied to a desire



A pictograph of Sioux warriors killed in the Battle of Little Bighorn memorializes slain warriors identified by their costume, paint, and body adornment.

for upward mobility. Elaborate garments for the ruling elite highlight personal and national prestige and wealth and set the ruling elite apart from the rest of society. At the same time prescribed dress for those participating in royal courts limits their participation outside the rarefied atmosphere of the court. Expensive fabrics, trimmings, and extravagant cuts elevated the wearer above the working classes. This elevation came at a price. Women's fashionable dress in Renaissance Italy, with its ultrawide sleeves, restricted movement, as did the heavy woolen folds of the Roman toga. Court ritual in China required the emperor to comply with elaborate rules and highly specific dress requirements for rituals. He was both elevated and restricted by the same dress that reinforced his power.

Dress also can be used to enforce the status quo. Sumptuary (relating to personal expenditures) laws that govern the clothing of particular classes developed in early times. They are most numerous where class tension exists. During the early Ottoman Empire sumptuary laws were seldom published, implying that the social boundaries between classes were generally accepted. In early modern Europe, however, the frequent publication of such laws coincided with the struggle for power between the nobility and the rising middle class.

Just as dress can denote status, it can also denote subjugation. An example is the queue (a braid of hair usually worn hanging at the back of the head) and Manchu clothing that were imposed by the conquering Qing dynasty (1644–1911/12) on the ethnic Chinese. Clothing of subjugation can take on symbolic meaning and come to represent the political system that institutes it. Its removal also can take on political overtones. One of the symbols of the 1911 Chinese Revolution was severing the queues, although Manchu clothing was mostly retained because of its practicality.

Occupations

Within social divisions dress often became a marker for occupations. Specialized garments developed to protect workers or their clothing from the dangerous elements of their profession. Dress such as the blacksmith's apron or the baker's hat became integral parts of the craft or professional identity. In some cases, such as academic dress, specific garment details became institutionalized and continued as a marker long after their original purpose was gone. Today the color of one's collar is used to denote hierarchy in the Western workforce. Occupational custom could be so strong that workers had to fight for the right to wear more practical attire. U.S. nurses and female hospital workers faced both custom and gender boundaries in their battle to wear pants instead of skirts and white hose at work.

Dress can be an external expression of one's religious beliefs. For Christians, dressing the body



Rituals and ceremonies of many religions call for special clothes. Two Catholic girls wear traditional white dresses and veils for their First Communion.

is directly tied to the concept of original sin. For Orthodox Jews, Muslims, and people of many other religions, dress symbolizes their membership in a religious community and sets them apart from the surrounding societies. Religious attire may be differentiated by color, cut, fabric, or even, in some cases, the absence of dress itself. Like academic dress, clerical dress often contains stagnated forms of historical garments. Ritual dress for religious elites shows the power, prestige, and the wealth of the religious establishment. Modernization has altered Western religious dress, making it more secular in appearance.

A difference between urban dress and rural dress has probably existed since the development of cities, but industrialization and its accompanying mass migration of labor to the cities have made this difference even more striking. “Fashion” generated in the cities was part of the reason, but the availability of finer cloth and manufactured clothing also separated urban from rural. Workers adopted “city clothes” to

fit in and show their connection with their new environment, and a mix of urban and rural dress illustrates the mixed consciousness of early industrial workers. Strangely, fashion sometimes reverses this pattern, with urban residents adopting the clothing of the countryside in a nostalgic attempt to recapture a simpler past.

Modern manufacturing, communication, and advertising have increased the importance of fashion and the speed at which it changes and spreads, even creating an international fashion of T-shirts, blue jeans, and sport shoes that defies gender, nationality, and class. Although a Western “institutionalized fashion cycle” began in the courts of fourteenth-century Europe, fashion has likely been around nearly as long as clothing. Since prehistoric times, humans have shown an interest beautifying their clothing with beads, feathers, and other sorts of trim. They have also shown an interest in changing clothing styles, although at a much slower pace than today. Roman writers described the importance of fashion during their time, and during the Tang dynasty (618–907 CE) in China, feathered skirts were so popular that certain species of birds were threatened with extinction.

The words *native* and *traditional* are often used in dress history to imply something that is static and unchanging. These two words are often used interchangeably with the word *authentic*, implying freedom from modern contamination and a continued cultural longevity. Dress, however, like material culture in general, does not develop in isolation. It develops with internal and external forces. Modern concepts of “traditional dress” are often based on festival or ceremonial clothing and are divorced from what people actually wear on a day-to-day basis. Even such festival or ceremonial clothing is a hybrid of indigenous styles and outside or modern influences. African traditional clothing, for example, is a result of centuries of contact and borrowing from African, European, and Arabic cultures. Within these “traditions” runs a current of nuanced and ever-changing fashion that may be unnoticed by outside observers. Many wearers of “traditional dress” willingly trade customary fabrics for modern human-made



ones and incorporate “nontraditional” objects into their clothing in order to appear more fashionable.

The Hawaiian muumuu was concocted by missionaries to “civilize” the native population by covering its nakedness. “Native” dress in Central and South America, as well as in Central Asia and Africa, shows strong colonial influence, especially the multi-tiered flounced skirts. Western hats and garments of all sorts were adopted by indigenous peoples because of a desire to “fit in” or to mimic the ruling powers or in some cases because of market considerations. Native Americans adopted European garments and, like the workers of the industrial cities, combined them with their regular dress, creating a picture of mixed consciousness. Industrial development made fabric cheaper and often replaced native weaving styles and economy. The introduction of artificial dyes replaced natural dyes and increased the range of colors used in native clothing.

In some cases “traditional” dress has even been fabricated. The Welsh national costume for women was invented during the 1830s when Welsh advocate Lady Llanover (Augusta Waddington) romanticized Welsh country dress and published drawings and paintings of her fantasy costumes. By the twentieth

century this fictitious “Welsh dress” became a popular festival dress and tourist attraction. The Scottish and Irish “cultural revival” styles of the twentieth century are other examples of the fabrication or manipulation of existing styles for political purposes.

Dress forms a rich and varied component of global history. It can be used to illustrate economic development, social hierarchy, gender, modernization, and a multitude of other factors in human history.

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See also Festivals; Textiles

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chat

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Coal

Coal, a readily combustible sedimentary rock, fueled the Industrial Revolution of the nineteenth century. It was burned for heat to generate the steam that powered locomotives and machines, and it was an essential ingredient in the smelting of ore. Even though petroleum replaced coal as the most prevalent fossil fuel during the 1960s, coal and coke coal are still used for power generation and metallurgy.

People have known about coal since antiquity, but they did not begin to use coal for fuel on a large scale until the nineteenth century. The physical labor of humans and animals, firewood, and vegetable coal were the main energy resources until the first energy transition to the use of fossil fuels. The “wooden hunger” suffered by Europe during the seventeenth and eighteenth centuries as a consequence of high wood-energy consumption rates by metal foundries led to technical innovations known as “miners’ friends,” including steam pumping, which enabled the exploitation of coal mines and became the precursor of the steam engine. Such innovations allowed large quantities of coal to be extracted for use as coke fuel in smelting ovens.

The Industrial Revolution occurred mainly in the carboniferous basins of Europe, and coal was the main fuel for locomotives and other steam machines. The level of economic development in industrialized countries determined the chronology of their transition to the use of fossil fuels. A minor correlation existed between coal consumption and levels of industrialization during the nineteenth century. During this period the British fleet played an important role

in the expansion of coal use worldwide as British cargo ships monopolized the movement of coal.

In the nineteenth century, the work carried out in coal mines was done manually, frequently by children, and only pumping was mechanized. The mechanization of mine pumping spread to other aspects of mining works at the dawn of the twentieth century. Since then surface exploitation has increased, and the number of manual workers has decreased. Consequently, productivity has increased as labor conditions have improved and accidents have decreased.

Great Britain was the first society to use coal on a large scale for its everyday needs. A number of factors contributed to this. First, Britain had a lot of coal, much of it very conveniently located. Second, it was badly deforested relatively early, making the switch to coal imperative. Third, technological developments, especially in metallurgy and precision boring, facilitated the development in England of the world’s first economically viable steam engines, which were essential to pumping water out of the coal mines. Without steam power, it has been estimated, British coal mining could not have expanded beyond its level in 1700; instead it multiplied sevenfold by 1815, and almost a hundredfold by 1900. Coal mining elsewhere grew even faster in the late nineteenth century, albeit from a smaller base.

During the nineteenth century people were already becoming concerned that the supply of coal might run out. For example, the English economist and logician W. Stanley Jevons was concerned that the exhaustion of Britain’s coal supply might contribute to the decline of the British Empire. While new discoveries of coal might have helped to expand the empire, the



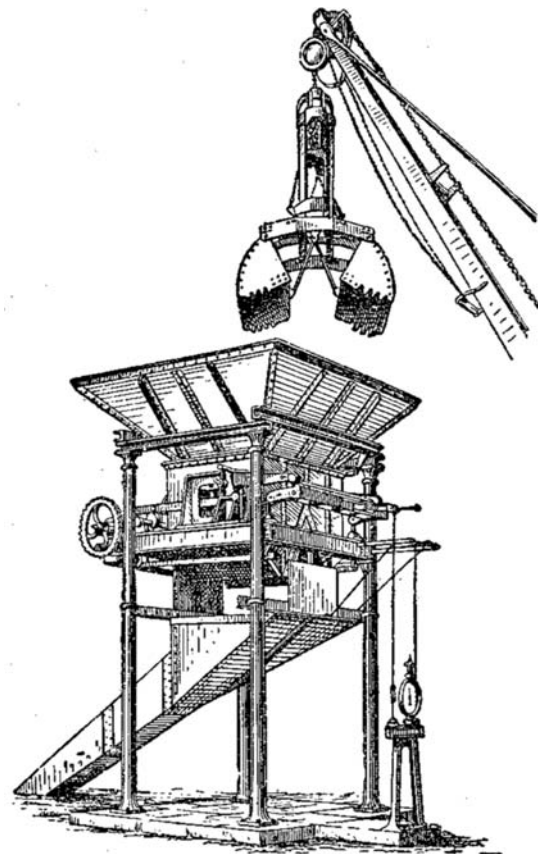
Camels in Beijing transport coal in the late nineteenth century. China's coal production has increased since the 1980s to help satisfy energy demands of rapid industrialization.

pollution caused by burning coal in domestic and industrial use endangered human health. For example, the high concentration of London smog during the period 4–10 December 1952 killed more than four thousand people.

The second major energy transition was to petroleum, but this transition did not end the use of coal. In fact, after the oil crises of the 1970s, a recovery in the use of coal took place. During the nineteenth century and until 1914, the eve of the World War I, coal provided about 90 percent of the primary energy from fossil fuels consumed in the world. Between 1930 and 1960 that percentage decreased from 70 to 50. The prevalence of petroleum was not settled down until the 1960s.

In the twentieth century two main markets for international coal trade appeared: (1) the steam coal market for power generation in Asia and (2) the coke coal market for use by metallurgists. Since 1978 world steam coal production has risen by more than 35 percent. The high price of petroleum since that time has fostered the recovery of coal applications in power-generating stations. In other words, the high petroleum prices during the 1970s meant that many power stations had to again use coal as a primary energy. However, coke coal production maintained its level during the 1970s.

Since the nineteenth century the geography of coal production and trade has changed considerably. In 1900 world production totaled 0.6 billion metric



This nineteenth-century machine, developed in Great Britain, accurately measured and weighed coal delivered to factories.



Coal loaded onto this lake freighter in 1943 at the Pennsylvania Railroad coal docks in Sandusky, Ohio, was intended for shipment to other Great Lake ports. Photo by Jack Delano. Library of Congress.

tons; the top producer was Europe with 0.45 billion metric tons (United Kingdom, 0.18 billion metric tons). World coal production rose steadily from 1 billion metric tons in 1946 to 3.6 billion metric tons in 1996. The United States produces 1 billion metric tons per year. China's production has grown since the 1980s to help satisfy the demands of the country's rapid industrialization. South Africa and Australia, basically export oriented, also have increased their production.

Ten countries have more than 90 percent of the world's known extractable coal reserves, which leads to a significant maritime trade given that coal is generally transported by sea. The threat of the exhaustion of supplies that worried W. Stanley Jevons has not eased. It is estimated that recoverable coal reserves are around 800 to 900 gigatons. At the current rate

of extraction this would last approximately 130 years. Given the annual increase in the rate of coal consumption, however, known coal reserves are more likely to be depleted in fifty to sixty years.

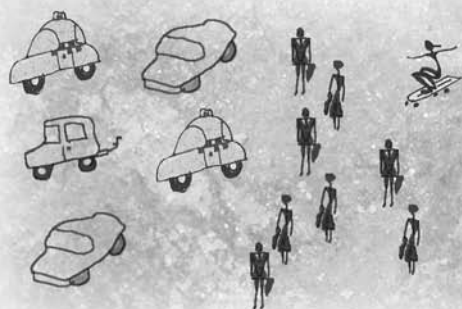
Coal remains the largest source of energy for the generation of electricity worldwide. But it is also one of the largest anthropogenic sources of carbon dioxide emissions. In the twenty-first century this represents a serious concern given the relationship between carbon emissions and the phenomenon of global climate change. Governments and the coal industry are working on new technologies such as "clean coal" and geosequestration but the future remains uncertain. In light of the dangers posed by climate change and associated environmental concerns there is a significant push on to find alternative cleaner sources of energy.

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See also Energy; Industrial Revolution; Oil

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Coffee

As coffee spread from its native Africa to the Middle East, then to Europe and other parts of the world, it was transformed from the drink of a select few to a product for mass consumption. Throughout its rich and varied history, coffee has been associated with prayer, luxury, colonialism, and slavery. It has stimulated all manners and modes of conversation, energized the workforce, and affected myriad aspects of human life.

Coffee's indirect journey—from Africa to the Middle East, across the Indian Ocean to Europe, then to Latin America and the United States, and lately as far as Australia and eastern Asia—reflects its different uses throughout history by distant and distinct peoples. Coffee was first consumed by hunters and warriors; it became over time an aristocratic luxury, then a bourgeois treat, and finally, for many caffeine lovers, a necessity—only to reemerge in the late twentieth century as an object of distinction in the age of specialty beans and brews. Coffee production, marketing, and consumption have been intimately involved in the creation of the modern world, for good and for bad. Coffee has helped fuel the expansion of the modern world economy and has helped energize the industrial workforce. It also prolonged the use of slaves while industrializing food production and enriched colonial empires while heightening awareness of fair trade practices.

Origins

Although the origins of the term *coffee* are disputed, most scholars today agree that it probably derives from the corruption of an Arabic word *qahwah*, which

was a derogatory word for liquor, a prohibited beverage in Islam. Numerous species of trees and bushes and many more cultivars produce the “bean” for coffee, which is actually a seed more like the pit of a cherry. (“Bean” is a corruption of the Arabic word for coffee, *bunn*.)

Coffee appeared naturally in various parts of Africa. *Coffea arabica*, the most common and valuable species, spread from Harrar (today in Ethiopia), where beans were harvested from wild trees. There it was sometimes served as a hospitality drink flavored with salt, butter, or spices, or used as an energy pill for hunters, who included it ground with balls of fat to provision their trips.

Coffee's first appearance in history is disputed. Some scholars point to questionable passages in the *Odyssey* and the Bible as evidence of coffee's great antiquity. Others cite references in Arabic texts from around the year 800 CE. As far as world history is concerned, we can safely put the beginnings of coffee as a commodity at the end of the fifteenth century, but in Yemen, not in Ethiopia.

The Shadhili Sufi sect of Islam, based in Yemen, are generally accepted as the group who popularized a drink made from roasted and ground arabica coffee beans suffused in hot water. They certainly did not set out to stimulate world trade. On the contrary, they sought to flee the material world to reach spiritual fulfillment. The caffeine in coffee served to keep them awake in their religious chanting rituals, which they celebrated at night. But as worldly people with day jobs, they spread the popularity of the drink in the secular world as well.

By the middle of the fifteenth century coffee was so associated with Islam that the Coptic Christians of

Louis Haghe (lithographer) and David Roberts (artist), *The Coffee-Shop of Cairo*. By the middle of the 1500s the centers of coffeehouse culture were Istanbul, Cairo, and Damascus. New York Public Library.



Ethiopia forbade it. But Muslims found coffee—and the coffeehouses that sprang up to serve it—enticing. It was particularly well suited to the observation of Ramadan, the month of obligatory fasting during daylight. Coffee and the coffeehouse created a public nighttime activity. Muslims on pilgrimages to Mecca for the Hajj acquired the coffee-drinking custom and spread it as far to the east as Indonesia and India, west to western Africa, and north to Istanbul and the Balkans. Despite this growing market for coffee, until the end of the 1600s almost all coffee in world trade was grown in the small, irrigated gardens cut into Yemen's steep hillsides. Production was small, (12,000 to 15,000 metric tons per year) and the price high, enhanced by Ottoman taxes and the cost of transporting by camel caravans or boats.

Spread to Europe and Its Colonies

Coffee drinking spread nonetheless. By the middle of the 1500s the centers of coffeehouse culture were Istanbul, Cairo, and Damascus. Men from many walks of life enjoyed the drink and the cafés, which were centers of artistic, intellectual, political, and mercantile life (women only drank coffee in the home or at special baths).

European Christians adopted the habit of drinking coffee initially because it was associated with the

splendor and wealth of the Ottoman Turks, whose empire was at its height in the sixteenth and seventeenth centuries. Served in porcelain cups, newly arrived from China, and on plates made from Mexican silver, spiced with sugar from the Caribbean (Muslims had used cardamom rather than sugar) and joined with tobacco from the Americas, coffee was a mark of distinction for the rising masters of the world economy, who sipped it in luxurious salons.

Coffea arabica became a middle-class drink in England, where a Greek merchant was probably the first to open a coffeehouse in Oxford and then in London in the mid-1600s. The Puritan English became leading European consumers of coffee until tea overshadowed it in the 1700s. Northern Europeans adopted the coffee habit, and Amsterdam became the principal coffee market. This led the Dutch to seek to control production as well as commerce. Beginning in the 1690s, Yemen's leadership position in production was gradually dislodged when the Dutch transplanted coffee to their colony in Java (today in Indonesia). The French began growing coffee in the Indian Ocean island of Réunion and the British in Ceylon (today Sri Lanka). The eighteenth and nineteenth centuries witnessed the apogee of coffee colonialism. Almost all coffee was grown in Dutch, French, and British overseas colonies, with the French colony of Saint Domingue (today Haiti),

The coffee is prepared in such a way that it makes those who drink it witty: at least there is not a single soul who, on quitting the house, does not believe himself four times wittier than when he entered it. • **Charles de Secondat Montesquieu (1689–1755)**



Coffee plantation in Singapore in the late nineteenth or early twentieth century. Photo by Frank and Frances Carpenter. Library of Congress.

becoming the world's largest producer, exporting some 40,000 metric tons in 1789.

European control of the trade led to an intensification of the use of African slaves to grow the crop. Although slavery had been known in Ethiopia and Yemen, coffee producers seem to have been peasants, as they were in Java. But in Java, and later in Ceylon, growers and workers were often coerced into coffee cultivation. In Réunion and then the Americas, which had already imported millions of African slaves to grow sugar, coffee became connected with human bondage.

The nineteenth century saw another great transformation of the world coffee market as two new players entered the arena: Brazil (a coffee-producing nation) and the United States (a coffee-consuming nation). Brazil turned to coffee production after a slave revolt on Saint Domingue almost ended the island's coffee production. World prices skyrocketed. Brazil, independent after 1822, was the world's primary coffee producer by the 1850s. Its vast fertile fields and the importation of over a million African slaves (slavery was not abolished in Brazil until 1888) allowed Brazilians to lower production costs and reduce the world price of coffee. By late in the nineteenth century, coffee became increasingly a mass beverage available to the working class in both the coffee-buying and coffee-growing countries. This trend was particularly

noticeable in what became the world's largest coffee market, the United States.

As a tea-drinking colony under the British, the United States turned to coffee under the influence of the low price of Brazilian coffee and the immigration of millions of Europeans, for whom coffee was a status symbol. Per capita consumption grew in the nineteenth century from well under a pound in 1800 to thirteen pounds in 1900. World coffee imports grew fifteen-fold during the nineteenth century with the United States responsible for almost half the expansion of consumption. In terms of the value of international commerce, coffee trailed only grains and sugar as a world commodity in 1900.

Twentieth- and Twenty-First-Century Trends

The cultivar *Coffea arabica*, which had been virtually the only source for the world coffee economy since its inception, was joined by *Coffea robusta* at the end of the nineteenth century. Native to equatorial Africa, robusta matured faster and, more importantly, was resistant to the leaf blight, *hemileia vasatrix*, which destroyed the coffee plantations of Java, Ceylon, and the Philippines in the last decades of the nineteenth century. The robusta permitted those countries to return to coffee cultivation and spurred more dramatic changes in the world coffee economy of the twentieth century. Late in the twentieth century new variants of the arabica and the robusta that were shorter, more resistant to disease and direct sunlight, and with higher yields were developed. They led to more intensive farming, with five to six times more bushes per hectare and greater investments in fertilizers, pesticides, and processing equipment on smaller, monocultural plots.

The processing and marketing sides also reflected the greater dependence on capital. In 1900 green (raw and unroasted) beans sold according to their port of provenance comprised the great majority of coffee traded. Importers sold them to wholesalers, who roasted and ground the beans themselves or sold the green beans to consumers, usually housewives,



A coffee grower in Jamaica shows off berries ready for harvest. Photo by Carleton H. Graves. New York Public Library.

who did the final roasting, grinding, and brewing at home. Gradually packaged, industrially roasted and trademarked coffee took over the market. The vacuum-sealed can allowed local companies to become regional, and after World War II, national. The invention of decaffeinated coffee and instant coffee, which became popular after mid-century, increased the processors' share of the final retail price. Chain stores and supermarkets further concentrated production among an ever smaller number of huge roasters and food conglomerates. In the last decades of the twentieth century, mergers and takeovers allowed a few gigantic diversified companies to dominate production in many parts of the world. Large investments in advertising and market power to secure shelf space in supermarkets allowed the concentration of the industry to continue.

Until after World War II the largest share of the final price of green coffee went to coffee growers and merchants. As processing and marketing technology grew, a greater share of the final price was pocketed by the processors. Calculations vary greatly, but whereas growing countries by one estimate earned about half of the final price in 1950, today they take in only 10 to 15 percent, though marketers of what is

known as fair-trade coffee offer above-market prices to growers.

As early as 1906, growers began making efforts to protect their market share and to bolster prices on the world market, a trend that culminated in the 1961 International Coffee Agreement (ICA). The agreement was partially a result of Cold War fears that the 1959 revolution in Cuba would repeat itself in the poor and troubled coffee-growing countries of Latin America. For twenty-eight years the ICA negotiated quotas and prices with growers and buyers to insure that growers received a living wage. When the collapse of the Soviet Union in 1991 ended the Cold War, fears of Communist revolutions waned, and the United States decided to push for global free trade. Coffee support prices were among the first victims as the United States withdrew from the ICO. A handful of major food conglomerates became the masters of the world coffee economy.

Latin America, especially Brazil, is still the leading supplier. But its dominance has been challenged since the 1960s by Colombia and Africa, especially the Côte d'Ivoire, though production has fallen of late because of internal unrest. Vietnam, grower of low-quality robusta, suddenly became the world's second largest coffee producer, while Indonesia and India have once again become major producers. The 2010 World Coffee Conference in Guatemala focused on bringing large and small growers together to discuss trends in production, demand, and social and environmental sustainability. Because coffee-bean producing plants are notoriously sensitive, and small changes in temperature and precipitation can have big impacts on coffee quality and quantity, a warmer climate will encourage more coffee farmers to plant the heartier robusta varieties, which are caffeine-rich but bitter, instead of the mild, tasty arabica coffees preferred by people in the United States, the world's largest coffee consumer.

The per capita use of coffee in the United States, however, has steadily declined since the 1960s as consumers increasingly imbibe caffeine in soft drinks. Brazil is today the world's second-largest consumer, and Japan has become the world's fifth largest.

Chinese import of coffee doubled between 1997 and 2002, and it is still on the rise. Ironically, coffee, which originated in Africa and gained popularity in the Middle East five hundred years ago, is now seen in eastern Asia as a symbol of Western modernity.

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See also Slave Trades

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Cold War

The division of conquered Germany, shortly after World War II, into a democratic Western state and a communist Eastern state signaled the start of the Cold War—a fifty-year series of political conflicts between capitalist and communist blocs. The collapse of the Soviet Union near the end of the twentieth century signaled the end of the Cold War.

Following the end of World War II in 1945, a new kind of war, a so-called Cold War, broke out. This new war centered on ideological and political conflicts, particularly the conflict between capitalism and communism. This Cold War, which turned hot several times, particularly in Korea and Vietnam, endured for nearly fifty years and affected most of the globe as countries increasingly had to choose sides with one of the superpowers (the United States and the Soviet Union) in an increasingly bipolar world. During conferences at Yalta (1943) and Potsdam (1945) it became clear that the individual nations that made up the allied powers had very different views regarding the shape of the postwar world.

On 5 March 1946, former British prime minister Winston Churchill made a speech in Fulton, Missouri, (now known as his Iron Curtain Speech) in which he defined the terms of this new conflict. According to Churchill, “From Stettin in the Baltic and Trieste in the Adriatic, an iron curtain has descended across the Continent.” In this speech, Churchill harshly criticized the actions of the Soviet Union. From this moment on, the same Stalin who had been called Uncle Joe during the war effort was now once again transformed into a dangerous and dictatorial enemy.

Cold War in Europe and the United States

In the United States, Cold War policies were set out in several early government documents. The first of these, which came to be known as the Truman Doctrine, was promoted in a speech on 12 March of 1947. In this speech, President Harry Truman declared, “I believe that it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures. I believe that we must assist free peoples to work out their own destinies in their own way.” In June of 1947, Secretary of State George Marshall set out the European Recovery Program (later known as the Marshall Plan), which provided for economic aid to back up the ideology of the Truman Doctrine. In his article in *Foreign Affairs* the diplomat and historian George Kennan set out the final plank in the Cold War platform of the United States. The “containment policy” that Kennan espoused became the rationale for most United States foreign policy behavior in the next forty years. Kennan’s policy of “containing” Communist nations later gave rise to the Domino Theory, that is, the idea that if one country fell to communism, others would follow (particularly in Asia).

The earliest strain in the Cold War came in Germany as the United States and Western nations merged their zones to create a West German federal government and worked to rebuild West Germany while denouncing the Soviet Union’s policies in East Germany. The introduction of a new currency in West Germany led to a Soviet blockade of West Berlin, which lay within East Germany and thus within the Soviet zone of occupation. In response to the



Winston Churchill, Franklin D. Roosevelt, and Joseph Stalin at the Livadia Palace in Yalta, 9 February 1943. National Archives.

blockade, the Allies managed to supply West Berlin through a massive airlift that lasted for over a year. Ultimately, Germany was divided between east and west and in 1961 the Berlin Wall went up, physically dividing the city of Berlin into two zones of power.

The Cold War also led to the creation of NATO (North Atlantic Treaty Organization), an organization that provided for the mutual defense and assistance of Western European nations against any hostile action by the Soviet Union. The Soviet Union responded by creating an alliance with Eastern European countries, known as the Warsaw Pact.

Asia

The agreements made at Yalta had provided a structure for postwar cooperation in Asia but these initial agreements soon fell apart. The Soviet Union had agreed to enter the war in the Pacific three months after the defeat of Germany and Stalin abided by this agreement. Roosevelt had agreed to allow the Soviet Union to establish a base at Port Arthur, China, in exchange for Stalin's agreement to sign a treaty of

alliance with Chiang Kai-shek's Republic of China. A Communist movement, viewed as a direct attempt by the Soviet Union to achieve the worldwide revolution that had been advocated by Lenin, had emerged in China in the 1930s. The Communist and non-Communist (Nationalist) parties in China had attempted to cooperate after the Japanese invasion but had been largely unsuccessful and both groups were anticipating a renewed struggle after the defeat of Japan. In 1949, the Nationalist government fled to Taiwan and Mao Zedong proclaimed the People's Republic of China. The United States refused to recognize Mao's government, instead maintaining ties to the Nationalist government in Taiwan. The United States lamented the "loss of China" and vowed to take whatever steps were necessary to prevent the spread of Communism throughout Asia.

The situation in Korea also deteriorated rapidly. The removal of Korea from Japanese control had been one of the stated objectives of the allies in World War II. Prior to the surrender of Japan in 1945, the United States and the Soviet Union had occupied the country, temporarily dividing it at the thirty-eighth

A Korean girl carrying her brother on her back trudges by a stalled M-26 tank at Haengju, Korea, 9 June 1951.

National Archives.

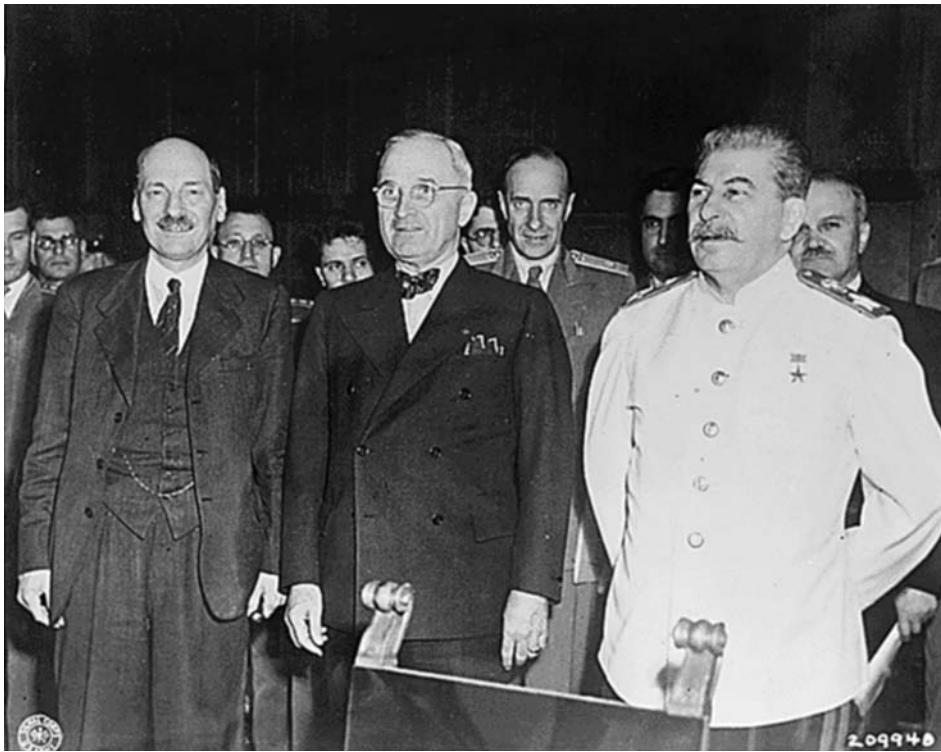


parallel. The allies planned to hold elections after the restoration of peace and allow the newly elected government to rule an independent Korea. However, tensions between the United States and the Soviet Union had led to the establishment of separate governments in North and South Korea. The Communist government in North Korea, with the approval of Stalin and the Soviet Union, invaded South Korea on 25 June 1950. As a result of a boycott of the U.N. Security Council by the Soviet Union, the United States was able to pass a resolution that labeled North Korea as an aggressive nation and called for U.N. forces to be sent to Korea. The U.N. forces, led by the U.S. general Douglas MacArthur, defeated North Korean troops and expelled them from South Korea. Subsequently, MacArthur and the U.N. forces crossed the thirty-eighth parallel and adopted a new mission, which aimed to unite all of Korea under a non-Communist government. China had issued several warnings that they might intervene if U.N. forces crossed the thirty-eighth parallel but these warnings were ignored. When the Chinese made good on their threat to supply both men and matériel, U.N. forces had to retreat back into South Korea. A defensive line was established near the thirty-eighth parallel.

Peace negotiations dragged on without result and the Korean War eventually ended in a stalemate. At the end of the war, Korea remained divided.

The other major “hot” war in the post-World War II period was also fought through the lens of Cold War tensions. The initial war in French Indo-China began as a result of the French decision to try to reestablish control of their colony after the war. War broke out between the French and Ho Chi Minh’s Indo-Chinese Communist Party in 1946. After the French fortress at Dien Bien Phu fell to Communist forces the French agreed to negotiations and the Geneva Conference in 1954 brought an end to the first Indochina war. The United States had sent considerable aid to the French in order to prevent the spread of Communism, while pressuring the French to agree to Vietnamese independence at a future date. The Geneva agreements had called for elections in Vietnam but as it became clear that free elections would most likely result in a Communist victory, the United States sought other solutions. The United States was increasingly unwilling to risk another Asian domino to the Communists. Thus, the United States supported Ngo Dinh Diem, who refused to agree to the elections called for by the Geneva Accords. Despite U.S. assistance South Vietnam was

The Soviet Union is an Evil Empire, and Soviet communism is the focus of evil in the modern world. • **Ronald Reagan** (1911–2004)



The new “Big Three” meet for the first time at the Potsdam Conference. Left to right: Prime Minister Clement Attlee (Great Britain), President Harry S. Truman (United States), and Prime Minister Joseph Stalin (Soviet Union). National Archives.

on the verge of collapse by 1963. The United States responded by sending military advisers and increased material supplies. In 1965, the United States under President Lyndon Johnson began to send U.S. troops to Vietnam. President Nixon, under increasing pressure to end the war, bombed not just Vietnam but also Laos and Cambodia. The Treaty of Paris in January of 1973 ended the conflict. Two years after the war ended, South Vietnam fell to the Communists.

The spread of the Cold War to Asia led Southeast Asian nations to form an alliance in 1954, the Southeast Asia Treaty Organization (SEATO). This alliance was an effort to cooperate economically and also to resist further Communist encroachment in Southeast Asia. It included representatives of Australia, France, Great Britain, New Zealand, Pakistan, the Philippines, Thailand, and the United States.

Africa

Africa was more indirectly affected by Cold War tensions. Both the United States and the Soviet Union

directed economic assistance plans and policies aimed at securing Cold War alliances. But in the postwar world, African nations were occupied by the struggle for independence and faced significant challenges upon obtaining independence. Independence was achieved earlier in north and central Africa, where there were fewer white settlers, than in South Africa, where the white-dominated government struggled to maintain its position of power and the policies of apartheid.

The Middle East

The Middle East achieved its independence after World War II. Regional differences, territorial disputes, and the British mandate that divided territory between Palestine and the newly created nation of Israel contributed to instability in the area. The Arab-Israeli conflict also contributed to violence in the region. Arab nations cooperated in an attempt to defeat the Israelis and reclaim the territory occupied by the citizens of that nation. The emergence of

various militant religious groups radically altered the nature of many Middle Eastern governments, particularly in Iran. During the Cold War, regional problems were further complicated by the political interests of the United States and the Soviet Union, both of whom valued the region, partly because of the vast oil resources in the Middle East. Its strategic location and vast production of petroleum made the Middle East of value to all industrialized nations. The United States contributed money and material aid to the Israeli government and intervened in the area in an attempt to maintain its interests, both economic and military, in the area while the Soviet Union fought and lost a war in Afghanistan.

Latin America

The United States had inaugurated a policy of nonintervention in Latin America in the 1930s but reversed this policy after World War II. Communist movements and fear of the spread of Communism in addition to economic interests in the area were primarily responsible for the change in policy. In Guatemala, Jacobo Arbenz Guzmán came to power and began to reduce the influence and interests of U.S. businesses. The United Fruit Company, controlled by U.S. interests, noted that the Communists were involved in the changes and asked for assistance. A U.S.-led military operation successfully deposed Arbenz Guzmán and the new government repealed his land reform measures and jailed and murdered Communists. A small guerrilla movement of Communists and other nationalists emerged and violence continued for three decades.

In 1959, Fidel Castro came to power in Cuba, enacting a social and political revolution in Cuba based on Marxist ideas. He also initiated land reform, seizing all land from owners who had more than 165 acres. Economic sanctions by the United States and other countries who refused to trade with Cuba caused a rapid decline in the Cuban economy.

Cuba became a key nation in the Cold War struggle between the United States and the Soviet Union. The United States attempted to overthrow Castro by

landing Cuban exiles at the Bay of Pigs in 1961. After this failed invasion, Castro sought protection from the Soviet Union and vowed to spread Communism to other areas in Latin America. Although Castro failed to bring other Communist governments to power in Latin America, his alliance with the Soviet Union brought the world to the edge of a nuclear war during the Cuban missile crisis. The Soviet Union had agreed to install missiles in Cuba and to support Castro against further actions by the United States. In response, President John Kennedy ordered a naval blockade of Cuba, to prevent missiles from being sent to Cuba. Ultimately, Nikita Khrushchev backed down and agreed to dismantle existing sites and pledged not to install missiles at a future date. This direct confrontation and the realization of how close the world had come to nuclear war led to the installation of a direct phone line between the United States and the Soviet Union and subsequently to a thaw in relations and talks regarding the reduction of nuclear arms.

The End of the Cold War

Although there were earlier improvements in the relations between the United States and the Soviet Union and agreements to limit nuclear weapons (SALT I and SALT II), real change occurred only with the collapse of Communism in Eastern Europe and the Soviet Union. When Mikhail Gorbachev became premier of the Soviet Union in 1985 he began attempting to reform the Communist system. The two best-known aspects of his reform program are perestroika, the attempted decentralization and restructuring of the economy, and glasnost, a move toward free speech and a free press. Instead of the reform and revival that Gorbachev hoped would transpire, revolutions occurred in Eastern Europe and when the Soviet Union did not send troops to restore order, the Communist governments in Eastern Europe simply fell. The most prominent symbol of the collapse of the Communist regimes in Eastern Europe was the dismantling of the Berlin Wall in 1989 and the subsequent reunification of Germany in the 1990s. After

Whether you like it or not, history is on our side. We will bury you! • **Nikita Khrushchev (1894–1971)**

an attempted Communist coup in the Soviet Union in 1991, the Union of Soviet Socialist Republics also collapsed. Individual republics such as the Ukraine withdrew from the union and Gorbachev resigned as president of the union after an attempted coup by military and old-style Communists, which led to the rise of Boris Yeltsin as a political figure.

With the collapse of Communism, the Cold War that had dominated European politics for nearly fifty years was essentially over. Although Communism itself still existed in China, Cuba, and a few other areas, the dismantling of the Soviet Union seemed to signify its decline and the victory of democracy. The decline of the rivalry between the United States and the Soviet Union eased tensions and pressure on nations in Asia and Latin America. Nonetheless, the United States and the former Soviet Union continued to have very different views regarding world affairs. The end of Cold War tensions did not lead to the

destruction of NATO, but it did temporarily reduce tensions and end the nuclear arms race between the United States and the Soviet Union. It also paved the way for a reunited Germany and for Eastern European nations to join the European Union.

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See also Détente; Europe, Eastern; Russian-Soviet Empire

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Colonialism

Colonialism, which involves the domination and exploitation of a native population, has been spurred by economic need or greed and political rivalries. Most historians contend that its costs—including loss of life through disease, relocations, and slavery; inhibition of local economic growth; psychological damage to colonized people; and cultural domination—outweigh any benefits, such as the development of an infrastructure for post-colonial modernization and democratization.

Colonialism, broadly defined as “a system of political, economic, and cultural domination forcibly imposed by a technologically advanced foreign minority on an indigenous majority” (Gellar 1995, 140), is a component of empire building, European expansion, and the creation of the modern world system. Its root word, *colony*, comes from the Latin word *colonia*, which referred to agricultural communities that produced food for the Roman Empire.

Colonialism probably goes back some six thousand years in human history to when humans first established settlements large enough to require more food than the surrounding area could provide to support their numbers. The first colonies were probably neighboring peoples whose land or labor (or both) were exploited for food. All classic preindustrial states were colonial in that they often took the land and exploited the labor and resources of subjugated peoples.

Extent and Causes of Western Colonization

Interest in colonialism in the modern era has focused primarily on Western colonialism from about 1500

to the present. Western colonialism has drawn most of the attention because it was so widespread and was a major force in human history. To give some sense of its breadth, consider the German geographer Alexander Supan’s observation that in 1900 European nations and the United States exerted colonial control over 90.4 percent of the territory of Africa, 98.9 percent of the Pacific islands, 56.5 percent of Asia, 100 percent of Australia, and 27.2 percent of the Americas. The major European colonizers were Great Britain, France, Spain, and Germany, with Portugal, the Netherlands, Belgium, and Italy playing a lesser role.

South and Southeast Asia were colonized at first by the Dutch, Portuguese, and Spanish; in the eighteenth and nineteenth centuries the British and French expanded into these regions as well. Africa was colonized by the British, French, Belgians, Spanish, Portuguese, Germans, Italians, and Spanish, with the last decades of the nineteenth and early decades of the twentieth century being the period of most intense colonization.

Colonization of the Americas began at the close of the fifteenth century and did not end until the close of the nineteenth century. Some experts argue that the United States replaced European nations as the colonial power in the Americas through its taking of Native American territory and its dominance over the economies and, at times, governments, of nations such as Honduras, Haiti, and Cuba. This form of colonization is referred to as informal colonialism because the colonizing nation does not have official control over the colonized nation.

In some cases, colonies were placed under direct control of the colonizing nation’s government; in other



This pictograph, which commemorates the Sioux victory over U.S. forces at the Battle of Little Bighorn, shows warriors leading horses with U.S. military saddles.

cases trading companies acted as intermediaries. Still other colonies were organized as protectorates, while some nations remained nominally independent but were run by puppet governments whose policies were ultimately controlled by a Western power (as in informal colonization). In some cases, the method of governing the colony evolved over time: British India, for example, was initially governed through the English East India Company but was taken over by the British government in 1858.

Some experts stress economic factors as the root causes of European colonialism; others stress political factors, and still others a combination of factors. Economically, the expanding world system in conjunction with the Industrial Revolution created greater demand for raw materials and markets for products. Colonies met both needs, as they provided raw materials at low cost and monopoly markets for European-produced goods. Politically, the colonial expansion of the mid- to late 1800s was fueled by national rivalries in Europe, balance-of-power concerns, and national pride. The Berlin Conference of 1884–1885 provided a political rationale for

colonization by stipulating that control of a territory rested on a colonial power's occupation of that territory. The technological advances of the Industrial Revolution, especially steam ships, railroads, the telegraph, and more deadly weapons, made colonization quicker, cheaper, and easier. Finally, it should be noted that the ideas of social thinkers such as Charles Darwin, Lewis Henry Morgan, Karl Marx, and Herbert Spencer were used or misused by colonists to portray colonized peoples as inferior and in need of Western civilization, education, democracy, and Christianity. Thus, colonialism was typically rationalized as being beneficial to those being colonized. It was, in the words of Rudyard Kipling, "The White Man's Burden."

Exploitative Colonialism

Exploitative colonialism is an economic system in which the colonizers seek to exploit the economic resources of the colony while incurring the lowest possible cost themselves. Agricultural plantations, mining operations, and manufacturing plants are typical of exploitative colonialism. Government



and other institutions exist to support the economic endeavor.

Most nineteenth-century Asian and African colonies were run on the exploitative pattern. The colonial power established a new political, economic, and social structure in the colony in the service of economic exploitation. Colonial policy was set in the home nation for the home nation's benefit and with little concern for the colony. The colony was ruled by a small elite group of Western officials, businessmen, farmers, and missionaries who lived apart from the indigenous population in urban enclaves designed and built in European style. In British Nigeria in the 1920s, for example, there was one British official for every 100,000 people. The colonizers often ruled indirectly through favored local leaders who were expected to maintain order, recruit laborers, and collect taxes and food for the colonists. The local leaders and their families, in turn, received preferential treatment. The colonizing power typically made use of a divide-and-rule strategy in which local ethnic groups were pitted against one another so as to forestall organized resistance to colonization.

Colonialism drew the colonies into the expanding world economic system. The colonizers sought land, the products of the land, mineral wealth, and cheap labor. They also sought to use the colonies as a market for goods produced in the home nation. This activity stimulated economic expansion in the colonies, but nearly all wealth flowed to the home nation. There was relatively little economic opportunity for the colonized peoples. Some might find employment as low-level civil servants or as domestics in European households, but most remained farmers or were forced to work in mines or factories. "Middleman minorities"—people from distant ethnic groups encouraged to settle in the colony to fulfill various roles—were employed. Asian Indians, for example, filled this role in British colonies in Africa and the Caribbean.

Settlers and Settler Colonies

In many colonies, there were some people from the home nation who chose to live in the colony and make it their home. Many in the first generation of

settlers saw the new land as their home, and this feeling intensified with successive generations when the latter were permitted to grow up in the new land. In some colonies, such as the United States and New Zealand, the settlers became the largest and dominant group, displacing the indigenous peoples and taking their land. In many other colonies, such as the British colonies in Africa, settlers formed small enclaves, established large farming operations, and lived in relative peace with the indigenous population. Settlers supported independence movements as they, too, saw themselves as suffering from the home country's economic exploitation. Once independence was achieved, however, settlers and indigenous populations often found themselves on opposite sides of issues such as land reform.

Resistance

Colonized peoples rarely accepted colonization without a fight. Revolts, massacres, destruction of property, and the like were common in the first stages of colonization. Revolts were met with force—the military and police were key enforcers of colonial rule—and were rarely successful. Later, more serious resistance took various forms, such as the civil disobedience led by Mohandas Gandhi that helped India achieve independence, the Ghost Dance movement in North America, the Boxer Rebellion in China, the Zulu Wars in South Africa, the Mau Mau movement in Kenya, and the Maroon wars in Jamaica. Local Christian churches were often used as vehicles of resistance to oppression and inequality. Educated members of the local population often contributed to the struggle through poetry, literature, and the media.

Costs and Benefits of Colonialism

There is little dispute that the colonizing nations benefited from colonialism, while the colonies suffered—and often continued to suffer after independence. Nonetheless, some scholars argue that there were benefits to the colony. While colonizers depended

on slavery in some regions, such as the Americas, they also ended it in many regions. Arguably, other benefits of colonialism included control of regional wars and the establishment of a political and economic structure and infrastructure that allowed for postcolonial modernization and democratization. But those claims are contentious: others argue that the economic and political structure and infrastructure of colonialism were meant to serve the colonists and had little positive impact on the local populations following decolonization.

The list of the costs of colonialism, on the other hand, is a long one. It includes massive loss of life through disease, relocations, and slavery; inhibition of local economic growth; new ethnic rivalries and conflicts; psychological damage to the colonized people, reflected in increased suicide and homicide rates; disruption of indigenous kinship and family relationships; a reduced role for women; and destruction of craft specializations as crafts were replaced by imported goods.

Decolonization

By the end of the twentieth century nearly all European colonies had become independent nations. The United States was among the first of the colonies to declare independence, which it achieved with its 1783 victory in the Revolutionary War. Many Spanish colonies in the Americas followed suit in the nineteenth century. For the African, Asian, and Pacific colonies of Britain, France, and Germany, decolonization came in the mid- to late twentieth century, most often as a result of disruptions and political realignments following World Wars I and II.

Decolonization typically takes one of two forms. In the first, exemplified by the United States and Canada, settlers, desiring political and economic independence, sought the end of colonial control. With the mother country no longer in power, the settlers were free to rule their own newly established nation. This independence generally had no benefits for the original inhabitants of the land, however, who continued to find themselves marginalized and pushed out of territories desired by the growing

European-descended population. This was the general pattern throughout the Americas, Australia, and New Zealand. The slave revolt in Haiti that led to independence in 1804 was one notable exception to that pattern.

The other form of decolonization was more common and involved the indigenous, colonized people retaking control of their territory. In most regions it was a long process that often involved violence. At first, requests for more autonomy were generally rejected by the colonizer; somewhat later limited reforms that provided a degree of home rule were often initiated. Finally, the colonial government would leave and the indigenous people would establish their own government and take control of the economy.

The period following decolonization was difficult for most new nations. Old ethnic rivalries for power surfaced, there were often conflicts between settlers and indigenous populations, the numbers of people with the education and experience necessary to run the government and economy were often insufficient to meet the need, and the newly independent countries often lacked the capital to support needed infrastructure and social-welfare development. For many colonies that achieved independence from the 1960s onward, political unrest, a succession of governments, dictatorial rule, poverty, population dislocations, and civil war have followed decolonization.

Decolonization also had a profound effect on many former colonial powers. The loss of low-cost raw materials and a ready market for products caused economic difficulties, although established economic relations between the colonizer and former colony rarely disintegrated entirely. Britain, the Netherlands, and Portugal all created unions of former colonies that helped keep those relations intact. Former colonial powers have also had to absorb millions of immigrants from their former colonies. Some were from favored ethnic groups who fell from favor in the new power structure; others came to the colonial home country in flight from civil wars, revolts, and poverty; many were simply seeking a better life. As a result of the influx of immigrants from former colonies, Britain, the Netherlands, and France have

become multicultural nations with sizeable minority populations—and now face all the attendant questions and problems of racism, minority rights, diversity, cultural norms, and freedom of religion and expression.

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See also Africa—Colonial; Africa—Postcolonial; Biological Exchanges; Decolonization; Empire; Imperialism; Postcolonial Analysis

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Columbian Exchange

The early exchanges of life forms between Europe and America, which began in earnest with the voyage of Christopher Columbus in 1492, included disease germs, weeds, and vermin as well as medicines, crops, and domesticated animals. The effects were far-reaching for species that had developed in relative isolation on different continents of the Old and New Worlds.

Two hundred million years ago the continents of Earth were massed together contiguously. There was maximum opportunity for terrestrial species to migrate and therefore a higher degree of biotic uniformity than later. Then the continents split, drifted away from each other, and thereafter each continent's species evolved independently. North America and Asia reconnected several times in the far north and so share many species, but there are many contrasts between the two; the Old World, for example, has such native species as nightingales and cobras, which the New World does not share, while the New World has hummingbirds and rattlesnakes, not present in the Old World. Contrasts between South America and the Old World are especially dramatic; in the former one finds nose-wagging tapirs, whereas in the latter one finds nose-wagging elephants.

Old and New Worlds: People, Crops, Animals

Ten thousand years ago the most recent ice age ended, the continental glaciers melted, and sea levels rose, dividing the Old and New Worlds once again. Before that a number of species had passed between the two,

the most influential of which was the Old World anthropoid *Homo sapiens*. Thereafter the peoples of the Old World and the Americas evolved separately. The genetic differences that resulted were minor, but the cultural differences were major because the two peoples took different paths in exploiting their different environments.

Both invented agriculture—that is, the domestication of crops and of livestock—but two very different systems of agriculture. The Native Americans probably arrived from Asia with the dog and were therefore familiar with the concept of tame animals, but domesticated few creatures in America, possibly because there were few suitable. Those they domesticated included the llama and alpaca, the guinea pig, and several species of fowl. The Native Americans excelled as farmers, developing one-third or so of all of today's most important food crops: maize, beans of several kinds, the white and sweet potatoes, manioc (cassava), squashes and pumpkins, peanuts, papayas, guavas, avocados, pineapples, tomatoes, chilies, sunflower seeds, and others.

Not surprisingly, Old World indigenes, of whom there were many more than Native Americans and who lived in a wider expanse of land and participated in a greater variety of ecosystems, domesticated more kinds of animals and plants. Horses, donkeys, cattle, pigs, sheep, goats, chickens (today's protagonists of our barnyards and meadows and our chief sources of meat, milk, leather, and animal fiber) are all Old World in origin. The same is true of wheat, barley, rye, oats, rice, peas, turnips, sugarcane, onions, lettuce, olives, bananas, peaches, pears, and many other stock items of our diets today.

Honor sinks where commerce long prevails. • **Oliver Goldsmith (1749–1832)**

Separation of the Old and New Worlds: Disease

The Old World outdid the New as a source of infectious diseases, too. The greater number of people in more varied ecosystems were bound to have a greater variety of diseases, especially because they lived in close contact with their livestock. The intermixing of Old World humans across Eurasia and Africa, and their propinquity with their animals, produced many of the historically most significant diseases. An undoubtedly incomplete list includes smallpox, measles, influenza, malaria, yellow fever, and typhus. Pre-Columbian Amerindians had tuberculosis and treponematosi (having probably brought the latter with them from the Old World) and cultivated, unintentionally, new infections in America, including Chagas Disease, but their indigenous diseases were few and mild compared with those native to the Old World. (Syphilis is often nominated as a distinctively American infection, but that is debatable.)

When Christopher Columbus brought the Old and New Worlds together in 1492, he unleashed the organisms of each on the other. The most spectacular early result of the intermixing was the traumatic spread of Eastern Hemisphere infections among the Native Americans. The European conquest of the Americas was not so much a matter of brutality, though there was plenty of that, as of imported diseases. Smallpox figures significantly in the Spanish conquests of Mexico and Peru, and again and again throughout the Americas. The Native American population fell by as much, claim highly respected demographic historians, as 90 percent before beginning recovery.

On the other hand, Old World plants and animals immensely increased the capacity of America to support in time large human populations. Horses, pigs, and cattle, for instance, went feral from Florida to the Argentine pampa and within a century had propagated into the millions. Old World livestock revolutionized human life and whole ecosystems in the Americas. Meat had been a rare item in the diets of the vast peasantries of the advanced Amerindian societies. After the Columbian Exchange it became

common in many regions and in the others, if not common, at least more available than before.

There had been no beasts of burden in the Americas except the dog and the llama. The pyramids and other monuments of the high American civilizations were raised by human muscle. If the burro had been the only domesticated animal brought to Mexico by the invaders, it alone would have revolutionized indigenous societies there.

The impact of the horse on Native American societies was particularly spectacular. Many Amerindians who had been strictly pedestrian became equestrian. From approximately 1750 to 1800, the native peoples of North America's Great Plains (Blackfoot, Sioux, Cheyenne, Comanche, Pawnee, and others) and of South America's pampas (Pehuenches, Puelches, Tehuelches, Ranqueles, and others), all took to the horse.

Old World crops did not at first advance in the New World as rapidly as Old World livestock—they were, after all, not mobile—but also because most of them were temperate-zone plants not suited to Europe's earliest American colonies, which were all in the tropics. But European colonists adjusted, imported suitable species such as sugarcane, for instance, and suitable varieties of homeland crops, and sowed them where the soils and climates were similar to those at home. They discovered that wheat prospered in the Mexican high country, for example. Olive trees and grapes for wine did well in Peru. Within a century of Columbus most of the Old World's important crops were growing in America.

Among the most profitable was sugarcane, the source of a quasi-addictive substance: sugar. The market for sugar in Europe seemed endlessly expansive for centuries, and therefore sugarcane became the single most important crop in the West Indies, Brazil, and other hot, wet regions in or contiguous to the American tropics. The planting, cultivation, harvesting, and processing of the cane required millions of laborers. The Amerindian populations were plummeting, and European immigrants were in short supply. The workers had to come from some untapped source. The single most powerful force driving the Atlantic slave trade was the sugar plantations' need for laborers.

An estimated 12.5 million Africans were commandeered to work American soils, a majority of them, certainly a plurality, to raise an Old World sweet in the New World for Old World consumption.

1492 and the Old World

Amerindian livestock did not revolutionize life in the Old World. Guinea pigs and turkeys have never figured significantly in Europe, Asia, or Africa as food sources, and the llama was so obviously inferior to several Old World animals as a beast of burden that it has never had more than novelty value in the Eastern Hemisphere.

Amerindian crops, however, had enormous effect on the Old World. Most of those which became standard in Old World diets were brought back by the Spanish and Portuguese to Iberia, where they were being cultivated by the sixteenth century; they spread out from there. Some would flourish where Old World crops would not; manioc, for instance, where the rainfall was too much or too little, the soil infertile, and the pests too voracious for traditional staples like rice and yams. Several American foods were more nourishing, more productive, and easier to cultivate and to harvest than traditional Old World crops. Maize became a standard crop in sub-Saharan Africa, in some regions the most important crop.

The white potato, from the high, wet, cool Andes, became one of the most important food sources for the lower classes of northern Europe. In Ireland it became indispensable for the peasantry, and when, in the 1840s, an American fungus, *Phytophthora infestans*, arrived and destroyed the potato crop, a million died of starvation and disease and a million and a half fled the country.

The list of examples of the influence of the Columbian exchange in the Old World diets is a long one; it includes the tomato in Italian cuisine, the chili in Indian recipes, the presence of maize in most sub-Saharan African diets, and so forth. By way of illustrative example, let us consider the story of American food crops in a land usually thought of as resistant to outside influences: China. No Old World

people adopted these alien plants faster than the Chinese.

The eagerness with which the Chinese received American foods is related to population pressure. Between 1368 and 1644, the years of the Ming dynasty, the Chinese population doubled at the same time that farmers of the traditional staples, wheat in the north and rice in the south, were running into problems of diminishing returns. They were close to raising as much food as they could on suitable land using existing techniques. The problem may have been especially pressing in the south, where most of the level and near-level land close to markets and sources of water for irrigation was already occupied by rice paddies.

The Spanish and the Portuguese, both with American empires, carried the Amerindian crops to East Asia. The port of Manila, newly Spanish and only a few days' sail from the China coast, played a major role in the transfer of native American crops to China. Sweet potatoes, a calorically rich food, arrived in China some time in the last years of the sixteenth century. This crop did well in inferior soils, tolerated drought, resisted insect pests, and prospered with little care compared with existing staples such as



Mesoamerica developed edible varieties of maize as early as 5000 BCE. When maize arrived in China some 6,500 years later, it was valued as a fast-growing, high-caloric food source. Photo by Clara Natoli (www.morguefile.com).



paddy rice. By 1650 sweet potatoes were common in Guangdong and Fujian provinces and well on the way to becoming the staple of the poorer peasants wherever climate would allow.

Maize arrived in China even before the mid-sixteenth century. It, too, was hardy and required no more attention and strength in weeding and harvesting than children could provide. It produced food faster than most crops and provided high amounts of calories. It soon became a common secondary crop from Shanxi in the northwest to Yunnan in the southwest and eventually a primary crop in several inland provinces.

Peanuts, growing in China at least as early as 1538, have always been considered a novelty food in the West, but became a common item in Chinese meals. Peanuts provide plenty of calories and oil, and as they grow enrich the soil with nitrogen.

According to the demographic historian Ho Ping-ti, “During the last two centuries when rice culture was gradually approaching its limit, and encountering the law of diminishing returns, the various dry land food crops introduced from America have contributed most to the increase in national food production and have made possible a continual growth in population” (Ho 1959, 191–192). That statement applies as well to most of humanity in the Eastern Hemisphere.

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See also Biological Exchanges

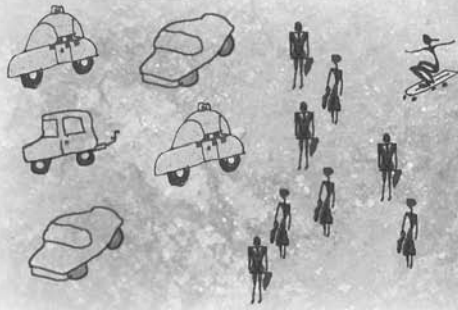
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Columbus, Christopher

(1451–1506)

EUROPEAN EXPLORER

History's portrayal of Christopher Columbus, which varies from hero to destroyer, often overshadows the man and his achievements. The European explorer who first set sail for the Americas in 1492 failed in his mission to find a route to the East Indies, but his journeys to the Americas sparked an era of unprecedented exchange between the Old and New Worlds.

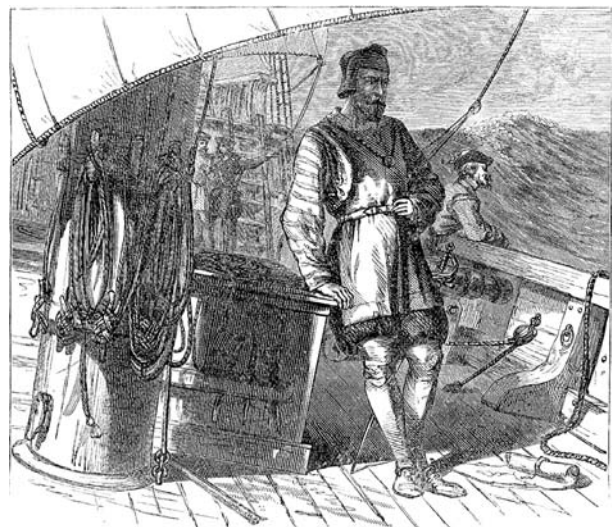
Christopher Columbus is a tabula rasa, a blank slate upon which scholars of European overseas expansion inscribe their opinions about the significance of the man and the expansion. For some Columbus is a romantic figure, the last medieval crusader, whereas for others he is the first modern man, the man who first sloughed off the chains that had limited human development. People once saw him as initiating the civilizing and Christianizing process in the Americas, but now people condemn him for initiating slavery and genocide. His greatest claim to fame, however, is that he initiated the process that revealed the true nature of the Earth's surface and demonstrated that the seas are not an obstacle to worldwide communication but rather highways that can link all humankind.

All of these perceptions of Columbus mask the real man, obscuring his endeavors under a blanket of myths that reduces a complex individual to a stick figure. The difficulties involved in presenting the real Columbus are not, however, solely the responsibility of modern scholarship. The first person to generate a mythical Columbus was the explorer himself.

Columbus's early life is especially murky, a fact that has given rise to a number of imaginative theories about his origins. The best evidence, however, indicates that

he was born in Genoa, Italy, around 1451, the son of a weaver and his wife. Initially trained to practice his father's trade, Columbus went to sea, as Genoese men often did. He sailed much of the Mediterranean before moving to Lisbon, Portugal, where his older brother, Bartholomew, was a chart maker.

Lisbon was the goal for Genoese seamen, merchants, and bankers who were seeking new routes to the East to replace the colonies along the Black Sea that had once linked Genoa to the East but that were now in Muslim hands. Portugal attracted the Genoese because Portuguese sailors were sailing down the west coast of Africa and out into the Atlantic, where they had discovered four island chains: Canary, Cape Verde, Madeira, and Azores. To the Genoese these voyages held out the promise of



Christopher Columbus's voyages demonstrated that explorers could cross and recross the Atlantic in relative safety.



John Vanderlyn, *Columbus Landing at Guanahani, 1492* (c. 1837–1847). Oil on canvas.

finding a water route that would give them direct access to the markets of the Indies. In Portugal Columbus came to know the Atlantic as he participated in voyages to ports in the Gulf of Guinea, to the Azores, Ireland, perhaps even to Iceland.

Just as we cannot draw a precise map of Columbus's travels, we do not know the extent of his formal knowledge of geography and related matters. He claimed to have read the Roman scholar Pliny's *Natural History* and the works of contemporary cosmographers (scientists who study the visible universe) such as the Italian Paolo Toscanelli and the Venetian traveler Marco Polo, a copy of whose book Columbus annotated. He was also acquainted with the tradition that foretold the preaching of the Gospel to all humankind followed by the end of the world.

During the forty years preceding his first voyage, Columbus acquired a great deal of knowledge

about and experience of the Atlantic world, not all of which proved accurate. For example, he asserted that the circumference of the Earth is approximately 32,000 kilometers instead of 40,000 kilometers, the estimate that was accepted by some of his critics and that was close to accurate. His error was linked to his search for patronage: by accepting the smaller estimate of the Earth's size and by accepting the theory that the surface of the Earth is largely land, not water, he was able to make the notion of reaching Asia by sailing west more attractive. A short trip of a few weeks would bring him to the Indies.

Obviously, Columbus did not achieve what he set out to achieve, although he never accepted that fact. His four voyages to the New World—1492–1493, 1493–1496, 1498–1500, and 1502–1504—never reached Asia and never found the trade route that he sought. Seen in that light, he was a failure.

Seen in terms of world history, however, Columbus achieved a great deal. His voyages demonstrated that the Atlantic could be crossed and recrossed in relative safety. This fact in turn encouraged others to extend the range of exploring expeditions, eventually leading to the Spanish explorer Balboa's discovery of the Pacific Ocean in 1513 and then to the Portuguese navigator Magellan's fleet circumnavigating the globe during the period 1519–1522. These voyages showed Europeans the locations and size of the Earth's oceans and allowed ships to reach every shore except where Arctic and Antarctic ice blocked the way. New contacts multiplied, crops and diseases spread, and a new era of world history came swiftly on stream as sailors, colonists and conquerors collided with Amerindians and other previously isolated peoples around the Earth.

Columbus pioneered this new era; but his reputation has since fluctuated from heroic to hateful. After 1776 American revolutionaries toyed with the idea of treating him as the founder of their new nation, and named the District of Columbia accordingly. In 1893, the World's Columbian Exhibition at Chicago celebrated the 400th anniversary of his voyage whole heartedly. Then in the twentieth century, Italian immigrants began to parade on Columbus Day, claiming him as their own special hero. But

when the 500th anniversary came round in 1993, critics damped official attempts at celebration, accusing Columbus of responsibility for destroying the Amerindians and upsetting the natural balances of the New World.

James MULDOON

The John Carter Brown Library

See also European Expansion; Spanish Empire

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Comintern

The organization called the Communist International, or Comintern, split from the Socialist International in 1919. Dominated by high-ranking members of the Russian Communist party, the Comintern initially set the goals of a worldwide proletarian revolution and the formation of an international Soviet republic, but it made subsequent decisions contradicting these aims.

The foundation of the Communist International, or Comintern (sometimes spelled Komintern), was officially proclaimed on 6 March 1919, at the Bolshoi Theater, Moscow, as the conclusion of debates at the First Congress of activists who refused the compromise position of the Socialist International controlled by reformist Social Democrats. Fifty-two delegates (thirty-four with a vote), predominantly from central and eastern Europe, and nominally from Asia and America, decided to create a Third International after what they denounced as the failure of the previous two Socialist Internationals, dominated by Social Democrats who had supported their respective countries during World War I.

The delegation of the host country included the highest-ranking members of the Russian Communist Party: Vladimir Lenin (1870–1924), Leon Trotsky (1879–1940), Joseph Stalin (1879–1953), Georgi Chicherin (1872–1936), Grigory Zinovyev (1883–1936), and Nicolay Bukharin (1888–1938), the latter two becoming the first two chairmen of the new organization. Owing to the extreme difficulty of travel because Bolshevik Russia was under attack by Western powers, other countries with a strong tradition of working-class militancy had only token representation. Thus Russians easily dominated The Congress

from the start. The agenda is probably best summed up by the concluding words of Lenin's inaugural speech: "The victory of the proletarian revolution on a world scale is assured. The founding of an international Soviet republic is on the way," (The Communist International 2004) but there was a fundamental ambiguity in the notion of an "international Soviet republic," because it could easily be interpreted as a republic subservient to Soviet Russian interests—an accusation that always plagued the Comintern.

The proceedings of the Second Congress (1920) led to the subsequent split in the world left between Communists—who adhered to the Comintern and its objectives—and Socialists, or Social Democrats, who rejected them. Many well-wishers from the Socialist ranks attended, but Zinovyev presented a list of twenty-one conditions to which adherents had to subscribe—many of them unacceptable to people who otherwise supported the Russian Revolution. All were asked to adopt the standard name, "Communist Party," and to accept Comintern decisions as binding, but the acid test was the adoption of "democratic centralism" as the governing principle of the Party in each country. In combination with the "dictatorship of the proletariat," this mode of functioning was found incompatible with fundamental freedoms by many existing left-wing organizations, who therefore declined to join the Communist International.

In a climate of extreme domestic and international bitterness, almost every developed or colonized country of the world then saw the creation of a Communist Party, side by side with the existing Socialist party or parties, whatever their names. The ideal of world revolution obtained by civil or foreign war, which was sustained by the continued agitation and/or military

Martyrs are needed to create incidents. Incidents are needed to create revolutions. Revolutions are needed to create progress. • **Chester Himes (1909–1984)**



A Soviet poster made by Ivan Vasilyevich Simakov in 1922 commemorated the fifth anniversary of the October Revolution and the IV Congress of the Communist International.

operations in Germany, Poland, and the debris of the Austro-Hungarian Empire, did not really abate until the final defeat of the German Communists in October 1923. The fiery anti-bourgeois language of Comintern affiliates fueled both the revolutionary enthusiasm of its adherents and the fears of established governments, including those with moderate left-wing majorities.

But then the Comintern instigated the first of the about-faces for which it became so notorious. At the Third Congress (1921), Lenin acknowledged that world revolution had not resulted from the “Imperialists’ War” (World War I) and that the Revolution could only be consolidated in Russia if the economy was modernized, notably with imports from capitalist countries. During the Fourth Congress (1922), Trotsky delivered an enthusiastic speech in favor of Russia’s New Economic Policy, but the rift was becoming evident between the continued supporters of world revolution (Trotsky and Zinovyev) and the advocates of “Socialism in one country,” led by Stalin and Bukharin after Lenin’s death in January 1924.

This was more than a personal quarrel, as the issue at stake was the orientation of the world Communist movement. In the end, Stalin’s views prevailed and in 1926 Bukharin (who was himself eliminated in 1929) replaced Zinovyev at the head of the Comintern, which became a mere instrument in Stalin’s hands in the furtherance of Soviet—some would say

Russian—interests. This is the period when Socialists were described as “Social Fascists” in Communist publications and speeches all over the world. Hitler’s ascent to power in January 1933 and fears of German aggression led to another radical about-face, with the Communist International now clamoring for a “united front against Fascism,” commonly called the Popular Front, by all progressive forces. In 1935, the Seventh (and last) Congress of the Comintern, now headed by the Bulgarian Georgi Dimitrov, gave its official sanction to this priority, which relegated world proletarian revolution—the initial purpose of the Third International—to a distant future. The final ideological blow came with the Nazi–Soviet Pact of August 1939, which technically made Communists worldwide the allies of Hitler, but the final dissolution of the Comintern came only on 22 May 1943, as a friendly gesture toward the Western allies of the Soviet Union in the “Great Patriotic War.”

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See also Communism and Socialism; Lenin, Vladimir Ilyich; Revolutions, Communist; Russian Soviet Empire; Stalin, Joseph

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Communication Media

Humans may have developed language as many as 100,000 years ago, fostering complex communication that far surpassed that of any other species. Since the invention of writing systems roughly 5,000 years ago, improvements in communication have been closely tied to changes in technology, from simple artifacts to elaborate equipment and complex networks that allow humans to transfer information over time and distance.

The term “communication” includes all the ways in which living beings convey information to one another. Plants and animals communicate by smell, sight, and sound. Human beings, with a limited sense of smell, communicate by sight and sound in far more complex ways than any other creatures. Not only have humans developed elaborate languages and gestures for face-to-face communication, they have also invented media such as writing and mechanical or electrical systems that transcend the constraints of time and space.

Human communication systems have had profound implications for world history. Language is the most important way in which humans have overcome their bodies’ limitations through culture, allowing them to spread into all the Earth’s environments. But language, writing, and other media have divided humans into rival groups and led to conflicts and the exercise of power by some people over others. For the past 5,000 years, improvements in communication have been closely tied to changes in technology, from simple artifacts to elaborate equipment and complex networks. Advances in technology have increased the efficiency of communication in

fundamental ways. Language has allowed humans to express complex ideas. Writing permitted communication at a distance and through time. Paper and printing diffused information widely, while the mass media has combined widespread with instantaneous diffusion. The Internet seems destined to offer the advantages of all earlier media, with the potential for transforming civilization in unforeseen ways.

Language

Speech is the original and only universal means of communication. All children learn to talk—except the deaf, who learn to sign—for language ability is innate in human beings. The six thousand languages spoken in the world today carry culture and provide identity, uniting people who understand each other and dividing them from those who speak another language. Yet anyone can learn any language, for there is no genetic predisposition for specific languages.

For centuries, people have known that some languages resemble one another: French, Spanish, and Italian are Romance languages, while Russian, Polish, and Czech are Slavic. It was also known that languages change over time, and that the Romance languages, for instance, all evolved from Latin. Beyond these obvious resemblances are more subtle affinities that only trained linguists can identify. In 1786 Sir William Jones, a judge in India, described the resemblances between Sanskrit, the ancient language of India, on the one hand, and Greek and Latin, on the other. He even asserted: “no philologist could examine them all three, without believing them to have sprung from some common source, which, perhaps, no longer exists” (Ruhlen 1994, 27). Linguists



Painting of a horse at Lascaux, France. People of the foraging era communicated by painting on the walls of caves or by carving pictures on rocks.

later proved Jones right by identifying Indo-European as the ancestor of most languages of Europe and India. Identifying affinities between seemingly distant languages and trying to reconstruct their common ancestors is the ongoing task of historical linguistics.

For over a century, linguists concentrated on demonstrating that the languages of Europe, Persia, and India form a great family called Indo-European. They also identified Semitic (Arabic and Hebrew), Bantu (the languages of central and southern Africa), Altaic (in central and northern Asia), Austronesian (in Southeast Asia and Polynesia), and other language families. Using painstaking techniques, they reconstructed the vocabulary of the long-vanished languages. Beyond that, they dared not go, for there seemed to be no resemblances between different language families.

Recently, however, bolder linguists have advanced the hypothesis that entire language families that seem unrelated actually belong to superfamilies and descend from a common ancestral tongue spoken tens of thousands of years ago. The boldest of all have advanced the idea that all the languages spoken in the world descend from a single original language—the “Mother Tongue”—spoken in Africa about 100,000 years ago.

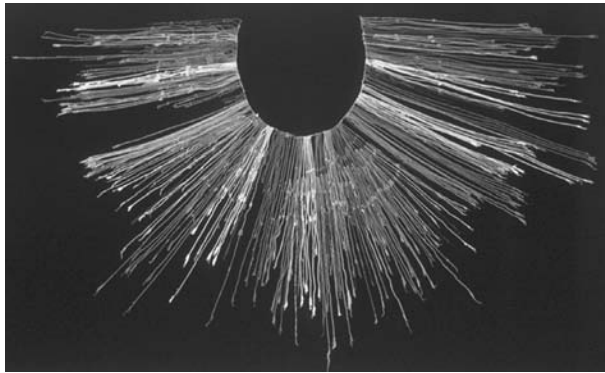
Meanwhile, anthropologists studying ancient bones found that the first *Homo sapiens*, unlike earlier

hominids, had vocal cords capable of articulating words and minds able to carve sculptures and draw pictures: tantalizing clues to the complex thinking such as language requires. From the evidence of the bones, they deduced that *Homo sapiens* originated in Africa some 100,000 years ago and then migrated to other continents.

At the same time, geneticists were identifying the resemblances between the DNA of people on different continents. By doing so, they could determine the approximate length of time since two groups separated and where their ancestors came from. What they found is that *Homo sapiens* originated in Africa well over 100,000 years ago; some migrated to the Middle East around 100,000 years ago; they reached Southeast Asia about 80,000 years ago; New Guinea and Australia 50,000 years ago; Europe some 40,000 years ago; and the Americas 15,000 years ago (all figures give or take a few thousand years).

The findings of these three sciences, arrived at quite independently, are amazingly similar. What they tell us is that the language ability is unique to *Homo sapiens*; that the first language was probably spoken in Africa over 100,000 years ago; that humans dispersed throughout the world; and that as groups split up, their languages changed in different ways, producing the incredible variety that exists in the world today. Yet beneath that variety, the ability to learn and use language is the same all over the world, and all languages are equally capable of expressing the same range of ideas.

What caused the great variety of languages is separation. For millennia, as human groups dispersed, the differences between their languages increased. Before 10,000 years ago, when all people were gatherers and hunters who lived in small bands that rarely interacted, they must have spoken hundreds of thousands of different languages. Since the advent of agriculture and civilization, the trend has been reversed. Kingdoms and empires relied on communication and imposed a common language, if not on everyone, then at least on the educated. Several western European peoples speak languages derived from the language of the Roman Empire. Arabic is spoken from



The Incas of South America kept records of taxes and other transactions with knotted strings called *quipus*. Larco Museum Collection.

Iraq to Morocco, lands conquered by the Arabs in the seventh and eighth centuries. Most Latin Americans speak Spanish, most North Americans speak English, and many Africans learned the languages of their former colonial masters.

Though colonial empires have vanished, the spread of imperial languages continues. In fact, thanks to radio, television, business, and the press, it has accelerated. In Africa, schools teach children French or English or Portuguese. To prosper in a globalizing world, increasing numbers of people know they must speak not only their mother tongue but also a national or global language, and sometimes several.

The spread of national and global languages threatens linguistic minorities. Languages spoken by small numbers of people, such as indigenous tribes in the Americas, India, or Southeast Asia, are disappearing as young people turn increasingly to the languages of television, the press, the schools, and government, and see no reason to retain the language of the older generation. By the end of the twenty-first century, only half the languages spoken today will still be used. When languages vanish, so does much of the oral culture that they carry, such as tales, myths, and religious beliefs. Linguists are trying to record and transcribe as many of the endangered languages as they can before they disappear forever, but it is an uphill battle. Often the only people still fluent in an endangered language are old and cannot recall all

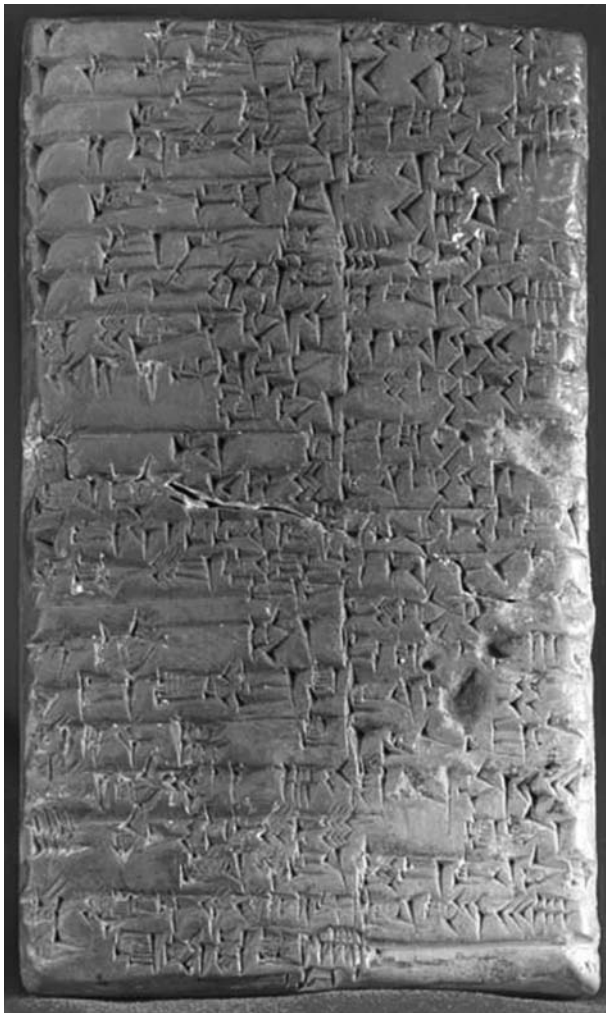
they once knew. As communication improves, the diversity of cultures in the world shrinks.

Visual Communication

Even before writing was invented, speech was only one of several means that humans used to communicate. People of the foraging era painted on the walls of caves or carved pictures on rocks. Such rock art is found in many places, the earliest in Namibia dating back 28,000 years, followed by the 16,000-year-old cave paintings of southern France, and many others, from the Sahara to Hawaii. Some archaeologists even speculate that Australian rock art may date back as far as 75,000 years ago. Neolithic people erected large stone monuments, such as Stonehenge in England or temples in Malta. The Olmecs of southern Mexico and the people of Easter Island in the Pacific Ocean carved gigantic stone sculptures. Such creations were works of art that served as ways of communicating ideas, as reminders of events, or as part of religious rituals.

Even more common than the artistic creations of prehistoric people are their mnemonic devices. Our world today is full of symbols that communicate and remind without the need for words: the silhouette of a person in pants and another one in a skirt indicate men's and women's toilets; a cigarette with a bar through it means "no smoking"; traffic signs can be grasped at a glance even by those who cannot read words. Mnemonic devices were among the earliest means of communication devised by *Homo sapiens*. Tally sticks with notches, found in the caves of Cro-Magnon peoples in France dating back 30,000 years, may have corresponded to the phases of the moon. Polynesian navigators made maps out of sticks and strings to help them remember the location of islands and to instruct their disciples. The Incas of South America kept records of taxes and other transactions with *quipus*, or knotted strings. And in Mesopotamia (now Iraq) and nearby regions, long before writing, people kept records of goods produced and exchanged with the help of tokens, bits of clay fashioned into different shapes that corresponded to

Communication leads to community, that is, to understanding, intimacy and mutual valuing. • Rollo May (1909–1994)



Mesopotamian cuneiform tablet (c. twenty-fourth century BCE) from the Kirkor Minassian collection.
Library of Congress.

the items they represented (sheep, bushels of grain, jars of oil, and so on).

These are the physical objects that have survived or left traces for scientists to analyze. But like all people today, prehistoric people also must also have engaged in more ephemeral means of visual communication, such as gestures, facial expressions, songs, body movements, and dance. It is likely that they combined words, gestures, and music in religious rituals, storytelling, and dramas. The variety of ways in which humans could communicate with one another, even in prehistoric times, was almost limitless.

Writing

Writing is a means of inscribing words on a physical medium that can be preserved through time or transmitted from person to person. Full writing systems, capable of conveying any word in a language, appeared in several regions of the world at the beginning of their urban civilizations. The first was Sumer, in lower Mesopotamia, between 3300 and 3000 BCE. The script that the Sumerians created is called cuneiform, or wedge-shaped, because it was inscribed on clay tablets with the wedge-shaped end of a reed. Cuneiform writing and clay tablets were adaptable to many other languages in the Middle East and remained in use for 3,000 years. Tens of thousands of tablets have been found, almost all of them dealing with mundane matters of business, taxes, and administration. By the second millennium BCE, cuneiform was used to write literary texts such as the *Epic of Gilgamesh*.

The Egyptians, probably inspired by their Mesopotamian neighbors, created three writing systems. The best known is hieroglyphics, a combination of pictures and symbols that were carved on stone monuments and painted inside burial chambers and on important documents. Religious texts were written on papyrus, made from a reed that grew in the Nile delta, in a simpler script called hieratic. Everyday matters, such as business records or lists of words, were written in demotic, a kind of handwriting. Unfortunately, unlike the permanent clay tablets of Mesopotamia, almost all the papyrus documents have long since perished.

The Chinese began writing around 1500 BCE. Their first known writings were on bones used by soothsayers to predict the future. From the start, Chinese writing was logographic, meaning that each character represented a word. Though modern Chinese characters look different, scholars can trace their development from the earliest engravings to the present. It is by far the longest lasting writing system in the world, and suits the Chinese language admirably. Chinese characters were also adopted by Koreans and Japanese.

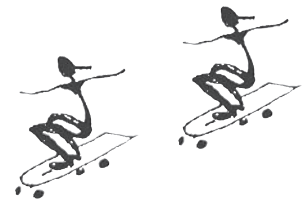


This telegraph key and register transmitted Samuel Morse's message "What hath God wrought" (Numbers 23:23) to his assistant Alfred Vail in 1844 along an experimental line between Washington D.C. and Baltimore. Photo by Alfred Harrell.

In the Americas, only the Maya created a full writing system, about 300 BCE. Like Egyptian hieroglyphics, it was pictographic and extremely complex. It was used in conjunction with the ancient world's most elaborate calendar to inscribe religious texts and the chronologies of kings and battles on temple walls. Mayan writing may have been based on Olmec systems dating back to the mid-second millennium BCE.

Today, most of the world uses alphabetic scripts. The first alphabet was devised by Semitic people in Egypt around 1800 BCE and spread from there to Palestine and beyond. Semitic alphabets such as Hebrew and Arabic include only consonants. Vowels are indicated by marks above the letters, but only in religious texts and in readings for children. When the Greeks adopted alphabetic writing from the Phoenicians in the eighth century BCE, they added vowels, which were necessary to express the Greek language. The Latin and Cyrillic (Russian) alphabets, used by a majority of the world's people today, are derived from the Greek.

Writing has been used for many different purposes: simple business documents, personal messages, monumental inscriptions, sacred texts like the Bible and the Quran, and works of literature and philosophy. For centuries, only a small minority—upper-class men, specially trained scribes, and a very few women—could read and write. Ancient economies were too limited to need much writing, and writing materials (except for clay) were too costly for most people.



More widespread literacy had to await the invention of paper and printing during the second millennium CE.

Postal Systems

Early writing systems were invented or adopted by government officials to keep records and communicate information and orders. Small states used messengers, but larger kingdoms and empires needed more reliable means of staying in touch with distant provinces. The Persians built the Royal Road from Susa, their capital in western Iran, to Ephesus on the Black Sea. Along it they established relay posts with fresh horses for royal messengers. The Romans built many roads and created an imperial messenger service, the *cursus publicus*. The Chinese, the Inca, and other empires found the same solution to the problem of administration at a distance.

Members of the public, however, had to find a traveler willing to take a letter to its destination. Only in the seventeenth century were postal services open to the public, at a very high cost. It was railroads, introduced in Britain in the 1830s and spreading to the rest of the world during the nineteenth century, that transformed postal systems from the exclusive privilege of the wealthy and powerful to the rapid, reliable, and cheap means of communication we are familiar with today.

Paper and Printing

Writing needed only simple artifacts and touched only a minority of people. To reach more people, communication had to be mediated by technology. The first in a series of ever more powerful communications media were paper and printing. Both were Chinese inventions. The earliest paper, made from hemp and ramie fibers, dates to the first century BCE. China was an extensive empire with a large literate elite that valued ancient texts and the art of calligraphy, and therefore used a great deal of paper. By the Song dynasty (960–1279 CE) there was an active trade in how-to manuals, novels, religious texts, and



Alexander Graham Bell speaks into a prototype of the telephone.

other books. The craft of papermaking spread from China to the Middle East in the eighth century and to Europe after the twelfth century.

What made paper truly useful was the invention of printing. Woodblock printing, in which a text was carved into a block of wood, originated in China in the eighth century CE and was used to print tracts, engravings, and paper money. Movable type made of ceramic appeared in the eleventh century, followed by metal type in the thirteenth. It was more widely used in Korea than in China, where woodblock predominated until the nineteenth century. In Europe Johannes Gutenberg (c. 1390–1468) reinvented movable metal type and printed a Bible in 1453; soon after the printing of all sorts of books, pamphlets, maps, posters, newspapers, playing cards, and much else contributed greatly to the expansion of literacy in the West as well as in East Asia.

Among the means of communication that printing permitted, the press became the most popular and influential, especially after the invention of steam-powered rotary presses in the early nineteenth century and the appearance of cheap tabloids a few decades later. Newspapers provided not only local news and useful information, but also stories from foreign countries slanted so as to inflame nationalistic passions.

Far from bringing about greater international understanding, the press raised popular enthusiasm for imperial conquests in the late nineteenth century and world wars in the early twentieth century.

Optical and Aural Signaling

The human voice only carries a short distance, and communicating in writing means transporting a physical object. In many parts of the world, people sought means of conveying information more rapidly over longer distances. Native Americans used smoke signals; tom-toms or drums were known in the Americas and in Africa; the Romans and medieval Europeans built towers on which fires were lit to warn of danger; ships used flags; and in 1775, Paul Revere hung lanterns in a church tower in Boston to warn of approaching British troops. All such signals had a weakness, however; they could only convey a few prearranged signals in one direction.

This changed during the wars of the French Revolution with the invention of two open-ended bidirectional visual communication systems: the optical telegraph and naval flag telegraphs. The optical telegraph, invented by the Frenchman Claude Chappe (1763–1805), consisted of articulated boards that could be moved into different positions to indicate either a code number or a letter of the alphabet. Starting in 1794, the French government placed such devices on towers throughout France and Napoleon's empire. Employees watched for signals from one neighboring tower and relayed it to another. On clear days, a message could travel from Paris to Toulon, 760 kilometers and 120 towers away, in twelve minutes. In night and fog, however, the system stopped.

At the same time and for the same reason—war—British naval officers transformed naval flag signaling from an occasional one-way message to a method of conveying any information between any two ships within sight of each other. At night, ships used lanterns with shutters. When the Napoleonic wars ended in 1815, these methods were quickly adopted by merchant ships and spread around the world.

Louis Daguerre, *Boulevard du Temple* (c.1839). The French government acquired Daguerre's patent for the Daguerreotype in 1839 and pronounced the invention a gift "free to the world."



Electrical Telecommunication

The telegraph and telephone are treated in detail in a separate article, so here we can give a very brief summary. The electric telegraph was developed in Britain in the 1830s and in the United States in the early 1840s. The American system, using a single wire and the code devised by Samuel Morse (1791–1872), was gradually adopted worldwide. An electric telegraph line cost less to build than its optical predecessor, could operate at night and in any weather, and sent messages much faster. So great was its capacity that it was opened to all users: railroads, governments, the press, and the general public. By the 1850s, telegraph networks covered Europe and the eastern United States. During the following decades, colonial powers erected telegraph lines in India and parts of Africa, as did independent nations in Latin America. The Chinese resisted for several decades, seeing it as an instrument of western penetration and espionage.

Meanwhile, engineers and entrepreneurs experimented with submarine telegraph cables to connect islands and continents into a global network. The first successful transatlantic cable began operating in 1866, followed in quick succession by cables to

India, Australia, and China in the 1870s, and around Africa in the 1880s. On the North Atlantic, competition reigned, but elsewhere, the cable business was monopolized by a few British firms. International and intercontinental telecommunication facilitated the expansion of trade and the flow of information around the world. It did not, however, lower the desire or reduce the opportunities for war as its pioneers had expected.

Unlike telegraphy, which had its greatest impact on long-distance communications, telephony was largely a local matter restricted, until well into the twentieth century, to businesses and wealthy people. The telephone was invented in 1876 in the United States by Alexander Graham Bell (1847–1922) and soon installed in all the major cities of North America and Europe. A transcontinental connection from New York to San Francisco was delayed for technical reasons until 1915. Only since World War II have telephone lines, and more recently cellular phones, spread to rural areas and developing countries.

Guglielmo Marconi (1874–1937) demonstrated the first wireless communication system in 1895. For the first twenty years, its use was restricted to sending telegrams in Morse code, while engineers concentrated on building ever larger transmitters to

communicate over ever longer distances with ships at sea and across continents and oceans.

Electronic Mass Communication

The nature of wireless communication changed radically when newer equipment began transmitting voices and music as well as dots and dashes. Broadcasting began with station KDKA in Pittsburgh in 1920. Two years later the United States had 564 commercial stations supported by advertisements. In most other countries, broadcasting was monopolized from the start by governments that used the new medium for cultural “uplift” and political propaganda. By the 1930s, shortwave radio broadcast political messages to foreign countries.

Television was technically feasible by the late 1930s, but its use in mass communication was delayed by World War II. It became a common consumer item in the United States during the 1950s and in Europe and Japan in the 1960s and 1970s. Though signals could only be broadcast locally, stations were connected by cables and the industry was dominated by three networks in the United States and one or two national networks in other countries. To prevent their citizens from watching foreign broadcasts, governments imposed mutually incompatible technical standards. In the 1970s and after, two new technologies—satellites and cables—challenged the entire system of national or commercial centralization, encouraging the proliferation of alternative information and entertainment media.

Motion Pictures and Sound Recording

During the nineteenth century, photography developed as a new art medium. At the end of the century, inventors in the United States and France found ways of projecting images in sequence so rapidly that the eye saw motion. Entrepreneurs soon found ways of presenting entire dramas on film, creating an industry that grew even more popular with the advent of talking pictures in the late 1920s and color films in the late 1930s.

Sound recording began in 1877 when Thomas Edison (1847–1931) recorded a voice on a cylinder. Ten years later, flat disks not only permitted the recording of music, but could be mass produced. After World War II, records were gradually edged out by magnetic tape and, since the 1980s, by compact disks and other digital media derived from computer technology.

Computers and the Internet

Until the 1980s, the mass media were unidirectional, with the public in the role of passive recipients. Computers made mass communication interactive on a global scale. This became possible when personal computers became affordable consumer items and even more when a gigantic decentralized network, the Internet, permitted the connection of any computer to any other. At first, the Internet operated like a free text-messaging service, but by the 1990s, the World Wide Web transmitted pictures, voice, and music as well as text. Businesses quickly seized upon the Web as a cheap means of advertising and selling their goods and services. Unlike radio and television broadcasting, however, neither business nor governments have been able to monopolize or censor the Internet. Individuals and organizations can transmit any kind of message or information to any interested party with access to a computer. What is emerging is a combination of personal and mass communication linking all parts of the world.

Although the price of computers and Internet service keeps coming down, this technology still benefits disproportionately the organizations and citizens of the wealthier countries. As of this writing, there are more computers and telephone lines in Manhattan than in all of Africa, and the gap is widening. Like their predecessors, the new communication technologies favor the elites, both locally and globally.

The Future of Communication

In the twenty-first century, communication systems will continue to expand and deepen their penetration

around the world. Cellular telephone and Internet access will reach even the most remote village. Newer media, such as wireless video-on-demand and virtual reality will supplement the media we know today. In the process, they will homogenize the world's cultures. Local languages will disappear, replaced by a few global ones. Tastes in clothing, music, and entertainment will converge. Yet, if past experience is a guide, better communications will not bring about better understanding between the peoples of the world or reduce the likelihood of wars. While technology gives us the power to send information across time and space at ever lower cost, it cannot prevent the abuse of such power by those who control the media.

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See also Art—Paleolithic; Internet; Language; Language, Classification of; Language, Standardization of; Letters and Correspondence; Mass Media; Music—Overview; Technology—Computer; Telegraph and Telephone; Writing Systems and Materials

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Communism and Socialism

Socialist movements inspired by Karl Marx in late-nineteenth-century industrialized Europe sought to end class struggle and distribute goods evenly among the people. Communist parties forming in the early twentieth century in Russia and China argued that the key to industrialization was state ownership and planning. By the 1980s, the economies of major Communist countries were stagnating, clearly unable to compete effectively with more dynamic economies of the capitalist West.

An ancient vision of an ideal human community characterized by abundance, equality, freedom, cooperation, and harmony lies at the core of modern socialism and communism. Elements of this vision have surfaced repeatedly—in the message of the Hebrew prophets, in millenarian movements in Asia, Africa, and elsewhere, and in the small utopian communities of early-nineteenth-century Europe and America. (In general terms, communism refers to a political system that abolishes private property, and socialism to a system of collective ownership of the means of production and distribution.)

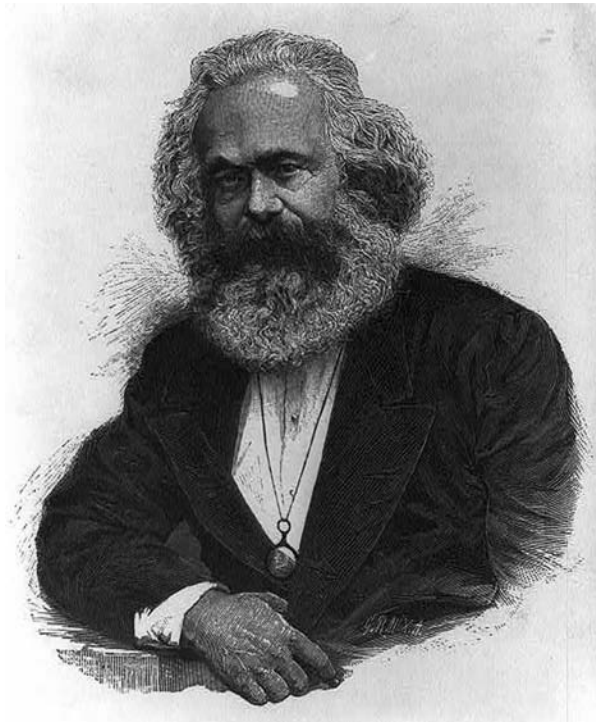
Marxism

Modern socialism took shape in the industrializing societies of western Europe during the nineteenth century. As a set of ideas, this socialism is forever connected to the writings of Karl Marx (1818–1883). Having witnessed industrial capitalism during its early and harshest phase, Marx set out to analyze that phenomenon and to chart its future development. Through the wonders of modern technology, Marx

argued, industrial capitalist societies had potentially solved the ancient problems of scarcity and poverty. They could now produce more than enough to meet the material needs of their citizens. In this sense, industrial capitalism was an enormously progressive development in human affairs, and he praised its achievements lavishly. But this vast potential was blocked by the fatal flaws of capitalism—private property, growing inequalities, bitter class conflict, worsening cycles of economic expansion and recession, competitive and individualistic values. Such societies, Marx believed, would self-destruct in a vast revolutionary upheaval, led by the factory working class (the proletariat), which was impoverished and exploited by the capitalist system. Then the vast productive possibilities of modern economies would be placed in service to the whole of society in a rationally planned and egalitarian community, bringing an end to class conflict, to national rivalries, and to the endemic poverty and inequalities of the past. This was socialism, and to Marx it marked the end of the sorry history of endless class struggle and opened the way to a bright and creative future for humankind.

Socialist Movements

Marx's ideas inspired socialist movements of workers and intellectuals amid the grim harshness of Europe's industrialization in the second half of the nineteenth century. Socialists established political parties in most European states and linked them together in international organizations. These parties recruited members, contested elections as they gained the right to vote, agitated for reforms, and in some cases plotted revolution. While established elites felt



An engraving of Karl Marx, whose writings provided the foundation for nineteenth-century socialist movements and twentieth-century communist regimes. Library of Congress.

enormously threatened by socialist movements, nowhere in the most advanced capitalist countries of England, Germany, France, or the United States did Marx's predicted revolution occur. Through democratic pressures and trade unions, workers gradually raised their standard of living while the beginnings of "welfare state" reforms softened the harsh edges of capitalism. Marx had not appreciated this capacity of capitalist societies to reform themselves. Furthermore, nationalism drew the loyalties of workers to their own countries rather than to the international working class, as Marx had imagined.

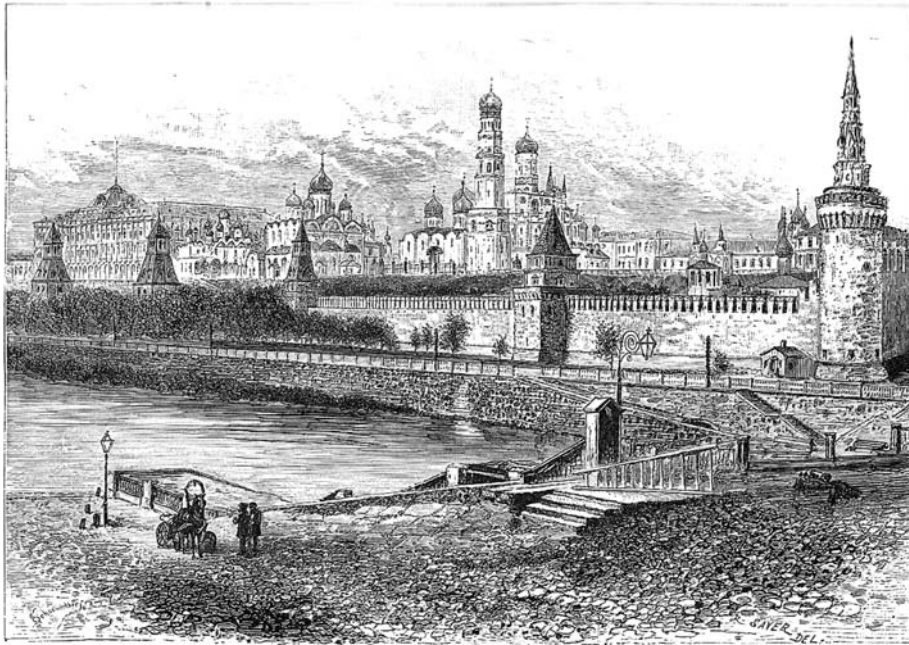
Socialist revolutions did occur in the twentieth century, but in places where Marx would have least expected them—in a Russian Empire just beginning to industrialize when the Communist regime came to power in 1917, in backward and impoverished China (1949), in a Cuba dependent on sugar production in 1959, and in Vietnam, which was emerging from

French, Japanese, and American imperialism at the end of the Vietnam War in the mid-1970s. In these countries, revolutionaries called themselves "Communists," to distinguish themselves from "social democrats" in the West who still continued to struggle peacefully through political processes. After seizing power, these Communist revolutionaries sought to "build socialism," which meant creating modern societies that were distinctly different from their capitalist counterparts. The Soviet Union under Joseph Stalin (ruled 1929–1953) and China under Mao Zedong (ruled 1949–1976) represent by far the most important examples of this process.

Putting Marxism into Practice

The first step involved the ending of old inequalities. Wealthy landowners had their property expropriated and distributed to the peasants. In China, teams of young revolutionaries were sent to the country's many villages, where they mobilized local peasants to confront landlords, to seize their property, and, not infrequently, to kill them. Privately owned industries were nationalized without compensation to their owners. Communist governments in both countries took immediate steps to guarantee equal rights for women within marriage and in public life, ending the legal disabilities that they had long suffered.

Since the Soviet Union and China were overwhelmingly agricultural societies, creating socialism in the countryside was a priority for both of them. The distribution of land to the peasants, although revolutionary, was hardly socialist because it left both countries with large numbers of small privately owned family farms. To Communist leaders, this was neither modern nor efficient, and it opened the door to a revival of capitalism and rural inequality as some farmers prospered while others became impoverished. The solution in both the Soviet Union in the late 1920s and early 1930s and China during the 1950s lay in large collective farms in which land, animals, and tools were held in common. The process of enlisting peasants into these collective farms unfolded with great violence and amid much resistance in the Soviet



The Kremlin, shown here in the 1880s, became the primary symbol of the Soviet Union in the twentieth century.

Union and was accompanied by a horrific famine caused by the heavy demands of state authorities for grain. The Chinese Communist Party, with deep roots in the rural areas, accomplished basic collectivization much more peacefully, though there too an enormous famine broke out in the late 1950s, when Mao Zedong pushed for even larger collective farms, known as communes, and for a more complete social equality. In both countries, the agricultural sector grew only slowly as it served to subsidize massive industrialization programs.

Communists everywhere were modernizers, intent on creating industrial societies. Furthermore, they argued that they had found a superior path to industrialization that would avoid the exploitation, instability, and inequalities of capitalism. The key to Communist industrialization was state ownership and planning. Under a series of five year plans, Communist planners decided where factories and mines would be located, what they would produce and in what quantities, where they would find their supplies, to whom they would sell their products, and at what price. After a fashion, it worked! Industrial growth rates in both the Soviet Union (1930s) and China

(1950s) were extremely rapid. The USSR in particular became a fully industrialized society in little more than a decade, strong enough to out-produce and defeat the Nazis in World War II.

But Communist industrialization also created a new elite of managers, bureaucrats, and technical experts who gained privileged positions in society, thus undercutting the supposed egalitarianism of socialist societies. While Stalin largely accepted these inequalities as temporarily necessary for modern development, Mao Zedong was increasingly troubled by them and launched repeated campaigns to root out materialism, self-seeking, and feelings of superiority in China's official elites.

Among the unique features of Communist societies was the extent to which party and state authorities penetrated and controlled the society. Since agriculture was collectivized and industry nationalized, virtually everyone was employed by state. Furthermore, the leaders of the Communist Party established the policies that the state bureaucracy was supposed to implement. Education served as a major vehicle for inculcating the party doctrines and Marxist thinking into the population. Organizations catering to the



interests of students, women, workers, and various professional groups were all controlled by the party. The multitude of private voluntary organizations that characterize democratic capitalist societies had no counterpart in Communist countries.

The Search for Enemies

But the Communist societies of the Soviet Union and China were laced with conflict. Under both Stalin and Mao, those conflicts erupted into a search for enemies that disfigured both societies. In the Soviet Union that process culminated in what became known as the Terror of the late 1930s, which affected tens of thousands of prominent Communists, including virtually all of Lenin's top associates, and millions of more ordinary people. Based on suspicious associations in the past, denunciations by colleagues, connections to foreign countries, or simply bad luck, these people were arrested, usually in the dead of night, then tried and sentenced either to death or to long years in harsh and remote labor camps known as the Gulag. Close to a million people were executed between 1936 and 1941. Perhaps four or five million more were sent to the Gulag, where they were forced to work in horrendous conditions and died in appalling numbers. Victimizers too were numerous as the Terror consumed the energies of a huge corps of officials, investigators, interrogators, informers, guards, and executioners.

While the search for enemies in the Soviet Union occurred largely in secret and under the clear control of the state, in China it became a much more public process, particularly during the Cultural Revolution of 1966–1969. Mao became convinced that many within the Chinese Communist Party itself had been seduced by capitalist values of self-seeking and materialism and were no longer animated by the idealistic revolutionary vision of earlier times. And so, he called for rebellion against the Communist Party itself. Millions of young people responded and, organized as Red Guards, set out to rid the country of those who were “taking the capitalist road.” The outcome was chaos and violence that came to the edge of civil war,

and Mao found himself forced to call in the military to restore order and Communist Party control. Both the Soviet Terror and the Chinese Cultural Revolution badly discredited the very idea of socialism and contributed to the ultimate collapse of the Communist experiment at the end of the century.

The End of the Communist Experiment

The demise of world Communism was both rapid and largely unexpected, and it occurred in various ways. In Eastern European countries, where Communist governments had been imposed by Soviet military force after World War II, popular movements in 1989 swept away despised governments with stunning rapidity. The dramatic breaching of the Berlin Wall, which had long separated East and West Berlin, became the enduring symbol of these movements. In the USSR, Mikhail Gorbachev's efforts to reform Communism (1985–1991), reducing state control over the economy and permitting unprecedented freedom of expression, backfired badly. His reforms sent the economy spiraling downward and stimulated nationalist and anti-Communist movements that led to the complete disintegration of the country itself in 1991 and the repudiation of its Communist Party. In China, the Chinese Communist Party retained power but abandoned many Communist economic policies during the 1980s and 1990s, such as ending collectivized agriculture, and began to permit massive foreign investment and allow many private or semiprivate businesses to operate freely. These reforms sparked an enormous boom in the Chinese economy that contrasted sharply with the economic disasters that accompanied the disintegration of the Soviet Union.

Scholars continue to debate the reasons for the quite sudden end of the Communist era in world history. In large measure, the fundamental failure of Communism was economic. By the 1980s, it was apparent that the economies of major Communist countries were stagnating, clearly unable to compete effectively with the more dynamic economies of the capitalist West. This perception drove the reform process in both the Soviet Union and China. A further

Of course, we do not want socialism in Latin America to be an imitation or a copy. It must be a heroic creation. We must inspire Indo-American socialism with our own reality, our own language. That is a mission worthy of a new generation. • José Carlos Mariátegui (1894–1939)

factor was the erosion of belief. An earlier idealism about the potential for building socialism had largely vanished amid the horrors of Stalinism and Maoism, replaced, especially in the USSR, by a self-seeking cynicism.

The collapse of Communism, like its revolutionary beginnings, had global implications. It marked the end of the Cold War, which had dominated international life in the second half of the twentieth century and had threatened a nuclear holocaust. As the bipolar structure of the Cold War era faded away, the United States emerged as the world's single superpower, bringing with it new charges of an American global empire in the making. Furthermore, the end of Communism signaled the closure of a century-long global debate about socialism and capitalism as distinct and rival systems. Market economies and capitalist ideologies had triumphed, at least temporarily. In Eastern Europe and more tentatively in the former Soviet Union, the demise of Communism also allowed the flowering of more democratic political systems. Despite the continued dominance of Communist parties in China, Cuba, Vietnam, and North Korea, expectations of a socialist future had largely disappeared everywhere and the Communist phenomenon in world history had ended.

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See also Cold War; Comintern; Europe, Eastern; Lenin, Vladimir Ilyich; Marxism; Revolution—China; Revolution—Cuba; Revolutions, Communist; Russian Soviet Empire; Stalin, Joseph

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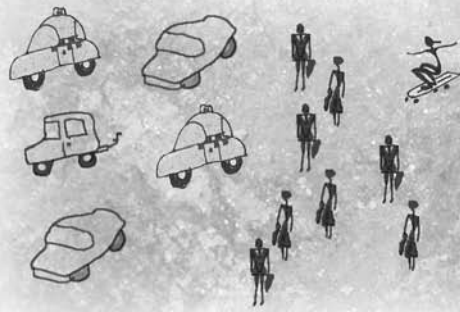
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Comparative History

The comparative historical method, first introduced by the French scholar Marc Bloch, stresses the idea of a common universal history among even the most unrelated of societies. For example, although a revolution arises out of a distinctive historical situation, revolutions in general share certain traits that account for their dramatic political changes. This method requires historians to take a more global approach to their work.

Many modern historians rooted in their fields of time and place defend the uniqueness of the events, institutions, and processes they study. Sometimes they neglect to recognize, however, the ways in which their explanations and interpretations depend on principles of understanding that connect what they see in their particular cases to other phenomena. The uniqueness asserted by historians is often of a phenomenon that is itself broken down into parts that we understand because they resemble familiar ideas and practices from other times and places. The explanations and interpretations in all case studies depend in various ways on certain general principles that are themselves distilled from comparisons among other historical experiences. Comparative history, a field that focuses mostly on relatively recent history (i.e., beginning about 1500 CE), involves more explicit comparison, one that consciously identifies both similarities and differences.

The European Context

One of the first historians in the twentieth century to stress the importance of the comparative historical

method was Marc Bloch, the great French scholar of medieval and early modern Europe. In an essay entitled “A contribution towards a comparative history of European societies,” published in 1928, Bloch identified two main contexts in which comparisons are an important tool for historians. First, he noted that in widely separate places in early history there seemed to be similar practices among what he called “primitive peoples.” Studies of early cultures conducted in the 1920s interpreted such similarities as signs of a common universal history. The second context for using a comparative method, and the one to which he devoted most of his attention, involves areas close to one another where mutual influences or common origins for ideas and institutions are obscured by linguistic differences and national historiographical traditions. Bloch argued that the study of feudalism and manorial organization, for example, must span Europe generally rather than just one European nation, since the similarities and differences among practices suggest a range of related practices common to many places. According to this view, focusing only on French or German cases might lead the researcher to look for local explanations for practices that in fact were the result of more widely applicable factors in European society.

In another essay, “A Problem in Comparative History: The Administrative Classes in France and Germany,” also published in 1928, Bloch analyzes feudal political relationships and uncovers both similarities and differences, in the process identifying what he considers features of German law that are significantly different from other legal systems in central and eastern Europe.

The Global Context

More recent scholarship on both political and economic history has employed comparative methods to analyze historical change within Europe and on a more global scale. Some scholars have looked at particular categories of complex events, like revolutions. Theda Skocpol's widely read *States and Social Revolutions* (1979) presents a series of similarities and differences among the French, Russian, and Chinese revolutions to argue that revolutions, although each arises out of a distinctive historical situation, share certain traits that account for their dramatic political changes. Another text, Jack Goldstone's *Revolution and Rebellion in the Early Modern World* (1991) identifies a series of common problems in England, France, China, and the Ottoman Empire that create similar crises from which emerge distinct patterns of rule. Large revolutions are few in number, and plausible comparisons are therefore limited. Larger numbers of comparisons become possible when political changes more generally are studied.

Charles Tilly (1975, 1992) explains the formation and transformation of European states since roughly 1000CE according to the relative abilities of rulers to amass resources and make war. Beginning amid a tremendous diversity of political units, in Tilly's account, some states stress mobilizing commercial revenues while others are better able to build armies by taxing the land. By the seventeenth and eighteenth centuries, the most successful states are those that can both gain wealth and monopolize the use of force. Tilly's work suggests variations among European states in a dynamic process of political transformations.

Another influential approach to the formation of modern states highlights the changing bases of political authority in societies with hereditary rulers and in societies in which rulers appeal to their subjects for legitimacy. Reinhard Bendix (1978) has studied changing authority relations between states and subjects as the key axis along which to observe the turn toward modern states in which people achieve popular sovereignty. Like Tilly, Bendix portrays variations among countries that all undergo parallel

processes of political change. Both scholars also recognize connections among their cases: Tilly's polities are all part of a larger European state system, and Bendix tracks the spread of ideas and institutions basic to modern states from their points of origin to other places. Bendix's approach takes him beyond his European cases of England, France, Germany, and Russia: he analyzes Japan as an example of a country to which political concepts first forged in Western Europe subsequently spread.

In contrast to studies that remain within Europe or explore the export of practices from the West to other regions, Victor Lieberman (1997, 2004) has suggested that similar processes of change were taking place between the mid-fifteenth and mid-nineteenth centuries across the East–West divide; he compares Burma (Myanmar), Siam (Thailand), and Vietnam with France, Russia, and Japan, arguing for similar processes of political, economic, and cultural changes in each case. Lieberman's identification of parallel dynamics of political and social change within and beyond Europe has been an important contribution to reframing the discussion about European historical change.

Complementing Lieberman's insights is another approach to the particularities of European state formation that contrasts the European examples with the dynamics of political evolution in another major political system, the Chinese agrarian empire. R. Bin Wong has shown that the challenges faced by state-makers in Europe were in many ways distinct from those confronting Chinese rulers. According to Wong (1997, 2002), the responses to these challenges were influenced in Europe by the claims elites could make upon their rulers, whereas in China they were guided by the common commitments rulers and elites made to sustain social order.

Overseas colonial empires represented yet another kind of state that defined a set of relations between a metropole and its periphery. Nineteenth-century colonialism suggests a different way in which European states reached other parts of the world: not as the benign purveyors of political principles and models of government, but as overlords who divided



up large parts of Africa and Asia as an extension of state competition in Europe. According to Lauren Benton (2002), these competing colonialisms produced a range of similar developments, including the introduction of various forms of pluralism as a means to accommodate cultural differences—sometimes in ways that led to an acceptance of colonial rule in many nineteenth-century colonies.

Learning from European colonization programs, the Japanese state began to build its own colonial empire in the late nineteenth century. The Japanese results, however, were different from the colonial empires of Western powers, which had their colonies spread over vast distances. The Japanese colonial empire, beginning with Taiwan and Korea and later Manchuria, was viewed by many in the Japanese government as a tightly knit regional political and economic order designed to support Japan and secure it from threats posed by Western powers. From an east Asian perspective, the Japanese Empire represented the creation of a new kind of political order replacing the much looser symbolic order of tributary relations centered on the agrarian empire. In place of ritual presentations of tribute and commercial exchanges under the tributary order, colonial empire imposed legally defined and bureaucratically organized control over subject populations who were subjected economically to extractive and unequal relationships to the colonizer. Both Chinese agrarian empire and Japanese colonial empire differed from European empires in two ways—first, Europeans competed with each other and divided territories among themselves in different world regions; and second, the distances from imperial center to periphery were far longer for Europeans than in East Asian cases. Neither the Chinese world order nor the Japanese colonial empire that succeeded it were simply subordinated to a Europe-centered system of international relations; rather, a unique and evolving system of regional political relations persisted among East Asian states even as they became more connected to the powerful political and economic system centered on both sides of the Atlantic. Such hemispheric distinctions suggest that interpretations of modern political change as exclusively or even primarily the

expansion of a Western system of international relations are incomplete and misleading.

Assessing the Europe-Centered Approach

These interpretive difficulties notwithstanding, much influential work in world history has been done by tracing the expansion of European power across the globe—in fact, historians have tended to view nineteenth- and twentieth-century international relations as the most recent chapter in a story of Western political and economic domination. Most all interpretations of large-scale changes largely build upon directly or indirectly the work of Karl Marx and Max Weber. The systemic features of this European expansion form the basis of Immanuel Wallerstein's modern "world-system" (1974, 1980, 1989). Wallerstein's seminal work, inspired by Marxist insights, makes brief comparisons between the international system centered on the European world from the sixteenth to the mid-nineteenth centuries and systems in place elsewhere in the world, before asserting that by the end of the nineteenth century, any fundamental East-West distinctions were subordinated to what had become the modern, Western-dominated world-system. Therefore, most analyses inspired by Wallerstein's work focus on the Europe-centered system and its expansion, without much attention to the dynamics of change within other systems.

Part of the intellectual foundation of Wallerstein's world-system is the work of French historian Fernand Braudel, one of whose major studies, the three-volume *Civilization and Capitalism: 15th–18th Century* (1992), identifies the distinctiveness of European capitalism through comparisons with merchants and markets in different parts of Asia. Such comparisons follow a long tradition of efforts by seminal thinkers to explain the distinctiveness of Europe and its patterns of political and economic transformation by identifying contrasts with non-European parts of the world. In the nineteenth century most observers, including revolutionary figures like Karl Marx, believed that outside Europe lay stagnant societies with unchanging economies. Most educated

Westerners exposed to cultures in Africa and Asia regarded these places as inferior to the West; while some were recognized as descendants of great and powerful ancient civilizations, on the whole they were seen as shallow and broken remnants of their past greatness.

Max Weber, the early-twentieth-century master of historical comparisons, looked to religion and ethics as the arena in which different attitudes toward money and markets took shape. He noted that in the Christian West, these attitudes formed in a way that led to the rise of capitalism, while in other religious traditions they did not (1958). Weber's famous observations about a "Protestant work ethic" have been qualified, however, by more recent scholarship documenting what appear to be functionally similar beliefs in other religious traditions (e.g., Bellah 1957; Rodinson 1974). Comparisons of a broader and more general kind between Europe and other parts of the world have continued to highlight differences, whether formulated within a clear Weberian framework (Hall 1985) or presented in a more ad-hoc and storytelling manner (Landes 1998).

Marxist interpretations have also argued for distinctive European political and economic practices, as shown in two influential works of the 1970s. Perry Anderson's two-volume study of European state formation, *Passages from Antiquity to Feudalism* and *Lineages of the Absolutist State* (1974), went back to classical antiquity to give a long-term view of how absolutist states were formed centuries later; his appendices on China, Japan, and the Ottoman Empire reviewed much of the available research to suggest how a Marxist analysis of these cases could be fashioned to complement what he had done for Europe. Robert Brenner also wrote an influential study comparing English agrarian social relations with those on the European continent (1976); he argued that it was English social relations that made possible increased agricultural productivity and surpluses that financed the formation of commercial capitalism. After his conclusions were challenged by English, French, and Dutch data, Brenner shifted his arguments from class relations to the late medieval state (1982) and later to an explanation specifically of

Dutch materials (2001). More recently, in work with Christopher Isett (2002), Brenner has returned to his initial formulation about agrarian class relations and gone well beyond Europe to look at an economically active part of eighteenth-century China, attempting to argue that differences in social relations cause differences in agricultural productivity.

The Brenner-Isett effort is part of a debate with Kenneth Pomeranz over explaining what the latter has called the "great divergence" between Europe and the rest of the world (Pomeranz 2001). Pomeranz shows similarities in the performance of the advanced agrarian economies in Asia, especially China, and in Europe; in order to explain the subsequent divergence in economic fortunes, he stresses Europeans' economic gains, especially in terms of resources, from the particular ways in which they developed production in the Americas. On the other hand, where Brenner and Isett affirm different agrarian social relations as basic to differences in trajectories of economic change, David Landes stresses what seem largely cultural factors. Together Brenner, Isett and Landes affirm the continued contemporary appeal that the ideas of Marx and Weber have for historians who make broad comparisons among large parts of the world.

A distinct addition to these comparisons is highlighted by Andre Gunder Frank, who aggressively argues (1998) for connections among the world's economic regions and asserts that China was at the center of the world's economy between 1500 and 1800, taking in large amounts of silver to fuel its expanding commercial economy. In contrast, R. Bin Wong suggests that the economic links made possible by the silver trade did not encourage the kinds of division of labor and movements of capital and labor that would come to characterize international trade after the mid-nineteenth century; he argues that a comparison of the early modern world economy with what follows offers important differences as well as parallels (Wong 2002).

Beyond the East–West Divide

Many uses of the comparative method in historical studies occur across the East–West divide of Eurasia.

But there have also been comparisons that set this vast land mass off from still other continents. The anthropologist Jack Goody has argued that societies across Eurasia, from Japan to England and most points in between, shared structurally similar kinds of kinship systems, demographic regimes, and social structures. For him the major divide globally is between Eurasia and sub-Saharan Africa, where kinship and social structures differed from those of Eurasia largely due to small populations relative to land and the implications of this situation for techniques of economic production and social control (1971, 1976). Within this broad framing he has repeatedly criticized ideas about European uniqueness (1990, 1998).

Jared Diamond has drawn a related contrast between Eurasia and other continents in *Guns, Germs, and Steel* (1997), suggesting that Eurasia had a geography well-suited to farming and animal domestication; this in turn supported more densely populated areas where more complex governments, sophisticated systems of communication, and increased resistance to diseases all developed. Diamond has very little to say, however, about the causes of variations within Eurasia, the terrain across which historians making comparisons have usually moved. The great sweep of Diamond's history across space and through time depends on some basic comparisons between environmental and biological traits of Eurasia and other continents. Many books on environment and biology in world history, like Alfred Crosby's *Ecological Imperialism*, stress connections made by European expansion rather than comparisons among different cases. Yet, common themes in environmental history can be seen through comparisons, as John Richards demonstrates in *The Unending Frontier* (2003). This history of the environment of the early modern world includes comparisons of agricultural settlement patterns on Taiwan, mainland China, and Russia; land use patterns in the Americas; and the hunting and fishing industries.

Comparative methods have been used implicitly or explicitly in historical studies for a long time. Explanations and interpretations of a particular phenomenon depend on comparing the case at hand

with more familiar examples of the same or at least similar phenomena. Among historical works that are explicitly comparative, certain European experiences have often been taken as a benchmark against which to measure performance elsewhere. Whether Marxist or Weberian, this approach has motivated the search for similarities and differences between European patterns of political, economic, and social change and those in Africa, the Americas, and Asia. Many such efforts stress the differences that make Europe the historical paradigm, while others argue, in a related fashion, that historical change elsewhere in the world influenced by European principles and practices tends to result in comparable outcomes. Critics of what is usually a cheerful view of convergence often contend that Western expansion has been destructive, putting many populations into subordinate economic and political conditions. Yet, many recent historical comparisons have also moved beyond simple dichotomies, highlighting in more nuanced ways both similarities and differences and the way they interact to produce unique historical outcomes.

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Mankind are so much the same, in all times and places, that history informs us of nothing new or strange in this particular. Its chief use is only to discover the constant and universal principles of human nature. • **David Hume (1711–1776)**

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Confucianism, based on teachings of the Chinese philosopher Confucius (551–479 BCE), has inspired philosophers and statesmen for more than 2,500 years. It stresses the importance of education for moral development—humane relationships, good intentions, and decorum, as well as loyalty and trustworthiness—so that rulers can govern the state according to virtue rather than coercive laws.

Confucianism, a social and ethical philosophy rather than a religion, originated with Confucius (551–479 BCE), whose name represents a Latinized version of the title Kong Fuzi (Kong the Grand Master). With Daoism and Buddhism, it was one of the three ways of thought in traditional China. The era in which Confucius lived was one in which other major philosophers and founders of religious traditions also lived, including Siddhartha Gautama (the Buddha, c. 563–c. 483 BCE) in India, Zoroaster (c. 628–c. 551 BCE) in Iran, the Hebrew prophets in Palestine, and Thales (627?–547 BCE.) in Greece. He shares with these figures the role of defining the classical heritage of the subsequent civilizations in those regions. In response to conditions of large-scale warfare, diasporas, and rapid social change, all five eras produced humankind's first conscious responses to factors of global impact. The responses were ethical in nature and shared a human-centered belief in the human ability to forge new answers. The parallelism of developments in these five areas, constituting as it does a distinctive world epoch (which the philosopher Karl Jaspers called the Axial Age) intrigues the historical imagination to this day.

Early Confucianism

Confucius first sought ministerial rank in Lu, one of numerous states constituting a not-yet-unified China. Failure at that turned him toward teaching. It is as a teacher that he was remembered, and a philosophy of statehood (sponsored by the state) formed around his teachings. He initiated three traditions: teaching any who would learn (the democratic temper), being a private teacher (education for its own sake), and valuing the transforming influences of history, arts, letters, and music (liberal education).

Confucius wrote no books, but his teachings are gathered in the *Analects* (*Lunyu*), a collection of 479 sections of sayings attributed to him by three generations of students and disciples. Disparate in subject, timeframe, and personal nuance, the work is unified by the fact that all its utterances have to do with Confucius. This work stands at the center of the Confucian tradition, not only in China but in the entire eastern Asian context. The seventeenth-century Japanese Confucian thinker Ito Jinsai called it the most profound book in the universe.

Basic Principles

The three principal ideas in the *Analects* are *ren*, *yi*, and *li*. *Ren* means interpersonal humane regard, from which flows the entire Confucian social philosophy, in which a person sees his or her own humanity in another person. *Yi* is the impulse to do the right thing, to be *ren*. *Li* (social ritual) is the composite of all decorum and manners from the mundane to the loftiest of rites, the outward manifestations of *ren* and *yi*. These qualities underlie the Confucian interpersonal



A carved stone guard at the Temple of Confucius at Qufu in Shandong Province, the legendary birthplace of Confucius. Photo by Joan Lebold Cohen.

philosophy, and, along with the important qualities of trustworthiness (*xin*) and loyalty (*zhong*), give life to his view of state and society as consisting of the five cardinal relationships: ruler-ruled, father-son, husband-wife, elder brother-younger brother, and friend-friend. Confucius viewed the family as the microcosm of the state and the state as the macrocosm of the family. His philosophy is this-worldly. When queried about his view of religion and the spirits, he said, “Not yet serving humans, how can one speak of serving the spirits” (*Lunyu* [analects], *xianjin* [chapter]).

Mencius and Xunzi

Early Confucianism depended on the thinking of two other philosophers: Mencius (385–303/302 BCE) and

Xunzi c. 298–c. 230 BCE), disciples of Confucius who lived some two hundred years after the master. Each with a work carrying his name, the two propounded the idealistic and realistic tendencies, respectively, inherent in the master’s teachings. Both works are examples of elegant Chinese prose. Mencius argued philosophically that human nature was innately good. From this premise, the Mencian program for humanity valued persuasion over coercion, exemplary action over dictated rules, and moral factors over utilitarian motives. Mencius appreciated the people as arbiter of moral rule, and in a three-tier order of importance, ranked them above the agrarian economy and the ruler. From this ordering, subsequent generations derived justification for a right of the people to rebel.

Mencius’s contemporary, Xunzi, on the other hand, argued that human nature was rapacious and untrustworthy and that morality was acquired by imposing the strictest rules of decorum and control. Good action was to be ritually coerced. Xunzi’s teachings encouraged a view of Confucius as a transmitter of ancient norms rather than as a moral exemplar. This realistic strain of Confucianism lends encouragement to Legalism, another philosophy that flourished in China at this time. Legalism, however, demanded strict laws and harsh punishments without hesitation.

State Confucianism

With the Qin dynasty (221–206 BCE), China went from a multi-state arrangement of power based on private and personal loyalties to centralized, bureaucratic rule based on public law. With the changeover from the Qin dynasty to the Han dynasty (206 BCE–220 CE), early Han rulers looked for change from the brutal legalism on which the Qin was based. The first Han emperor (Han Gaozu, reigned 206–195 BCE), a powerful and illiterate wielder of power, had the acuity to ask the Confucian scholar Lu Jia (d. 170 BCE) to discourse on why the Qin failed and Gaozu had succeeded. Lu Jia presented him with twelve lectures (*Xin yu*, or New Discourses), the burden of which was that the Qin ruled with inhumanity and that



Gaozu could enjoy a long rule by observing moral scruples. In 195 BCE, Gaozu paid a ceremonial visit to the grave of Confucius, a symbolic union of brute power and Confucian reasoning. Another Confucian scholar, Jia Yi (201–168? BCE), was asked by the Han emperor Wen (Han Wendi, reigned 179–157 BCE) to propound on the same theme. Jia Yi's efforts (*Xin shu*, or New Writings) brilliantly discussed the faults of the Qin and a vast range of topics on the art of ruling. Thus Confucian ethics and moral behavior entered Chinese politics of state. The grand fusion of moral and political power came when Emperor Wu (or Han Wudi, reigned 140–87 BCE), listening to Dong Zhongshu (179–104 BCE), fully instituted Confucianism as a state religion. Dong's work (*Chunqiu fanlu*, or Luxuriant Dew of the Spring and Autumn Annals) expounded on the role of the scholar in government, whom he claimed was the only appropriate person—not the priest and not the people—to know the ways of heaven, earth, and man. Dong envisaged the ruler, advised by the scholar, as the link between those three realms. He incorporated ancient yin–yang thought (a system based on complementary opposites, as in positive-negative or male-female) into the emerging Han intellectual universe, giving Confucianism properties of a secular religion. The Chinese son of heaven (the emperor), as the first scholar of the land, from then on performed solemn Confucian rites of state. For the next two millennia, by virtue of such institutions as the civil-service examination system, censorial admonition, and imperial universities, the Chinese government fully deserved the adjective *Confucian*.

China after the Han was divided, politically and geographically. The north supported Buddhism, and the Confucian state could only survive in the south, and there only intermittently. China was reunited under the short-lived Sui dynasty (581–618 CE), which favored Buddhism. The Sui, which reunified China in the name of Confucianism, exhibited strong Buddhist features in its ideological outlook. For six hundred years, from the late Han to the Tang dynasty (618–907 CE), Buddhism and Daoism permeated Chinese life. Intellectual, aesthetic, and religious impulses

were greatly stirred by these two outlooks, which competed robustly with Confucianism. In those centuries, these three persuasions together shaped the eventual Chinese cultural outlook: Confucianism supporting a successful public life, Buddhism supporting a religious life of compassion, and Daoism satisfying a psyche freed for imaginative excursions. But in the late ninth century, with the success of the Tang state and government, attention was focused once again on Confucianism.

Neo-Confucianism

Beginning with such late Tang thinkers as Han Yu (d. 824) and Li Ao (d. 844), philosophical attention turned to human nature. Centuries of Buddhist and Daoist influences awakened within Confucianists an interest in the languages of metaphysics and metempsychosis (the movement of the soul after death into a new body). A series of thinkers appeared during the Song dynasty (960–1279) to take up the task of explaining the universe, a task that had hitherto been the province of Buddhism and Daoism. Song thinkers like Zhou Dunyi (1017–1073), Shao Yong (1011–1077), Zhang Zai (1021–1073), the brothers Cheng Yi (1033–1107) and Cheng Hao (1032–1085), Lu Jiuyuan (1139–1193), and finally Zhu Xi (1130–1200) excited their age with intellectual vigor and perspicacity. Two schools emerged in Neo-Confucianism. One, the Cheng-Zhu named for Cheng Yi and Zhu Xi, who did the most for it, saw a phenomenal world of disparate objects and appearances, which they labeled *qi* and a noumenal world of ultimate organizing principles (*li*) behind the *qi*. The other school (*xin*), led by Cheng Hao and Lu Jiuyuan, viewed the universe as a organism, whole in itself, with the organizing principle of *qi* (matter-energy or mind; a different word from the previous *qi*) explaining micro- and macrolevels of human existence. The first school propounded a dualism that explained the seeming disparities between phenomena and their ultimate principles; the latter dispenses with the dualism and offers the mind, or matter-energy, as the means of uniting the knower and the known, thereby stressing human intuitive

Hold faithfulness and sincerity as first principles. • Confucius (551–479 BCE)

faculties. The two schools are known also as the *li* (principle) and *xin* (mind) schools.

Song philosophical efforts imbued Confucianism with metaphysics and a way to explore one's mind and psyche. Buddhist and Daoist influences ebbed, and Neo-Confucianism supported Chinese state and society for the next seven hundred years. Metaphysics and metempsychosis, however, were not the real goal of this Confucian revival, which aimed primarily at appropriating elements of Buddhism and Daoism to buttress its emphasis on human ethics. Using the new dualism, Neo-Confucianism could now point to individual human nature (*qi*) and ideal human nature (*li*), thus exhorting moral action throughout Chinese society toward higher ideals. Chinese society at all levels—whether manifested in village rules or in the imperial civil-service examinations, and in all intellectual endeavors, whether literary composition or historical inquiry—now emulated a Confucian norm. Thus, while Neo-Confucianism was dynamic in the making, it produced subsequent centuries of intellectual, ideological, and pedagogical formalism in China, and its influences were pervasive in Korea, Vietnam, and Japan.

Modern Fate and New Confucianism

As China met the onrush of modern civilization from mid-nineteenth century on, Confucianism came under attack for having supported the entire Chinese body politic and social hierarchy. Intellectuals such as Hu Shi (1891–1962), Chen Duxiu (1879–1942), Wu Yu (1872–1949), and Lu Xun (1881–1936) called for its abolition, chanting “Crush the Confucian Establishment (*Dadao Kongjiadian*)!” and hailing “Science” and “Democracy.” This iconoclasm produced in reaction a twentieth-century neo-traditionalism, nurtured by the call of Zhang Zhidong (1837–1909) in 1898, when China was at the nadir of national strength in face of foreign encroachments, to preserve Chinese culture for substance (*ti*) and exploit Western culture for application (*yong*). While the logic of this saying is faulty in reserving for one culture only morality and for another only instrumentality, it was

eminently satisfying emotionally. Chinese who feared and bewailed the passing of Confucian efficacy embraced the sentiment. Thinkers in the twentieth century such as Liang Soumin (1893–1988) and Xiong Shili (1884–1968) constituted the first generation of the New Confucianism (*Xin rujia*).

After 1950, a second generation of New Confucianists arose in Hong Kong in contradistinction to intellectuals both on the Communist mainland and in Nationalist Taiwan. Amidst manifestos and educational endeavors, scholars such as Tang Junyi, Xu Fuguan, and Mou Zongsan envisaged a new Confucian synthesis combining Confucian moral life with Western modes of living. Their message brought forth a third generation of intellectuals, mostly university professors who wrote in the public sphere from the 1970s. This trend coincided and sometimes coalesced with the rise of an enthusiastic belief that Confucianism was compatible with capitalism. Economic leaps in Korea, Taiwan, Singapore, Hong Kong, and Japan—all nations historically touched by Confucianism—gave them the sobriquet of tigers or dragons of capitalist success. The position was that they were successful capitalist economies *because* of Confucianism. Whether mainland China for two millennia did not develop capitalism *in spite* or *because* of Confucianism has not been satisfactorily answered by the claimants. The bursting of the economic bubble in the late 1990s somewhat shook their faith in this belief.

As modern society's rampant individualism has taken its toll on the collective conscience, New Confucianism has gained adherents who defend its collective ethic against individualism and debate its merits with proponents of individualistic human rights. The debate continues.

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See also Confucius; Mencius; Philosophy, Asian

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Confucius

(551–479 BCE)

CHINESE TEACHER AND PHILOSOPHER

The sayings of Confucius taught millions of Chinese how to lead a good life; they affected Chinese society for more than two millennia as strongly as revealed religions did elsewhere. But Confucius claimed no special knowledge of the supernatural, emphasized everyday human relations, and wished only to preserve ancestral ways. No other civilization relied so completely on merely human authority.

Confucius, or Kongzi as he is known in Chinese, was an itinerant scholar, teacher, and sometime minor official in his home state of Lu during the latter part of the Zhou dynasty (1045–221 BCE), when the Chinese culture area was divided into a large number of competing states.

The very limited success he had as a political and moral reformer in his own lifetime contrasts sharply with the enormous influence his teachings had in future centuries, not only as the philosophical basis for official government doctrine and basic social morality in the unified Chinese Empire after the second century BCE, but also in the surrounding area of Chinese cultural influence, notably in Korea, Vietnam, and Japan.

After the establishment of systematic contact with Europe in the seventeenth century, he became a world figure under the Latinized version of one of his honorific names in China, Kong Fuzi (Kong the Grand Master). Europeans saw in Confucius a distant inspiration and corroboration for the rational humanism of the Enlightenment. More recently, with a new wave of Confucianism carrying the sage to academies, classrooms, and business schools in the West, he has become both an Eastern contributor to global cultural

synthesis and the presumed root cause for the cultural dynamic behind the so-called east Asian economic miracle of the late twentieth century.

Clearly these later reincarnations relate more to Confucianism than to the historical person, but however much they partake of the spirit and historical needs of later times, Confucius, the very human, nonmessianic man of the fifth century BCE, is the starting point.

There is an enormous amount of lore and legend about Confucius's life, but most of it is historically unreliable. The contemporary textual evidence is limited to quotes from the Master and anecdotes about his life that were compiled by his students into a fairly short book, the *Lunyu*, or *Analects*. Less reliably, his thought may also be reflected in a history of his home state of Lu, the *Chunqiu*, or *Spring and Autumn Annals*, which he allegedly authored, and in several early Zhou dynasty (1045–256 BCE) texts which, because of his supposed editorship, became known as the Five (Confucian) Classics.

Certainly these earlier texts, five centuries old in Confucius's time, influenced his thought. He was a self-professed traditionalist, holding up the supposed unity and virtue of the early Zhou dynasty and its de facto founder, the Duke of Zhou, as models for Confucius's own dissolute time of constant interstate warfare and a disintegrating social order. On that point, it is important to note that Confucius came from a social stratum that had fallen from its original position as a warrior aristocracy to become scribe-like functionaries for the increasingly powerful independent states of the later Zhou period. As ritual specialists based on their knowledge of the early Zhou texts, men of Confucius's class preserved and



Highly stylized wood engraving of Confucius. From *The Dragon: Image and Demon*, by Hampden C. DuBose. New York: A. C. Armstrong, 1887.

cultivated the cultural unity of China in a time of political disintegration. For Confucius, *li* (social ritual) was the essential civilizing basis for the social and political order; only through *li* could the individuals realize their basic humanity. The patriarchal nature of the social order embodied in *li* was taken for granted.

In all of this Confucius appears to have been a conservative or even reactionary thinker who wanted to go back to an idealized past in which members of an educated elite had both status and power. But a call to revive the past can be a charge to the present. In some ways, Confucius was a remarkable innovator.

First, there was his emphasis on morality and concern for the welfare of the common people, a theme

further developed by his most famous posthumous disciple, Mencius (or Mengzi, 385–303/302 BCE). Politically, this was expressed in the famous “Mandate of Heaven,” which made the ruler of “all under Heaven”—that is, of a politically unified Chinese culture area—responsible to a nonanthropomorphic supreme deity or cosmic principle (Heaven) for maintaining social harmony through non-selfish virtuous rule. Failure to do so could terminate a ruling house through the people’s exercise of the so-called right of rebellion, further explicated two centuries later by Mencius.

This was Confucius’s first check on tyrannical rule. The second, and ultimately more important, was his emphasis on cultivating knowledge and morality through education. Confucius fundamentally undermined the hereditary principle in a stratified society by taking poor as well as rich students. We can assume that his more impoverished students were the children of good families fallen on hard economic times rather than common peasants, but in the long run this practice of offering a literate, moral education to train people for political leadership laid the social foundation for the political order of imperial China. The ultimate product of such an education was the *junzi*, originally a term for hereditary noblemen, but for Confucius a term that signified an educated, cultivated, and morally centered “noble man.”

Confucius’s teachings, carried on and developed as the Ru school in the centuries after his death, were made the official doctrine of the imperial state during the Han dynasty (206 BCE–220 CE), partly as a backlash against the harsh absolutism of the short-lived Qin dynasty (221–206 BCE). Though much changed in subsequent periods, Confucius’s moral emphasis would form the basis for personal self-cultivation and social harmony in the world’s most enduring political structure and cultural formation—not a bad legacy for a frustrated politician turned teacher.

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See also Confucianism

Study the past if you would define the future. • Confucius (551–479 BCE)

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Congress of Vienna

The Congress of Vienna began in 1814, after Britain, Prussia, Russia, and Austria defeated the Napoleonic Empire and its allies. The series of meetings, meant to stabilize Europe, ended in 1815, with significant European territories under Prussian, Russian, and Austrian control, and control of shipping routes in the hands of the British.

The Congress of Vienna was a series of meetings involving most of the European heads of state held in Vienna, the capital of the Austrian Empire, between September 1814 and 9 June 1815. The purpose of the Congress was to redraw the map of Europe after years of chaos resulting from the Napoleonic and French revolutionary wars (1792–1814). Its proceedings were initially dominated by the four powers of the victorious allied coalition that had defeated Napoleon. Britain was represented by foreign secretary Viscount Castlereagh (Robert Stewart). Prussia was represented by foreign secretary and chancellor Prince Carl von Hardenberg, Russia by Czar Alexander I (1777–1825), and Austria by Prince Klemens von Metternich (1773–1859), who emerged as the architect of the Congress. The defeated French were represented by Charles-Maurice de Talleyrand (1754–1838).

Although Metternich acted as host, there was no formal opening of the Congress, and meetings began in September as delegations arrived. While the major states debated the key issues, delegates from lesser European states dealt with issues such as navigation rights and attended lavish receptions held by the Austrian government. The Congress dissolved after the signing of the Final Act, 9 June 1815.

Preliminaries

With his armies defeated, Napoleon Bonaparte resigned as emperor of France on 11 April 1814 and went into exile on the Mediterranean island of Elba. Allied armies occupied Paris and the prerevolutionary Bourbon dynasty was restored to the throne of France. Louis XVIII (brother of the beheaded Louis XVI) became king, with Talleyrand as foreign secretary. The four allies signed a peace treaty with the new French government on 30 May 1814 known as the First Peace of Paris. Under the terms of the treaty France's borders were rolled back to what they had been in 1792. The final clause in the treaty also specified that all states engaged in the current war should meet in Vienna to resolve outstanding territorial issues.

Territorial Arrangements

Metternich's major objective at the Congress was to ensure that France was surrounded by states strong enough to contain any future French attempts at expansion. Metternich wanted to create a balance of power in Europe that would maintain stability. The Congress of Vienna went on to formalize many territorial arrangements previously agreed upon by the four major allied states. The Kingdom of the Netherlands, which included Belgium and Holland, was created as a strong state on France's northeastern frontier. The Italian state of Piedmont-Sardinia played a similar role on France's southeastern frontier. In central Europe Napoleon's Confederation of the Rhine was abolished and replaced by thirty-nine German states grouped loosely together as the



Jean-Baptiste Isabey, *The Congress of Vienna* (1819). The Congress was convened to redraw the map of Europe after the Napoleonic and French Revolutionary Wars (1792–1814).

German Confederation, with its capital in Frankfurt. The Confederation included German-speaking areas of Prussia and Austria. It also superseded the three-hundred-plus German states that had existed under the auspices of the Holy Roman Empire prior to the French revolution. Prussia was given land on the west and east banks of the Rhine river in order to garrison an army that could march quickly on France in case of an emergency. Austria was meant to have the dominant role in the German Confederation and the Austrians were given presidency of the Confederation. Austria was also to be the dominant power on the Italian peninsula. Austria retained possession of the wealthy northern Italian province of Lombardy and was granted control over the neighboring and equally wealthy province of Venetia. Members of the Austrian royal family, the Habsburgs, were placed on most of the thrones of the remaining Italian states to ensure Austrian dominance and keep the French out.

The Congress recognized British possession of several important overseas territories conquered during the Napoleonic wars. Britain gained the island of Helgoland in the North Sea, Malta in the Mediterranean, the Cape Colony of southern Africa, the

island of Ceylon off India's southern tip, the islands of Mauritius, Seychelles, and Rodriguez in the Indian Ocean, and the islands of Saint Lucia, Trinidad, and Tobago in the Caribbean. Many of these possessions were economically lucrative and gave Britain control over key shipping routes.

The Congress acknowledged the status of Switzerland as an independent and neutral state. Finally, territorial changes were undertaken in Scandinavia. The king of Denmark, too long an ally of Napoleon, lost his possession of Norway to Sweden. Sweden, in turn, was forced to give Finland to Russia.

The Poland–Saxony Dispute

A disagreement over eastern Europe very nearly disrupted the Congress. Alexander I made clear that he wanted to gain control over all of Poland, including Polish provinces previously ruled by Prussia. By way of compensation, the Prussians were to be given the wealthy German kingdom of Saxony. The Austrians and British protested, fearing the growth of Prussian and Russian power in central and eastern Europe. The dispute soon escalated to serious proportions. Talleyrand saw an opportunity to split the victorious

alliance and regain French influence in Europe. He sided with the British and Austrians, and on 3 January 1815, the three powers signed a secret alliance. Each signatory pledged 150,000 troops in the event of war. However, Europe had suffered enough war and a compromise was found. Russia gained most, but not all, of Poland. Prussia gained about 40 percent of Saxony, with the rest remaining independent.

The Final Act and Long-Term Impact

In late February Napoleon escaped from exile and landed in France on 1 March 1815. Napoleon forced Louis XVIII to flee Paris, raised an army, and went to war again with the allies. However this had little impact on the Congress of Vienna. The Final Act was signed on 9 June, and Napoleon was defeated for the last time at the Battle of Waterloo on 18 June 1815.

Most historians agree that the Congress of Vienna created a durable peace in Europe. Although wars broke out among individual European states in the nineteenth century, there was no general war until 1914, a reflection of the fact that no one power left Vienna with unresolved grievances. Britain was arguably the big winner, having won dominance over shipping routes all around the globe, setting the stage for Britain's remarkable imperial expansion in the nineteenth century.

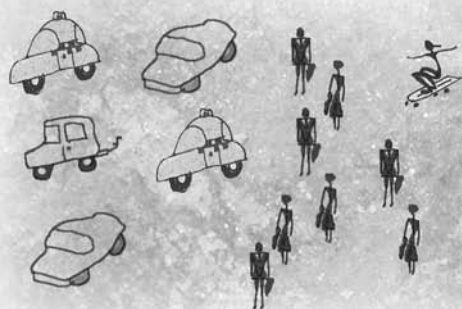
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See also Austro-Hungarian Empire; Napoleonic Empire





Constantine the Great

(REIGNED 306–337 CE)

ROMAN EMPEROR

In the fourth century Emperor Constantine favored Christianity over paganism in the Roman Empire by adding Christians to his administration, building churches, and raising his heirs as Christians. At the Council of Nicaea (325–326 CE) he defined “orthodoxy” by insisting on standardized beliefs and practices, and thereby pushed Christianity into a monolithic hierarchical autocracy that sanctioned the persecution of nonbelievers.

Though not baptized as a Christian until he lay upon his deathbed, for the bulk of his reign (306–337 CE), Constantine favored Christians. He promoted them into the imperial administration and gave them a variety of tax breaks and financial incentives (all to the disadvantage of members of other religions, notably the pagans); he presided over their Ecumenical Councils and settling doctrinal disputes among them (including the first state-sponsored persecutions of Christian “heretics”); and he restored and built churches (such as the original St. Peter’s in Rome and the Church of the Nativity in Bethlehem, both based on pagan examples such as the great temples of Artemis at Ephesus and Jupiter at Baalbek) that set the style for Christian architecture and iconography for nearly two millennia. But most important, he raised his sons—who reigned after him for another thirty years—as Christians, thus ensuring Christianity’s victory over paganism.

The son of the Western Empire’s ruler, Constantius Chlorus (reigned 305–306 CE), Constantine was acclaimed emperor by the legions in Eboracum (modern York, England) after his father’s sudden death. A series of civil wars ensued, ending with Constantine

in sole control of the empire by 324 CE. In 330 he founded a new—and overtly Christian—capital in the ruined city of Byzantium, renaming it “Constantinopolis” (Constantinople, now Istanbul) after himself, which proved strategically important; in fact, it protected medieval Christendom from Islamic conquest. In 337 on his way to attack the Persians, Constantine died of natural causes at about the age of fifty-two near ancient Nicomedia, and was buried as a Christian in Constantinople.

Though his mother (canonized as St. Helena) had long been a Christian convert, before the Battle of the Milvian Bridge (312 CE) Constantine and many of his soldiers seem to have been devotees of Mithraism, a pagan mystical religion associated with sun worship but holding some doctrinal and ritual similarities to Christianity, including the symbol of the cross. Accounts differ somewhat, but on the eve of battle with his rival Maxentius at the Milvian Bridge, Constantine claims that he saw a cross against a bright sun and the words “In hoc signo vincit” (“By this sign shall you conquer”). Instructing his soldiers to affix this cross symbol to their shields, Constantine won the battle—and the Western Empire.

Somewhat later, under the influence of his mother and her confessor, the Christian bishop Eusebius, Constantine became persuaded that his vision came not from Mithras but from Jesus Christ. The resulting Edict of Milan (313 CE) granted Christianity official toleration and marked the end of the pagan Roman Empire. Though Constantine’s vision has often been seen as a cynical ploy to gain Christian favor, the very small number of Christians in the empire, especially in the western half (about 5 percent of the empire’s overall population was Christian, and most of



Colossus of Constantine. The face of the colossus remains intact, but the rest of the statue is in fragments. Photo by William Vann (EduPic.net).

lived in the eastern half), suggests that the vision and conversion should be seen instead as a bit of clever politicking on the part of the then-persecuted Christians to gain favor, if not ascendancy, in the empire. In this Constantine did not disappoint.

Besides promoting Christians into all levels of the Roman administration, Constantine issued a variety of edicts and orders giving Christians financial rewards and legal immunities not enjoyed by others. He also prohibited gladiatorial games and animal

sacrifices, and in 330 CE, to finance the building of his new capital of Constantinople, ordered the ransacking of the pagan temples of their treasures—bronze doors, gilt idols, and even their gold-shingled roofs—which disastrously affected the pagan cause. He even engaged in the first persecution of non-Christians by Christians. Between this clear favoritism and instructing his children in the new faith, Constantine sent the message that the route to power, influence, and riches now lay through Christianity.



To his horror, Constantine found that rather than a universal monolithic hierarchy, the Christian “church” consisted of mostly independent house-churches loosely confederated with no standardized doctrine, ritual, or scripture. As reported by Eusebius, Constantine considered himself a bishop, a new kind of Christian pontifex maximus, or priest-king, charged with the protection and promotion of Christianity—an example followed by his successors for the next millennium and more. To this end, as soon as he gained control of the whole empire, he called Christian leaders to a council at Nicaea (325–326 CE), where his insistence on standardizing beliefs and practices defined “orthodoxy” and pushed Christianity into a monolithic hierarchical autocracy; his insistence on standardization also led to the first state-sponsored persecution of Christians (the “Donatists”) by Christians, setting yet another dubious example for his successors.

Constantine was both the best and the worst thing that ever happened to Christianity. Without him, Christianity would never have become the critical cultural, political, and religious force that it did, since nowhere has it become a majority religion without state-sponsored favoritism and persecution. Constantine’s insistence on hierarchical autocracy, an orthodoxy of ritual and doctrine, and the persecution

of nonbelievers ensured Christianity’s triumph (and some of its greatest crimes). It also laid the foundation for three critical events in European and world history—the Papal Revolution, the Crusades, and the Protestant Reformation. Without Constantine’s conversion, the modern world as we know it would not exist.

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See also Byzantine Empire; Roman Empire

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Consumerism

Although the consumption of luxury goods, such as textiles and jewelry, occurred among elites in societies from the earliest times, the spread of consumerism since the eighteenth century is considered a significant development in world history. This fascination with nonessential goods is in part a result of economic growth and prosperity as well as a shift away from nontraditional values.

Consumerism involves a devotion to the acquisition of goods not needed for basic, or even embellished, subsistence. It is further associated with a desire for novelty, even a commitment to faddism, rather than contentment with established styles sanctioned by tradition. The spread of consumerism, socially and geographically, is one of the most significant developments in world history over the past two to three centuries. Growing commitments to consumer culture represent not only a sign of economic change and growing prosperity, but also a significant shift in values.

Beginnings

Consumerism is not, of course, entirely modern. Elites in various societies indulged in aspects of consumerism from the advent of civilization if not before. Bursts of consumerism occurred, for example, at various points in Chinese history, as wealthy landowners and aristocrats built houses with showy furniture and fancy gadgets, and showed off a parade of eye-catching costumes. The passion of Roman elites for Chinese silks was an example of consumerism, and so was the domestic indulgence in jewelry common in wealthy

Muslim homes in the Middle East. As historians increasingly grasp the importance of interregional trade in premodern history, particularly by about 1000 CE, they also detail a growing array of consumer interests. Cotton cloth made in India, for example, with colorful designs, became extremely popular in Japan and other parts of eastern Asia, and ultimately in western Europe. Chinese porcelain gained widespread attention as an export item all around the Indian Ocean (and again, a bit later, in Europe).

There were, however, several constraints on consumerism in traditional societies. One was the poverty of the majority of the population, which precluded significant consumerist commitments. Even elites frequently shied away from full-blown consumerism, particularly in the sense of avid interest in novelty as opposed to established styles. Religious objections often surfaced, and many societies devoted surpluses to glittering religious expenditures more than personal consumerism. Many societies periodically enforced sumptuary laws, which punished displays that were nontraditional or that threatened established social boundaries. Leading consumerists in China were sometimes actually put to death by a government intent on maintaining traditional styles and values. Consumerism, in other words, was not an automatic result of wealth.

Modern Consumerism

Until fairly recently, historians treated consumerism (if they paid any attention at all to what was sometimes seen as a frivolous topic) as a result of industrialization. As output and living standards rose, people were encouraged to use surplus to buy new



Zhou Fang, *Ladies Wearing Flowers* (Tang dynasty). Bursts of consumerism occurred at various points in Chinese history.

goods. While this relationship retains partial validity, major discoveries in the past two decades locate the effective origins of fully modern consumerism in western Europe in the seventeenth and eighteenth centuries. A craze for buying new things and keeping up with the latest fashions spread widely in Western society, affecting urban populations particularly but creeping into the countryside as well—as with domestic manufacturing workers in eighteenth-century Switzerland who defied village customs by indulging in urban-style clothing. Massive markets for secondhand clothing developed, for people who had the consumerist urge but not the money to follow through easily, and thefts of fashionable clothing rose as well. Not only clothing but household furnishings and tableware reflected growing consumerist interests, and there were also some intriguing sidelights, like the frenzy for tulip buying (including paintings of tulips) that swept through Holland in the second quarter of the seventeenth century.

This modern consumerism had three characteristics. First, it was cross-class. While social distinctions were not obliterated, one of the joys of modern consumerism involved buying the same kinds of styles as one's betters—if perhaps of lower quality. Many social critics noted this feature, bemoaning (and exaggerating) the loss of the ability to tell a person's social station by looking at his or her clothes. Consumerism also crossed gender lines. Women were often unduly blamed for frivolous consumerism—men participated heavily as well—but it was true that women found considerable self-expression in consumerism. New interests in tea sets and silverware,

for example, followed from women's new authority to regulate mealtimes in the family, and furniture and clothing often sparked interest.

Second, modern consumerism involved a new apparatus of shops and commercial inducements. Scholars have found the basic elements of consumerist apparatus present in places like Britain in the later eighteenth century. Not only did shops spread, but owners became adept at arranging goods in enticing window displays; they offered loss leaders to lure people in for bargains as a result of which they would also end up buying other goods; they advertised widely, often using aristocrats to testify to the qualities of products like razors or teas. Josiah Wedgwood, a leader in pottery production in eighteenth-century Britain, kept careful track of the shops that sold his goods, experimenting with new styles but with enough market research to learn what ones were catching on, what ones should be pulled back. There were even early signs of consumerist leisure: commercial circuses, for example, began in France in the late seventeenth century (though they had been known earlier in Asia). By the late eighteenth century otherwise traditional rural festivals were beginning to import entertainers from the cities.

Third, modern consumerism acquired new meanings for the people involved. Of course it reflected Europe's growing prosperity (for those with some property—not yet for everyone). It also reflected new levels of international trade. Mass enthusiasm for imported sugar has been labeled the first instance of modern Western consumerism, while the seventeenth- and eighteenth-century interest in tea and



Pendleton's Lithography. Industrialized production of cotton clothing allowed the middle class to indulge in the latest fashions. New York Public Library.

coffee helped support the larger enthusiasm for new tableware. But cultural change was involved as well. For many people, religious focus was declining, and consumerism was an outlet for growing secularism. A more commercial society blurred class lines, while population growth jeopardized established place. Many children, for example, could no longer count on inheriting land or artisanal shops from parents. They might do all right financially—working for wages in domestic manufacturing for instance—but they did not have access to conventional social markers. Consumerism, as a means of showing a new kind of identity and success, could play a crucial role in this context. Growing interest in romantic love, another current of the eighteenth century, also contributed to

the commitment to acquisition, particularly, of course, in personal apparel. Additionally, modern consumerism involved a new desire for personal comfort. The use of umbrellas, for example, provided shelter from bad weather, though some British stalwarts objected to this “unnatural” indulgence as umbrella purchases became common in the eighteenth century. Historians debate the precise mix of factors involved, but they agree that consumerism reflected serious values changes, and not simply the imposition of new lures by greedy shopkeepers.

It is clear, finally, that modern consumerism preceded industrialization in the West, helping in fact to promote it through heightened demand for products like clothing. Growing enthusiasm for cotton cloth, one of the motors of early industrialization, reflected not only its cheapness but also the ability to dye it in bright colors, catching the eye of eager consumerists.

Industrialization and Social Critiques

Consumerism and industrialization combined to promote further changes in commercial apparatus. A cluster of shops in Paris merged in the 1830s to form the world's first department store, and the spread of this kind of outlet marked the further progress of consumerism on a global basis. By the 1860s and 1870s, scientists and popularizers were also noting a brand-new consumerist disease, kleptomania, both in Western Europe and the United States, with middle-class women the most common victims. Here was a sign, if a deviant one, of the kind of personal passion that modern consumerism could entail. Emotional definitions changed. Envy had traditionally been criticized as a debasing emotion, but by the late nineteenth and early twentieth centuries it began to be praised as a motivation for healthy consumerism.

Modern consumerism made many people uncomfortable, which is not surprising given the magnitude of change involved. From the late eighteenth century onward, criticism dogged the phenomenon. Religious authorities objected to secularism—though by the late nineteenth century some mainstream Christian



Small upright player pianos brought musical entertainment to a wider home audience. From *Town & Country*, May 1915.

groups came to terms with consumerism, noting that a good appearance was one of God's blessings. Social critics of course attacked the presumptions of the lower classes and the weaknesses of women. Emile Zola's novel *Germinal* was a long harangue against department stores and women's frailty, which distorted family budgets and led to ruin. Medical authorities might get into the act, noting the bad health effects of too much indulgence (particularly, of course, in food and drink). Socialists sometimes opposed consumerism in the name of purer proletarian tastes; but sometimes they merely insisted that workers be given the means to join in consumerism. Anticonsumerism was also an element in anti-Semitism in Western Europe, with Jews blamed for department stores and other lures to depraved taste. While some of these reactions eased over time—there was less anticonsumerism in the West by the later twentieth century—they remain a factor.

Global Consumerism

Modern consumerism began to spread beyond western Europe during the nineteenth century. The United States followed European fashions in its imports of clothing and food from the 1840s onward, though there had been some signs of consumerist interest earlier. The purchase of watches in rural New York, in the 1820s, has been traced to a desire to copy English fashion, only later leading to an actual interest in keeping more accurate track of time. Department stores spread to major Russian cities by the 1850s, indicating a new upper-class interest in stylish consumerism. Japan's opening to the West involved quick assimilation of many consumer interests. Department stores began to mark the fashionable Ginza district in Tokyo by the 1890s. The same kinds of outlets showed up in Western-influenced Shanghai by the early twentieth century. These geographical extensions of consumerism were not automatic. Asian department stores often mixed traditional displays with Western-style consumerism. They offered concerts and other lures to demonstrate that consumerism was culturally acceptable. Even with this, many locals stayed away, convinced that there was nothing in these outlets that they wanted; and of course there was massive criticism of consumerism not only along the lines already present in the West, but on grounds of its debasing foreignness. As before, the spread of consumerism involved really new values, including an interest in challenging existing social lines and power structures, and the process did not occur overnight.

The spread of consumerism also brought new possibilities for protest. A number of boycotts developed, seeking to use denials of consumerism as a means of attacking foreign intervention or other issues. The Boston Tea Party, before the American Revolution, was a consumerist protest of sorts. By the 1920s Indian nationalists and others frequently used boycotts of foreign products to attack British imperialism, with some success. African Americans employed boycotts in places like Baltimore during the interwar period to protest racial injustice. Boycotts were involved in



A modern-day, multilevel mall.

Photo by Tony Alkhoury
(www.morguefile.com).

attacks on apartheid in South Africa in the 1980s. By this point, also, human rights groups frequently spurred boycotts against multinational companies accused of shoddy labor practices in Third World countries. Other kinds of consumer movements in the twentieth century sought protection against fraud and poor quality.

The Twentieth Century and Beyond

Consumerism intensified in the twentieth century. Again, both apparatus and motivation were involved. Advertising became slicker, using new imagery and technology and appealing more deeply to emotion. The first real advertising agency arose in the United States, in the 1870s; the phenomenon spread to Europe during the early twentieth century. Not only growing prosperity but also growing discontent with work promoted new levels of consumerist interest. Many factory workers, bored or nervous on the job, turned to consumer pleasures to compensate. The same pattern could affect middle-class people, increasingly employed in large, faceless bureaucracies and unable to claim traditional satisfactions in personal entrepreneurship.

The new wave of consumerism, from the late nineteenth century onward, fueled by these developments, involved the increasing commercialization of holidays like Christmas. As consumerism globalized, Christmas also became widely popular, even in Muslim societies, for its commercial appeal, while other holidays, like Ramadan, began to include more consumer items like greeting cards.

Global consumerism involved the growing participation of children, surrounded from infancy with store-bought items like teddy bears (named for the American president). Experts began to urge parents to use toys and other consumer items to encourage good behavior. Consumerism also spread widely to the field of leisure, as most mass leisure came to involve purchased pleasures and spectatorship, from sports to movies.

Western leadership in twentieth-century consumerism increasingly involved American initiatives, as the United States became the world's leading consumer society. By the 1990s, however, Japan claimed a share in pioneering consumer fashions, as the sale of "cool" products became the nation's large single export category. A key challenge in consumerism research involves careful comparative analysis (as yet



ill-developed) to recognize common elements in the phenomenon but also key variations, including efforts to establish consumerist patterns different from those in the United States.

By the later twentieth century, also, consumerism increasingly intertwined with a global youth culture. Many young people found participation in consumer fads a means of expressing themselves against parental and other adult control. Again, consumerism had meanings, in terms of power relationships and personal expression, which went beneath the surface. The idea of participating in cosmopolitan styles, and being seen in the process, provided significant incentives for many young people.

The geographical spread of consumerism continued, of course. Soviet Russian society attempted to “co-op” consumerism, with state-run department stores like GUM; but the merger never entirely worked, and consumerist dissatisfaction with communism played a role in the collapse of the system. Urban African participation in consumerism began at least by the 1920s; Chinua Achebe’s novel *No Longer at Ease*, set in 1920s Nigeria, deals with the inroads of consumer culture on traditional family values. Latin American participation increased: by the later twentieth century a trip to Disney World in Florida, complete with shopping spree, was a standard expression of family success and doing right by one’s children. The idea of Christmas shopping spread to Muslim Istanbul, while the purchase of gifts and cards was increasingly added to the religious celebration of Ramadan.

Access to consumerism remained uneven, of course. Many rural areas in Asia and Africa were barely touched, and this fact added to the increasingly important rural–urban divide in countries like China. Outright resistance continued as well. The rise of religious fundamentalisms from the 1970s onward represented in part a protest against consumerist values, including their frequent association with sensuality and sexual license. Many

post-communist Russians resented consumerist displays by the “new Russian” middle class, partly, of course, from envy but partly from an older belief that community sharing should take precedence over individual expression. The process of assimilating consumerism has continued into the early twenty-first century.

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See also Capitalism; Industrial Revolution; Modernity; Progress

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Containment

The term *containment* is used most often in an historical context to describe the United States' policy toward the spread of USSR influence during the latter half of the twentieth century. The policy led to U.S. involvement in the Cold War, which included armed conflicts in Korea and Vietnam.

A policy aimed at containing, or restricting, a hostile or potentially hostile power through use of diplomacy and possibly force is referred to as *containment*. Historical examples of containment include the coalitions designed to contain French power in Europe during the eighteenth and early nineteenth centuries, or Chinese attempts to contain Vietnamese and Soviet influence in Southeast Asia after 1975. Containment can also be seen in the actions of Britain on the eve of World War II. During the mid-to-late 1930s the British government pursued a diplomatic strategy known as appeasement in dealing with Nazi Germany. However Hitler proved unappeasable and uninterested in long-term peaceful solutions. The Nazi occupation of Czechoslovakia on 15 March 1939 meant the end of appeasement. Instead the British resorted to containment by issuing a series of territorial guarantees to countries in Eastern Europe, most notably Poland. According to the guarantee, should Poland find itself attacked by Germany, Britain would come to its defense. In this manner, the British were attempting to contain German power in Europe. The Germans attacked Poland on 1 September 1939 and Britain declared war on Germany two days later. The term "containment" has many historical examples but is usually associated with the policy followed by the United States toward the USSR during the Cold War.

Origins of Cold War Containment

The months immediately following the end of the World War II saw deterioration in relations between the Western powers and the Soviet Union, who had formerly been allies in the war against the Axis states. British and American statesmen watched in alarm as the Soviets solidified their control over Eastern Europe. The Soviets seemed to be threatening Turkey and Iran, while a Communist insurgency in Greece steadily gained force. The Americans and British also blamed the Soviets for the slow pace of talks over the future of occupied Germany. An atmosphere of mistrust and unease settled over East–West relations.

George Kennan and Containment

On 22 February 1946, George Kennan (1904–2005), a staff member of the American embassy in Moscow, and longtime Soviet expert, sent a document analyzing Soviet policy to his superiors in Moscow. Kennan's analysis became known as the "Long Telegram," and was published in 1947 in the influential American journal *Foreign Affairs*. The journal editors attributed the article to "Mr. X," even though it was generally known that "Mr. X" was actually George Kennan. Kennan's analysis of Soviet foreign policy found widespread support in Washington and soon became the theoretical basis of containment.

Kennan believed that the USSR, for ideological and historic reasons, was an inherently expansionist power. In order to justify their tyranny, Kennan argued, the Soviet leaders had to convince their people that the USSR was threatened by hostile capitalist powers. The Soviets would seek to expand territorially

because that had been the pattern of Russian history. Surrounded by hostile nomadic tribes, living on an open, vulnerable plain, Russian rulers had found security in conquest. As well, Communist ideology demanded that workers in foreign countries be “liberated.” Kennan noted that if the Soviets were confronted at one point they would simply retreat and seek to expand somewhere else. Kennan thought that the Soviets could not be trusted in negotiations. They might agree to tactical concessions but would never give up on their historic mission. However, Kennan did not believe that the Soviets wanted war, since they took a long-term view and were content to wait for historical trends to play themselves out. Since the collapse of capitalism was inevitable, according to Communist theory, there was no need to take dangerous risks. Kennan recommended that the United States pursue “a policy of firm containment, designed to confront the Russians with unalterable counter-force at every point where they show signs of encroaching upon the interests of a peaceful and stable world” (Kennan 1947, 581). Kennan speculated that if the USSR were unable to expand then long-term internal pressures would force drastic changes in the Soviet system.

Critics of Containment

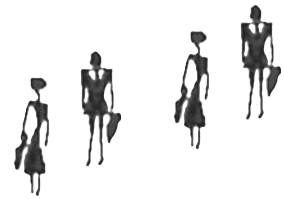
Kennan’s views, although popular in the government, provoked some criticism when made public. Walter Lippmann, a popular syndicated newspaper columnist and foreign affairs commentator of the time, wrote that containment would involve the United States in numerous conflicts around the globe. The resources of the United States would be overextended and worn down. Others on the political left criticized containment on the grounds that they opposed any confrontation with the USSR. Henry Wallace, a member of Truman’s cabinet and a former vice president under Roosevelt, publicly broke with Truman and said that Soviet policy was driven not by expansionism but rather by fear. Containment would only worsen the situation. In 1948 Wallace ran against Truman in the presidential election, but finished a poor fourth.

Containment Strategies

Kennan’s views provided the basis for many American policies toward the USSR in the years to come. Early in 1947 the British government informed Washington that it would be unable to continue aid to the government of Greece, which was then fighting a bitter civil war against the Greek Communists. Since it was assumed that the Soviets were supporting the Greek Communists, Washington feared that the fall of the Greek government would bring Soviet power to the shores of the Mediterranean. On 12 March 1947, President Harry Truman, in a bid to gain Congressional support for a \$400 million aid package to Greece and Turkey, proclaimed what has come to be known as the Truman Doctrine. Truman said that he believed that “it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures. I believe that we must assist free peoples to work out their own destinies in their own way” (Dunbabin 1994, 83). Truman added that American help should focus on economic and financial aid.

At the same time concern in Washington over the growth and popularity of West European Communist parties led to the conclusion that a slow economic recovery from the war was contributing to the appeal of the Communists. Accordingly on 5 June 1947, United States secretary of state George Marshall announced a program of extensive economic aid to European states in need. Formally known as the European Recovery Plan, it is more popularly remembered as the Marshall Plan. The USSR and its satellite states refused to participate, stating that they were not about to open their economies and societies to U.S. trade and U.S. auditors. Over the next four years most Western European states requested Marshall Plan assistance, with totals reaching more than \$17 billion. The Marshall Plan was fundamental to the West European economic recovery of the postwar era, although Communist parties in France and Italy remained popular for many years.

Although Kennan had emphasized nonmilitary economic and diplomatic strategies for containment,



and had participated in the drawing up of the Marshall Plan, the intensification of the Cold War meant that military containment came to the fore. In August 1949 the USSR successfully tested an atomic bomb, breaking the United States monopoly on atomic weapons. In October 1949 the Chinese Communists, led by Mao Zedong, came to power in China. Finally, on 25 June 1950 the armies of Communist North Korea invaded South Korea. Although South Korea had never previously been seen as vital to United States strategic interests, Truman decided that he could not stand by. The United States entered the war on the side of the South Koreans and soon became bogged down in a bloody three-year stalemate.

Earlier in 1950 the United States government had undertaken a comprehensive review of its global defense strategies. The review, completed by September, was obviously influenced by the events of 1949 and the Korean War. Known as NSG-68, the review recommended a massive buildup of American atomic and conventional defense forces. The document almost certainly marked a turn toward a military emphasis in containment. Kennan later protested that by “counter force” he had meant more than just military force, but such distinctions were quickly lost in the heated atmosphere of the Cold War.

Truman did not run in the 1952 presidential election, which was won by Republican Dwight D. Eisenhower. During the campaign the Republicans bitterly criticized containment for abandoning the people of Eastern Europe to a tyrannical political system. John Foster Dulles, soon to be Eisenhower’s secretary of state, promised to “roll back” Soviet influence in Eastern Europe. But Dulles recoiled from the idea of war, and so could do little more than continue containment after 1952. Dulles knew that a direct attempt to intervene in the Soviet Eastern bloc would provoke full-scale war. Instead, Dulles assumed, especially after Stalin died in 1953, that forces of nationalism in Eastern Europe would do the job in bringing down the Soviet system. Yet another review of American defense strategy, carried out in 1953, came to the same conclusion. However, the Americans did escalate the propaganda war by improving the broadcast capabilities of Radio Free Europe.

Containment after Korea

The Korean War also posed continuing serious questions about what exactly containment meant. Was the United States to become involved in every single conflict around the globe where Communism was perceived to be a threat? Were some areas of the globe more valuable to the United States than others? Some commentators, such as Henry Kissinger, have pointed out that containment was essentially a defensive, reactive policy that conceded the initiative to the other side. Others have argued that proponents of containment grossly overrated the Soviet military threat, which in the early 1950s was still minimal in terms of atomic weapons. Containment was also said to have underestimated the usefulness of long-term negotiations in solving East-West problems.

During the 1950s supporters of containment conjured up the metaphor of a row of dominoes to illustrate what might happen if containment failed in any given area. The successful toppling of the first domino means the whole row will fall. A successful Communist takeover in any one country might prompt a whole series of takeovers, resulting in an eventual direct threat to the United States itself. The logic of containment resulted at least partially in American involvement in the Vietnam War in the early 1960s. Some feared that the loss of South Vietnam would topple other Southeast Asian states, so the United States became involved in a second major land war in Asia since 1945. The result was a costly and bitter conflict, deep social division in the United States, and the eventual military defeat of South Vietnam in 1975.

With military containment discredited, U.S. presidents still had to struggle with how to respond to perceived Soviet gains in what was seen as the zero-sum nature of the Cold War. In Angola and southern Africa in the late 1970s, and in Afghanistan and Central America in the 1980s, Washington relied on proxy forces to combat Soviet influence. The United States found dissident groups and organizations opposed to Soviet-backed Marxist states. Such organizations were then armed and supported by the U.S. Examples include the Contra rebels in Nicaragua, the

mujahideen resistance factions in Afghanistan, and the UNITA movement in Angola.

The obvious decline of the USSR in the late 1980s prompted much retrospection on Kennan's original ideas and the ways in which they had been used, or misused. In 1987 *Foreign Affairs* reprinted Kennan's article in its entirety. Some saw Kennan as a far-sighted and perceptive observer of the USSR, while others decried what they felt was the distortion of his ideas and the high cost of military containment over the years.

Historically containment, in the context of the Cold War, will be remembered as a doctrine that did much to define the 'battle lines' of the Cold War. The wars fought under the banner of containment had a tremendous impact of the peoples of Asia and Africa. However, containment will also remain an important diplomatic tool in the new century and in the near future will most likely be applied to perceived 'rogue' states.

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See also Cold War; Diplomacy

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Corporations, Multinational

Trading companies in the 1600s, precursors to multinational corporations (MNCs), acquired and controlled foreign assets in order to reduce costs and risks and to gain advantage over their competitors. Modern MNCs that invest directly in foreign markets benefit from advances in research and development, from privileged access to capital and finance in the home country, and from the ability to manage organizational, marketing, and branding techniques.

Multinational corporations (MNCs) are corporations that own an asset in more than one country. We can classify multinational corporations according to their function. For example, market-oriented overseas multinational corporations are those that invest abroad to sell their products directly in foreign markets; supply-oriented multinationals are those that operate abroad to have access to or control over strategic input for their production process.

Many multinational corporations are both market oriented and supply oriented. The best examples are those companies that are involved in oil discovery, refining, and distribution through an international network in a world market. According to another taxonomy (system of classification), a multinational corporation can be vertically integrated, horizontally integrated, or diversified, according to the nature of its foreign assets. Moreover, the production facility located in the host country must be not only owned but also controlled: CalPERS (California Public Employees Retirement System), one the most important pension funds in the world, is *not* a multinational corporation. It is, in fact, a major shareholder in many countries' largest corporations but does not

exert control over their management. The conjunction of foreign ownership and a certain degree of control over the overseas subsidiary creates the concept of foreign direct investment (FDI). FDI can take the form of the acquisition of an existing facility or of the realization of a completely new production unit (greenfield investment). When FDI is less than 100 percent of the subsidiary's capital, different taxonomies of MNC can be used. The most common such MNC is the joint venture, which often involves two or more partners, not necessarily all foreign firms. For instance, in many cases the only way for a nondomestic firm to establish a production facility in a country is to associate itself with a local firm, creating a new venture.

Patterns of Evolution

According to the preceding definitions the MNC is a quite old phenomenon, dating back at least to the "commercial revolution" of the Middle Ages and the following emergence of large colonial empires at the beginning of the modern period. Single merchants and bankers started quite early to conduct overseas activities, and soon national trading companies were investing abroad. Examples are the British East India Company, the Compagnie Generale de Belgique (General Company of Belgium), and the Vereenigde Oost-Indische Compagnie (Dutch East India Company), which, although based in Europe, owned, managed, and controlled production assets in east Asia, India, and Africa. With the first industrial revolution the rate of diffusion of multinational activity began to increase. High transportation costs; uncertainty; high custom tariffs or, alternatively,



Samchuk-Suphanburi, Thailand. Coca-Cola®, one of the world's largest corporations, has come a long way from its humble beginnings in Atlanta, Georgia, in 1886.

incentives and a favorable attitude shown by a host country; or simply a competitive advantage led to a spin-off of production investments from the most advanced European nations. This is, for instance, the case of Swiss entrepreneurs in the cotton industry who invested during the mid-nineteenth century in northern Italy, a promising market that also provided a cheap and docile workforce.

The first wave of globalization during the second half of the nineteenth century brought an extreme form of the MNC: the free-standing company (FSC). In its simplest form the FSC was a company that raised resources in home capital markets and invested them exclusively abroad in production facilities. The FSC was, according to many scholars, the most relevant form of British foreign investment at the eve of the twentieth century. The combination of

two phenomena—the technological progress in transportation and communications and the diffusion of scale-intensive, large corporations—has further diffused FDI. The second Industrial Revolution created a growth in the absolute amount of FDI (which on the eve of World War I was \$40–50 billion). At the same time leadership in multinational activity began to be transferred from the United Kingdom to the new world economic leader, the United States. The leading position of the United States was further confirmed after World War II and during the 1960s when U.S. conglomerates began an extensive policy of acquiring foreign companies. During the same period and after the 1980s other countries, mainly in Europe (France, Germany, the United Kingdom, and the Netherlands) and Asia (Japan), began to increasingly challenge U.S. leadership in FDIs. At the beginning of the new millennium, when the recently industrialized countries of east Asia began consistent multinational activity, the world stock of outward FDI exceeded \$2 trillion.

Theories

Scholars have offered various theories to explain the existence of multinational corporations. Economic imperialism theorists (going back to the Russian Communist leader Vladimir Lenin) saw the MNC simply as an instrument for the diffusion of the new capitalist order on a world scale. According to other theorists, such as the economist Raymond Vernon, we must see the MNC as the natural evolution of the life cycle of a product; in this model FDI is directly connected to the maturity and standardization of a product. When producing a product at the lowest marginal cost is vital, a corporation will tend to transfer the production abroad, especially in developing economies.

Since the 1960s, however, starting with the writings of the U.S. scholar Stephen Hymer, the analysis of multinational corporations has progressed. Scholars have identified a number of factors that justify the advantage that a MNC gains by investing directly in foreign markets (instead of simply exporting). Among such factors scholars have given special importance

to proprietary technology and research and development; privileged access to capital and finance in the home country; and the ability to manage organizational, marketing, and branding techniques, given the competence acquired in the home market. A long experience in multinational activity has been considered a competitive advantage in itself. In other cases FDI flows are influenced by the institutional context in the host country in terms of trade and industrialization policies.

The relationship between multinational activity and uncertainty is the core of other theories that try to explain the existence of multinational corporations from a neoinstitutional perspective. This is, for instance, the case of transaction costs (TC) theory, which tends to consider the imperfections in world markets, especially for raw materials and other intermediate products, as a major force driving the internalization of overseas activity of a corporation. The British scholar John Dunning formulated a more general approach at the beginning of the 1990s. In his approach (the so-called OLI paradigm) the MNC is an organization that is able to understand and manage a complex array of variables in noneconomic fields, such as politics or culture in the host country. The decision to invest abroad is the outcome of a series of advantages the corporation has, or gains from the investment, in terms of (O) ownership (e.g., of superior technologies or management, or marketing techniques), (L) location (e.g., in terms of resource

endowment of the host country), (I) internalization of segments of the value chain (e.g., in some cases it is better to control directly the distribution in a foreign market than relying on local agents).

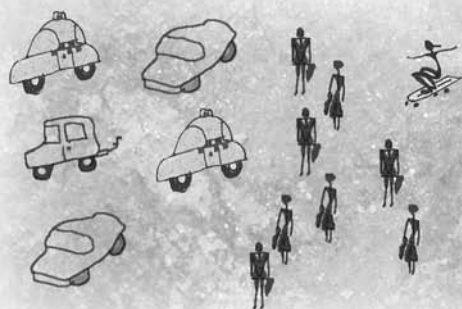
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See also Globalization

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Cosmology

The human understanding of the universe has dramatically changed over time, with advances made in extrapolating evidence from carefully observed phenomena, and with discoveries in disciplines such as particle physics. Each change in the cosmological model has diminished human significance in a vast and ancient universe.

Cosmology is the study of the universe as a whole, its structure, composition, history, and probable future. Because human records only extend over a tiny fraction of the lifetime of the universe and human exploration has been restricted to a very small region, cosmologists are forced to rely on extrapolations and speculation beyond what would be acceptable in the other sciences. While much of cosmological theory has no immediate relevance to understanding the environment of living organisms on earth, cosmology sheds light on the time scale of biological evolution and the possibility of new resources being discovered. Cosmology touches at several points on issues also of concern to religion and has for many thinkers required a revision of their estimate of the place of humans in nature.

The Geocentric Universe and Astrology

As ancient humans watched the daily transit of the sky by the sun, moon, and stars, it was only natural to assume that the Earth was the center about which these celestial bodies moved. On closer observation it became apparent that a few star-like objects moved a bit differently, seeming to wander against the

background of stars that traveled together across the sky as if attached to a transparent sphere. The movements of the wanderers, called planets, was thought to influence human affairs and a group of professional astrologers began to predict the future for individual clients by casting horoscopes, based on the position of the planets at the time of their births. Tables of planetary positions were worked out, assuming the planets moved in circular orbits about the earth. The most famous of these, the *Almagest* of Ptolemy (90–168 CE) is the basis for astrological tables used today.

A Heliocentric Universe

The Ptolemaic model held sway until the Polish clergyman Nicolas Copernicus (1473–1543) published *On the Revolutions of the Celestial Orbs* in 1512. Realizing that his views would meet with disapproval by church authorities, he postponed publication of his book until his dying year. The Italian mathematician Galileo Galilei (1564–1642) popularized the Copernican model and incurred censure for his views. In actuality, though, both the Ptolemaic and Copernican systems were defective in assuming, on philosophical grounds, that planetary motion must be circular. Based on the careful observations of the Danish nobleman Tycho Brahe (1546–1601), the German scholar Johannes Kepler (1571–1630) demonstrated that the planets moved about the sun in elliptical orbits. It remained for the great English mathematician Sir Isaac Newton (1642–1727) to discover the laws of motion and of universal gravitation that explained the elliptical orbits and confirmed the heliocentric model.



Aristotelian Cosmos, based on the theories of Ptolemy. From Peter Apian, *Cosmographia* (1524).

A Very Large and Old Universe

By the beginning of the twentieth century, astronomers were in general agreement that the sun was just one of many stars and that the visible stars in the sky were clusters together in a large structure, the Milky Way galaxy. A group of indistinct fuzzy objects called nebulae had yet to be explained. In 1918, the American astronomer Harlow Shapley (1875–1972) was able to demonstrate that the sun was quite far removed from the center of the Milky Way. In 1923 the American astronomer Edwin Hubble measured the distance to the Andromeda nebula, showing that it and the other nebulae were actually galaxies in their own right. The universe was understood then to consist of many galaxies like our own and thus to be very much larger than anyone had previously expected.

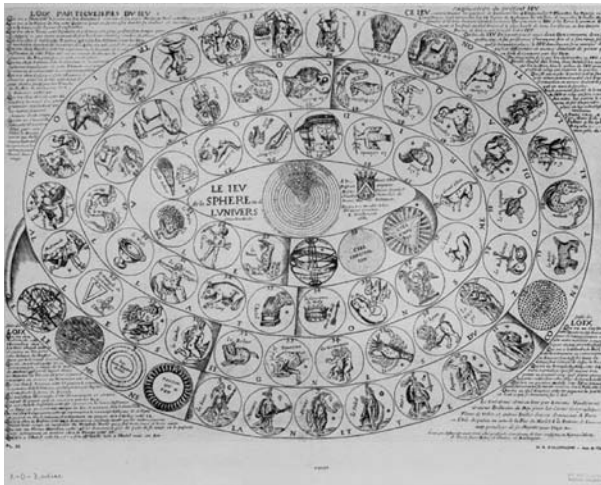
A theoretical result known as Olber's paradox implies that the universe, or at least the stars in it, could not be of infinite age, since, if it were, the sky would be as bright at night as during the day. In 1929 Edwin Hubble, working with the world's then largest telescope, on Mount Palomar in California, was able to demonstrate that galaxies far from the Earth were moving away from it with a velocity that increased

with distance. This fact along, with other evidence, lead to the conclusion that the universe we know, was at its beginning, some ten to twenty billion years ago, confined to a very small region of space and began to separate as the result of a giant explosion, the "big bang."

Life Cycles of Stars and the Origin of Chemical Elements

Until the twentieth century the energy source of the sun was a mystery. In the 1930s it was discovered that the fusion of small nuclei to form a large nuclei would result in the transformation of a small fraction of the smaller nuclei's mass into heat energy according to Einstein's famous formula, $E=mc^2$. It is now known that the power source of the sun is the fusion of hydrogen nuclei to form helium nuclei. Computer modeling now shows that after the sun, which is now about five billion years old, has transformed most of its hydrogen into helium, its inner regions will contract and become hotter until the combining of helium nuclei to form carbon and oxygen nuclei becomes feasible. After that further contractions will occur until atoms as heavy as iron will be formed. The formation of nuclei heavier than iron occurs, either by a slow process in which a heavy nucleus absorbs neutrons that are then converted to protons through beta decay, or when massive stars explode as supernovas.

Our current understanding of the distribution of chemical elements is as follows: hydrogen and a certain amount of helium were formed during the big bang, about 13 billion years ago. The basic elements of life and those found in large quantities on earth had to be formed in stars that had passed the hydrogen burning stage and ultimately returned their substance to the interstellar medium where it could condense as a new star, the sun, and planets formed. Elements with atomic numbers higher than iron are formed in very old stars or in supernova explosions, and therefore are destined to remain rare regardless of how thoroughly the mineral resources of Earth are explored.



A board game “simulates” a voyage through the universe based on the research of the Danish astronomer Tycho Brahe. Engraving by Estienne Vouillemont, 1661. From *Le Noble jeu de l'oie en France, de 1640 á 1950*. (Paris: Gründ, 1950).

Cosmology Today

Modern cosmologists apply the principles of relativity theory and the discoveries arising from experiments in particle physics to try to understand the origin and the ultimate fate of the universe as we know it. They also must assimilate observations from the Hubble telescope and a number of artificial satellites that show the universe to be relatively uniform when averaged over large distances. In contrast to the assumption that the Earth held a privileged position in the universe, most cosmologists today make assumptions of isotropy and homogeneity, that is, that the universe looks pretty much the same from

any point in it and in any direction in space. Perhaps the biggest questions in cosmology today are the reason for this uniformity, which has been taken as evidence for a period of especially rapid expansion or inflation shortly after the big bang, and the nature of the so-called dark matter that is needed to explain the rotational speeds of galaxies as observed. Once these questions are resolved, cosmologists will have a better understanding of the early history of the universe and may speak with greater confidence about its distant future.

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See also Big History; Universe, Origin of

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Creation Myths

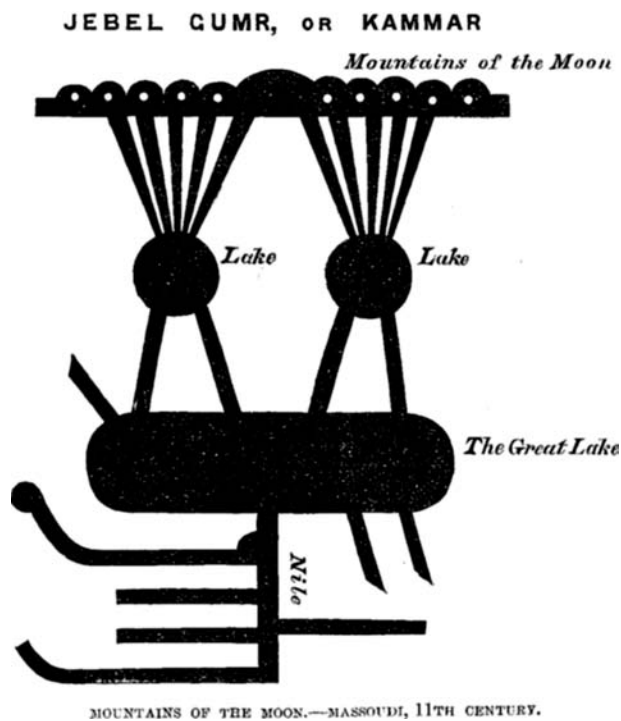
Almost every human society has had a set of stories that explain the origins of the cosmos; these creation stories (never “myths” to those who believe them) attempt to give meaning to all of existence and often reflect the cultures from which they derive. Modern creation stories, although based on scientific observation and research, still strive to answer the same basic questions as earlier myths.

Creation myths are stories, or collections of stories, that tell of the origins of all things: of communities and landscapes, of the Earth, its animals and plants, of the stars, and of everything that exists. They represent what “history” has meant for most human communities. Creation myths appear to have existed in all human societies and they are deeply embedded within all the major world religions. By offering answers to questions about origins, creation myths provide maps of reality within which people can learn about their place in the cosmos and the roles they are expected to play. As Barbara Sproul states in her book *Primal Myths* (1991, 2–3): “[C]reation myths are the most comprehensive of mythic statements, addressing themselves to the widest range of questions of meaning, but they are also the most profound. They deal with first causes, the essences of what their cultures perceive reality to be. In them people set forth their primary understanding of man and the world, time and space.” Marie-Louise von Franz, in *Creation Myths* (1972, 5), writes that they “refer to the most basic problems of human life, for they are concerned with the ultimate meaning, not only of *our* existence, but of the existence of the whole cosmos.”

Many striking parallels exist between traditional creation myths and the foundation stories of modern societies, which are embedded within modern science and historiography. Are modern accounts of origins fundamentally different from those of traditional societies? Or can they, too, be regarded as “creation myths”? Such questions are worth pursuing because they raise important questions about the nature of the truths that can be attained within modern historiography, particularly when, like world history, it aspires to a coherent account of the past on many scales.

A Creation Myth Example

Creation myths have taken many different forms. The Genesis story within the Judeo-Christian-Islamic religious tradition counts as a creation myth. So do the origin stories found in the oral traditions of societies without written histories. Appreciating the full significance of creation myths is difficult because, like so many cultural traits, their meaning is obvious to those brought up with them, but opaque to outsiders. So the creation myths of others are almost invariably experienced as strange, exotic, and *wrong*. As the definition of “myth” in the *Encyclopaedia Americana* points out, “a myth is understood in its own society as a true story. (It is only when it is seen from outside its society that it has come to acquire the popular meaning of a story that is untrue)” (Long 1996, 699). The difficulties of understanding a creation myth from outside can be appreciated from the following extract. It comes from the account of a French anthropologist, Marcel Griaule, who is summarizing his conversations with Ogotemmeli, a wise man of the Dogon people of Mali. Ogotemmeli had been authorized to



This diagram, combining myth and reality, depicts an eleventh-century African Muslim belief about the origin of the Nile.

reveal something of his society's cosmology, but it is clear from the conversation that he was aware of speaking to an outsider, who might not understand or fully appreciate all he said, and Griaule himself was acutely aware of the difficulties of this complex process of translation.

The stars came from pellets of earth flung out into space by the God Amma, the one God. He had created the sun and the moon by a more complicated process, which was not the first known to man but is the first attested invention of God: the art of pottery. The sun is, in a sense, a pot raised once for all to white heat and surrounded by a spiral of red copper with eight turns. The moon is in the same shape, but its copper is white. Ogotemmeli said he would explain later the movements of these bodies. For the moment he was concerned only to indicate the main lines of the design, and from that to pass to its actors. He was anxious . . . to give an idea of the size of the sun. "Some," he said, "think it is as large as this

encampment, which would mean thirty cubits. But it is really bigger. Its surface area is bigger than the whole of Sanga Canton." And after some hesitation he added: "It is perhaps even bigger than that." . . .

The moon's function was not important, and he would speak of it later. He said however that, while Africans were creatures of light emanating from the fullness of the sun, Europeans were creatures of the moonlight: hence their immature appearance. . . .

The god Amma . . . took a lump of clay, squeezed it in his hand and flung it from him, as he had done with the stars. The clay spread and fell on the north, which is the top, and from there stretched out to the south, which is the bottom of the world, although the whole movement was horizontal. The earth lies flat, but the north is at the top. It extends east and west with separate members like a foetus in the womb. It is a body, that is to say, a thing with members branching out from a central mass. This body, lying flat, face upwards, in a line from north to south, is feminine. Its sexual organ is an anthill, and its clitoris a termite hill. Amma, being lonely and desirous of intercourse with this creature, approached it. That was the first occasion of the first breach of the order of the universe.

Ogotemmeli ceased speaking. . . . He had reached the point of the origin of troubles and of the primordial blunder of God. "If they overheard me, I should be fined an ox!"

At God's approach the termite hill rose up, barring the passage and displaying its masculinity. It was as strong as the organ of the stranger, and intercourse could not take place. But God is all-powerful. He cut down the termite hill, and had intercourse with the excised earth. But the original incident was destined to affect the course of things for ever; from this defective union there was born, instead of the intended twins, a single being, the *Thos aureus* or jackal, symbol of the difficulties of God. . . . God had further intercourse with his earth-wife, and this time without mishaps of any kind, the excision of the offending member having removed the cause of the former disorder. Water, which is the divine seed, was thus able to enter the womb of the earth and the normal reproductive cycle resulted in the birth of twins. Two beings were thus formed. God created them like water. They were green in color, half human beings

and half serpents. From the head to the loins they were human: below that they were serpents. Their red eyes were wide open like human eyes, and their tongues were forked like the tongues of reptiles. Their arms were flexible and without joints. Their bodies were green and sleek all over, shining like the surface of water, and covered with short green hairs, a presage of vegetation and germination. These figures were the Nummo twins, water gods who later play a crucial role in the creation of the earth. (Sproul 1991, 50–51, citing Griaule 1975, 16–40)

Features of Creation Myths

These brief extracts, from the start of a long and complex story, illustrate several features of creation myths in general. First, Ogotemmel's account is told as a story. This may be simply because narrative is the most powerful and memorable way of explaining and transmitting complex, important truths. "Like myth, memory requires a radical simplification of its subject matter. All recollections are told from a standpoint

in the present. In telling, they need to make sense of the past. That demands a selecting, ordering, and simplifying, a construction of coherent narrative whose logic works to draw the life story towards the fable" (Samuel and Thompson 1990, 8).

Second, origins are explained as the result of conscious actions by spirits or gods. That spiritual entities created the basic structures of the world is a default hypothesis in many traditional cosmologies. But it is not universal. Many origin stories rely on metaphors of birth, positing the existence of a primordial egg or a primordial sexual act, whose meaning can be understood more or less literally. Some origin stories explain creation as an awakening from sleep, a reminder that our own personal origin stories all have the quality of awakening from preconsciousness. Some creation myths face the paradoxes of origins squarely, positing a realm preceding that of the gods, which was balanced precariously between existence and nonexistence. According to the Rig Veda, the ancient sacred hymns of northern India, "There was

The central part of a floor mosaic (c. 200–250 CE) from a Roman villa depicts Aion, god of eternity, and the Earth mother Tellus (the Roman equivalent of Gaia). The children might possibly personify the four seasons.



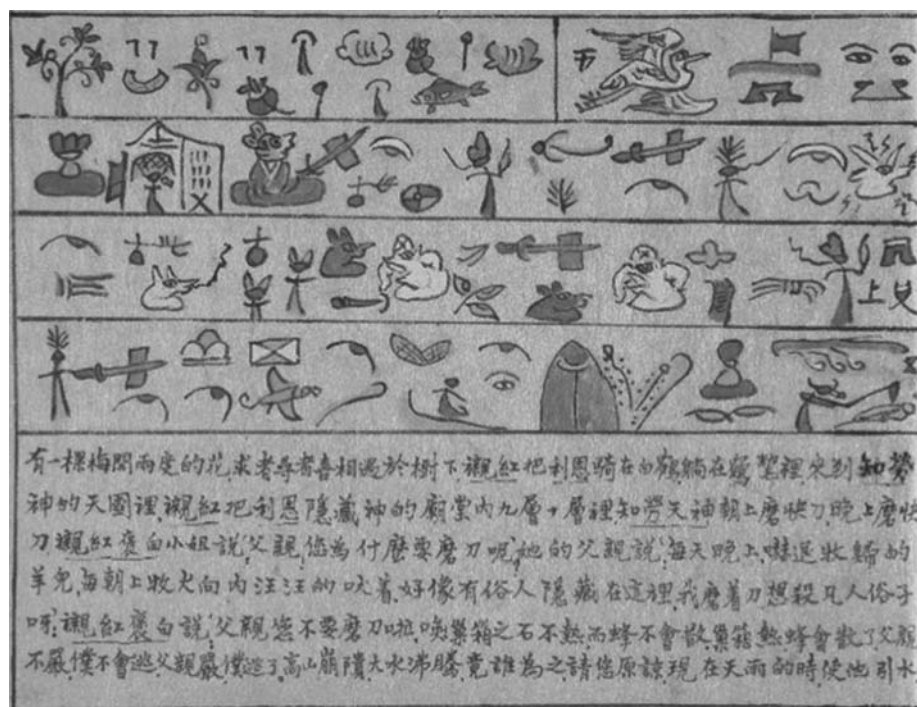
neither non-existence nor existence then; there was neither the realm of space nor the sky which is beyond. What stirred? Where? In whose protection? Was there water, bottomlessly deep? There was neither death nor immortality then. There was no distinguishing sign of night nor of day. That one breathed, windless, by its own impulse" (O'Flaherty 1981, 25). Such language hints at the paradox present in all stories of ultimate origins—how can something (whether a god or an entire universe) come out of nothing?

Third, all creation myths are more complex than they may seem at first sight. Because they deal with ultimate realities, with truths so complex that they can only be referred to using richly metaphorical or poetic language, their tellers are usually well aware of their paradoxical, even provisional nature. At one point, Marcel Griaule was puzzled by a detail in Ogotemmeli's story, according to which large numbers of creatures appeared to be standing on a single step, only one cubit deep and one cubit high. How was that possible? Ogotemmeli replied: "All this had to be said in words, but everything on the steps is

a symbol, symbolic antelopes, symbolic vultures, symbolic hyenas. Any number of symbols could find room on a one-cubit step." Griaule adds that the word Ogotemmeli used for symbol literally meant "word of this (lower) world" (Sproul 1991, 64).

Fourth, embedded within cycles of creation myths there is generally much hard empirical information about the real world, information about animal migrations, about technologies of hunting and farming, information that younger members of society needed to learn. Such information is often of little interest to outsiders, who may thereby miss the practical, empirical nature of most cycles of myth, but it helps explain their fundamental role in informal systems of education. Ogotemmeli's story, for example, contains a long list of important animals, much lore about procreation and sexuality, details of the major grains farmed in his region, and symbolic accounts of human anatomy and the world's geography.

Finally, partly because they contain so much familiar information, creation stories have the feeling of truth for insiders, just as modern science does



Page from the Translation of the Entire Text of the "Yao Annals of Creation," a bilingual document recording the origins of the Naxi peoples living near the Li River in Yunnan, China. The Dongba glyphs (top) characters were developed circa the seventh century; here they vividly portray the story of Chaozeng Lien, the founder of the Naxi, and his wife, Chenhong Baobai. National Library of China.



for those educated in the early twenty-first century. To those brought up with them, particular creation myths represent the best available guide to reality and much of what they say fits in well with commonsense experience. This does not mean that creation stories are necessarily treated uncritically by insiders—it is always possible to argue about details of a creation story or express skepticism or even confusion about certain aspects of the story. As Griaule comments of Ogotemmeli, “Ogotemmeli had no very clear idea of what happened in Heaven after the transformation of the eight ancestors into Nummo” (Sproul 1991, 59). But it does mean that familiar creation myths are felt to be the best available guides to reality and therefore to conduct; in some sense, they hold society together. And this makes them extremely important, not to be told lightly or carelessly, and to be treasured and passed on with care by those who keep the knowledge they contain. Creation myths contain potent information, which is why Ogotemmeli lowers his voice when discussing the first blunder of the God Amma.

Similarities and Differences

This partial list of the features of traditional creation stories suggests some of the main similarities and differences between creation myths and modern, “scientific,” accounts of the past. Both modern and traditional accounts of origins play an important educational role because traditional creation stories also contain much carefully tested information about the real world. Like creation myths, modern accounts of the past can also be passed on best in narrative form, which is still the dominant form for history writing and much popular science. Modern accounts of origins also struggle with the problem of ultimate origins, something that is clear in the case of modern big bang cosmology, which can say nothing precise until just after the moment of creation. Indeed, like many traditional creation myths, modern physics sees non-being (the vacuum) as a state of potentiality, a realm of emptiness out of which things can appear. Further, when the epistemological going gets tough, even modern science has to fall back on complex and

paradoxical concepts whose full significance may remain somewhat obscure. In this sense, concepts such as gravity or black holes or quantum uncertainty play roles similar to those of gods or other mythic creatures in traditional creation stories. Finally, to an educated person today, modern origin stories have the same feeling of truth that traditional creation myths had for those brought up within them. Because of these many similarities, it seems reasonable to suggest that modern “scientific” historiography, particularly in the form of world history, can play many of the roles that creation myths played in the past.

Yet there are also important differences. It is tempting to claim that modern scientific accounts of the past are truer than those of traditional creation stories. Such claims may be true, but they need to be made with care. Even modern origin stories are anchored in time and place, so in the future they will undoubtedly seem naive and primitive in some respects, as traditional creation stories do today. Furthermore, all creation stories have something to teach outsiders insofar as they offer different ways of thinking about reality. For example, many environmentalists have argued that modern societies need to recapture the sense of being a part of the natural world that is so pervasive in the creation stories of foraging societies. A clearer difference is that scientific origin stories (like modern science in general) aim at universality. They expect to be believed not by just a single culture, but by all educated people on Earth. To earn such universal respect, they require a flexibility and openness that was lacking in many creation stories, for they have to appeal to intelligent people from many different cultural backgrounds, and they have to be able to incorporate new information. This requires a constant testing of hypotheses and details to avoid the parochialism of most traditional creation myths. Because modern scientific historiography (like science in general) appeals to a global audience, the tests to which it is subjected are numerous and thorough. (Unlike Ogotemmeli, we now know from direct experience what the moon is made of and how large it is.) Modern creation stories can claim to be truer than traditional creation myths insofar as the information

The day will come when the mystical generation of Jesus by the Supreme Being in the womb of a virgin, will be classed with the fable of the generation of Minerva in the brain of Jupiter. • **Thomas Jefferson (1743–1826)**

they contain has been more carefully tested, and as a result they feel true to a much wider audience. The universality and openness to testing of modern scientific accounts of the past explain a final, crucial difference: their unwillingness to invoke anthropomorphic or spiritual explanations for origins. Such explanations are ruled out by modern science because they are too flexible to provide rigorous, refutable explanations, and therefore cannot be subjected to the strict rules of testing that underpin modern science.

As this discussion suggests, world history is perhaps not so different from traditional creation myths. It, too, represents an attempt to tell the story of origins. But its audience is global, and to generate the feeling of “truthfulness” that all creation myths aspire to from a worldwide audience it must try to tell its origin stories without any taint of cultural bias, and with careful testing for rigor and objectivity.

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See also Universe, Origins of

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Crusades, The

The crusades were traditionally viewed as holy wars conducted from 1095 to 1291 that attempted to liberate (from Muslim control) and protect sites in the Holy Land sacred to Christendom. Soon they took on a broader mission: defending Christian order, under the sign of the cross, against unbelievers and enemies of the church. Many twenty-first-century scholars have adopted a “pluralist” view that recognizes an Age of Crusades spanning five hundred years.

The word “crusade,” derived from the Old Spanish *cruzada*, is best translated as “an undertaking marked by a cross” and most commonly means a Christian holy war. The original goal of the crusades was the liberation of Jerusalem and other sites in the Middle East sacred to Christendom, but by the early thirteenth century the crusade had evolved into an institution of the Roman Catholic Church with a more general mission: upholding and extending Christian order against all unbelievers and enemies of the church everywhere. As a result, Latin Christian Europe came into conflict not only with the Islamic world but also with the non-Christian peoples of the Baltic, the Byzantine Empire, the Rus’ (a Slavic polity centered in Kiev), and even nonconformist Christians at home, such as the Cathars of Languedoc, the so-called Albigensian heretics. Crusading also took on a missionary element, largely due to the impetus of the new mendicant orders, specifically the Franciscans and Dominicans. Consequently, crusading zeal and objectives impelled the Roman Church to send diplomats and missionaries to Mongolia and China between the mid-thirteenth and mid-fourteenth centuries and played an equally significant role in propelling

Europe’s transoceanic voyages of discovery of the fifteenth and sixteenth centuries. Likewise, Catholic Iberia’s overseas policies in the Americas, along the coastal shores of Africa, and in South and East Asia were colored by crusading values.

Historians debate the dates encompassed by the crusades and the crusaders’ theaters of operation. One school, known as the “traditionalists,” limits the crusades to the period that began with the calling of the First Crusade in 1095 and ended with the destruction of the last crusader strongholds on the mainland of Syria-Palestine in 1291. Traditionalists further limit the crusades to holy wars fought between Latin Christians and Muslims in the Middle East and North Africa during these two centuries. For the traditionalists, true crusades had Jerusalem and the rest of the Holy Land as their exclusive focal points. The other school, known as the “pluralists,” which is in current ascendancy in scholarly circles, has a broader view. Pluralists count as crusades the Spanish Reconquista, holy wars launched against pagans and other perceived enemies in the Baltic and Eastern Europe, and wars called by the papacy against heretics and political enemies in Western Europe. They also greatly expand the chronological limits of the crusades, finding proto-crusades well before 1095 and a vibrant crusading tradition well after 1291. Some take the Age of the Crusades down to as late as 1798, when Napoleon captured the island of Malta from the Order of the Hospital of Saint John, a religious order that assumed military functions in the twelfth-century crucible of the crusades. The perspective of this article is pluralist, but only goes so far as seeing the struggles between Catholic Europe and the Ottoman Empire of the sixteenth and seventeenth



Crusaders (twelfth century). The renowned fresco murals at the Chapel of the Knights Templar, Cressac, France, fill all four walls of the rectangular structure.

centuries as the last vestiges of crusading. Given this span of over five hundred years, it was only natural that crusading, as ideal and reality, was in constant flux. As an idea and an institution, the crusade took a century to develop into full theoretical and institutional form—essentially during the pontificate of Pope Innocent III (r. 1198–1216). Even after it had achieved this level of coherence, crusading continued to respond to new stimuli and challenges.

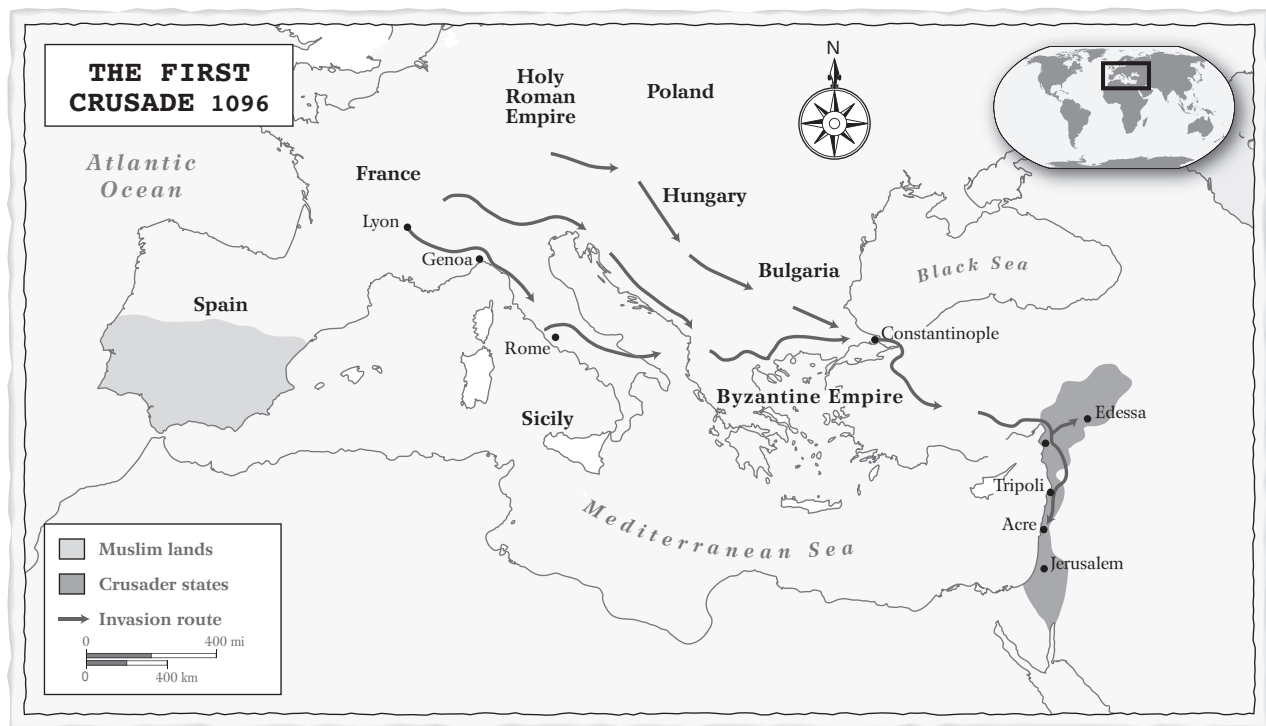
Despite such evolution, certain crusade constants were in place from the beginning and remained an integral part of crusading to the end. These were: (1) the belief that a crusade was a holy war waged on behalf of Jesus Christ and given legitimacy by the Roman papacy; (2) the certainty that one achieved a close relationship with Jesus through this act of love; (3) the belief that this was also a penitential act of self-sacrifice that earned spiritual merit, chief of which was a plenary indulgence, or full remission of the church-imposed penance due for sins; (4) the fact that its participants, women as well as men, enjoyed a special, quasi-clerical status by virtue of their crusade

vows; (5) and the obligation and right to wear a cross, thereby becoming a *crucesignatus*—one signed with a cross.

Throughout these centuries of crusading, hundreds, even thousands of crusades of every size, make-up, and objective were launched. In light of the personal nature of crusading—a penitential act of love and sacrifice—arguably every crusader was a crusade unto him- or herself. Given this reality, medieval Europeans did not assign numbers to their crusades—not even the major ones. Western historians of the nineteenth and early twentieth centuries, however, laboring under the assumption that true crusades were only those that were directed toward the liberation or defense of Jerusalem, could not resist the temptation to enumerate what they considered to be the major crusades, but even then they were not able to reach complete consensus regarding how they should number the crusades that took place after the first five, namely after 1221. Some counted seven major crusades between 1096 and 1272; others, as this article does, counted eight. Each was a large, papally blessed expedition that had as its intended mission (regardless of what diversions it might have taken) the engagement of Muslim enemies in or around the Holy Land. That noted, we can gain perspective on the inadequacy of this numbering system by first looking at a series of crusades in Iberia that are not counted among the canonical eight.

The Reconquista: Iberia's Crusades

The crusades can be said to have roots in the struggle in Iberia between Christians and Moors. In April 711 an Islamic force crossed the strait separating Africa and Spain, and by 715 most of the peninsula, except for the northwest, was in Muslim hands. Christian counterattack, however, was underway by century's end. These earliest battles were not crusades, but they were the opening rounds of the Reconquista, a series of Iberian wars between Muslims and Christians that became official crusades in the early twelfth century and lasted down to 1492. These early struggles, particularly those of the eleventh century, provided a



model for the First Crusade. In 1064 an army of Spaniards and French captured and plundered Barbastro, with the support of Pope Alexander II, who offered the soldiers a plenary indulgence for their efforts.

As Spain was the land that gave the papacy inspiration for the crusade, it was fitting that in 1118 Pope Gelasius II granted unambiguous crusader status to an expedition against Muslim Saragossa. For the almost four hundred years that followed, Christian crusaders, both Spanish and foreign, waged holy war against a variety of Islamic powers in the peninsula. In the process, crusading left a deep imprint on Iberian Christian culture. Finally, on 2 January 1492, the combined crusader forces of the Catholic monarchs, Ferdinand II of Aragon and Isabella I of Castile, captured Granada, the last Moorish stronghold on the peninsula.

One of the witnesses of the Catholic monarchs' triumphal entry into the city on 6 January was a Genoese sea captain who understood that now, with the dream of the total reconquest of Spain realized, the Catholic monarchs might fund his enterprise to reach the court of the Mongol Great Khan of Cathay by sailing west, little realizing that the Mongols had been

thrown out of China in 1368. In their ignorance, Columbus and many others believed that reestablishing direct contact with the Great Khan would be a positive step toward the recovery of Jerusalem—a natural extension of the victory at Granada.

The Jerusalem Journey: The "First Crusade"

In response to pleas for help from the Byzantine emperor, Alexius I, whose lands in Anatolia (present-day peninsular Turkey) were being lost to Seljuk Turkish advances, Pope Urban II delivered a sermon at Clermont in France on 27 November 1095 calling upon the knighthood of the West to aid the Christians of the East and also to liberate Jerusalem. Convinced that "God wills it," the pope offered everyone who made the journey to the East a full indulgence. Thus was born the First Crusade in 1096, a phenomenon that many Western contemporaries referred to as the "Jerusalem journey" and saw as a special type of penitential pilgrimage—an armed pilgrimage with military as well as spiritual objectives.

Between 1096 and 1101 three major waves of crusaders, each numbering in the tens of thousands, marched east. The first and third waves met with disaster, but the second wave, known also as the Crusade of the Great Lords, managed to capture Jerusalem on 15 July 1099.

Jerusalem and a number of other key sites captured by the second wave became the nuclei for four crusader states: the county of Edessa (1097–1150); the principality of Antioch (1098–1268); the kingdom of Jerusalem (1099–1291); and the county of Tripoli (1109–1289). Although free of control from any mother country in Europe, these four states of Outremer (the land across the sea) are often cited as examples of early European overseas colonialism. Whatever they were, the four states were Western Christian enclaves in lands where the populations were predominantly Eastern Christian and Muslim.

Some intermarriage and cultural exchange on a personal level took place, as was evident in the Franks (as all Western, or Latin, Christians were known to Easterners) who were born and raised in the crusader states. Called derisively *poulains* (young colts) by newcomers from the West, these native-born colonists were often indistinguishable in dress and manners from their non-Frankish neighbors.

Italian maritime cities, most notably Genoa, Pisa, and Venice, established huge trading emporiums in such key port cities as Acre (Palestine) and Tyre (south Lebanon), from which they transported to Europe Eastern goods in unprecedented quantity. The textiles, spices, dyes, slaves, and sugar that flowed into Europe not only enriched and made possible the growing power of these three commercial giants, they also sharpened the European taste for the goods of Asia.

One taste that knew no limits was the desire for sugar. Western colonists learned from their Muslim neighbors how to grow sugarcane on large slave plantations and how to refine it. In the late fifteenth century and following, Europeans would create sugar-producing slave plantations and mills off the west coast of Africa and in the Americas, thereby radically altering the demographic and ecological faces of these lands.

Despite *poulains*, Italian merchants, and sugar production, the crusader states were not major avenues for cultural exchanges between Western Europe and the Levant (the eastern shores of the Mediterranean). The great influx of ancient Greek and Islamic learning that entered Western Europe in the twelfth and thirteenth centuries, for example, originated in Muslim Spain and Sicily and not in the crusader East.

One of the most significant consequences of the crusader states is that all four, but especially the principality of Antioch, brought their Frankish lords into direct competition with the Byzantine Empire, whose emperor claimed lordship over lands now occupied by Westerners. In one of world history's most ironic turn of events, the crusades, which began as an effort to aid Eastern Christians, ended up dividing the Byzantine and Latin branches of Christendom.

On their way to the Holy Land, early crusaders passed through Byzantine territory, and the presence of often-disorganized crusader forces in an alien land resulted in a series of misunderstandings and conflicts, some quite bloody. The result was that by the Third Crusade (1188–1192) the emperor of Byzantium, Isaac II, entered into an apparent conspiracy with Saladin, sultan of Egypt and Syria, to harass and destroy German forces crossing Anatolia. Isaac's plan failed, and the Holy Roman Emperor, Frederick I, chose not to attack Constantinople. The imperial capital was not so fortunate a little more than a decade later. Due to unforeseen circumstances, the army and fleet of the Fourth Crusade (1202–1204) found itself attacking, capturing, and pillaging the city on 12–13 April 1204. This act, and the establishment of the Latin Empire of Constantinople, which held the city until August 1261, completed the rupture between the churches and peoples of Byzantium and the West.

One of the many significant results of the Fourth Crusade was the conquest of most of Greece and the Greek islands by Western crusader forces and the establishment of the Venetians (and later the Genoese) in the Black Sea, which became the West's point of entry into the markets of Central Asia and beyond. Portions of mainland Frankish Greece, as occupied Greece is often called, remained in Western hands



until the mid-fifteenth century, and some Greek islands were Western possessions until the end of the seventeenth century.

Meanwhile, Islam and the Christian West continued to struggle in the Holy Land and Egypt. Muslim conquest of Edessa in 1144 occasioned the Second Crusade (1147–1149), which failed to achieve any success in the East but which also became the opportunity for the crusader West to expand the scope of enemies against whom it waged holy war.

Crusades in the Baltic

Soldiers of the Second Crusade (1147–1149) fought on three fronts: Iberia, where they participated in the capture of Lisbon in 1147; the Middle East, where they failed miserably in an aborted attempt to take Damascus in 1148; and the Baltic, where Christian Europe began a series of crusades of conquest, colonization, and conversion that lasted from 1147 to 1525. During these almost four hundred years, German and Scandinavian crusaders waged war against various pagan and Christian peoples along Europe's northeastern frontier. Unlike the crusades in the Middle East, the Baltic Crusades contained an overt missionary purpose. Also, unlike the crusades in the Levant and the Reconquista, the Baltic Crusades were not fought to recover land previously held by Christians. These were wars of conquest and expansion, although they were often justified as defensive reactions to cross-border incursions. Unlike the crusader states of the Latin East, lands conquered along the Baltic were systematically settled and culturally transformed, at least to the point that their indigenous peoples were converted to Latin Christianity. First Wends (a Slavic people), Livs, Letts, and Estonians, and later Prussians and Finns, underwent conquest, dispossession, colonization, and conversion.

Not all of the Baltic Crusades ended in success. Due to intensified animosities between Rome and Constantinople, by the early thirteenth century the Roman Church considered all Christians who followed the Byzantine rite, including Russians and Ukrainians, to be schismatics who rejected the God-ordained authority of the Roman pope. Consequently,

from 1240 to 1242 Swedish, Danish, German, and Estonian crusaders participated in a series of papally authorized expeditions against the Christian Rus'. Led by Prince Alexander Nevsky of Novgorod, the Rus' threw back the invaders in 1242.

Reconquering Jerusalem

On 2 October 1187 the armies of Saladin retook Jerusalem and came close to driving the Franks totally into the sea, thereby occasioning the Third Crusade (1188–1192), the Crusade of the Kings, so-called because of the involvement of King Richard I Coeur de Lion (Lion-Hearted) of England, King Philip II of France, and Emperor Frederick I of Germany and Italy. The Third Crusade was unable to recapture Jerusalem, but it did reconquer significant portions of the Syrian-Palestinian coast, thereby giving the truncated crusader states another century of life. The capital of the kingdom of Jerusalem now shifted to the port city of Acre.

The North African Campaigns

By the end of the Third Crusade, Western strategists understood that Jerusalem could not be won without first conquering Egypt, the heart of the empire bequeathed by Saladin to his heirs. The main body of the Fourth Crusade (1202–1204) was headed for an assault on Egypt before it was diverted to Constantinople. The Fifth Crusade (1217–1221) reached Egypt, where it enjoyed early success, but then ended in disaster. The same was true of the Seventh Crusade (1248–1254), whereas the Eighth Crusade (1270–1272), the West's last major crusade before the fall of the crusader states, ended anticlimactically after the death outside Tunis of its principal leader, King Louis IX of France, the thirteenth century's most celebrated crusader, whom the Roman Catholic Church canonized as a saint in 1297.

New Types of Crusades

The only thirteenth-century crusades to the East to succeed in rewinning Jerusalem were the Sixth

Crusade (1227–1229), in which Emperor Frederick II successfully negotiated the transfer of Jerusalem into Frankish hands (1229–1239), and the so-called (and unnumbered) Barons' Crusade (1239–1241), in which crusader leaders again negotiated the return of Jerusalem, which Islamic forces had taken back in 1239. This time Christians held the city for only three years. In 1244 Muslim mercenaries out of Central Asia, the Khorezmian Turks, whom the Mongols had driven west, recaptured Jerusalem in a bloodbath, and the city remained in Muslim hands until 1917.

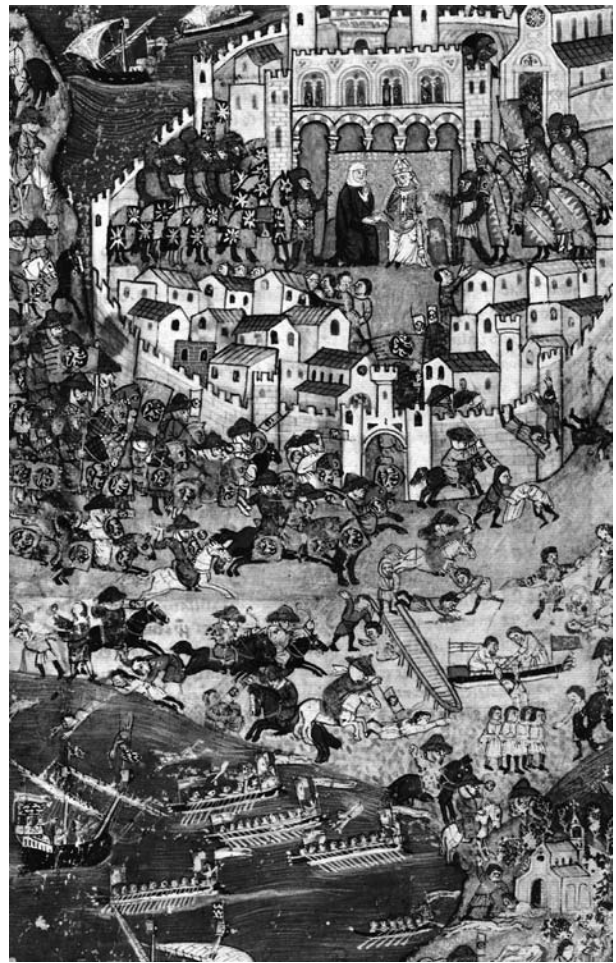
In the early thirteenth century the Roman papacy began to employ full-fledged crusades to fight enemies at home—heretics, such as the Cathars of southern France (the Albigensian Crusade of 1209–1229), and political enemies who threatened papal secular authority in Italy, such as Emperor Frederick II and his descendants (1240–1269). Crusades such as these continued well into early modern times, in such incarnations as the five Anti-Hussite Crusades (1420–1431) and various Holy Leagues formed by the papacy in the sixteenth century.

The Mongols

On another front, the thirteenth-century papacy sought first to launch crusades against and then to ally with a new force from the East—the Mongols, who overran large portions of Christian eastern Europe in a campaign that lasted from 1236 to 1242. Fortunately for the West, the Mongols withdrew back to the Volga in 1242. This withdrawal took place, however, only after they destroyed a combined Polish and German army and then a Hungarian army.

Tales of atrocities convinced western Europeans that the Mongols were the forces of the Antichrist as foretold in the Book of the Apocalypse. In response, Pope Gregory IX called a crusade against them in 1241, and his successor Innocent IV renewed it in 1243, but both were futile gestures. Western Europe was too engaged with internal struggles, namely papal crusades against Frederick II, to rouse itself against a foe, even a demonic foe, that had mysteriously retreated.

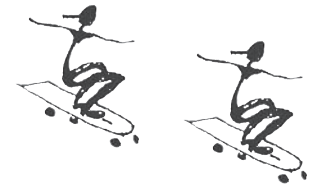
Fearing the Mongols would return, the pope and King Louis IX of France dispatched several missions



Anonymous. *The Fall of Tripoli to the Mamluks*. The battle occurred in April 1289; the painting dates to the late thirteenth or fourteenth century.

to them. Beginning in 1245 and lasting to 1255, the embassies were charged with discovering Mongol intentions and converting these so-called devil's horsemen to Catholic Christianity. The envoys, who were mainly Franciscan friars, encountered only Mongol indifference. To the Mongol mind, the West had only one option: submission.

Following the Mongol capture of Baghdad in 1258, these horsemen from the steppes of inner Asia drove as far west as northern Galilee (in modern Israel), where an Egyptian army defeated and turned them back at the Battle of Ayn Jalut in 1260. Given this setback, the Mongol *il-khans* (rulers subordinate to the Great Khan) of Persia were now willing to discuss an alliance with the Christian West against Islamic Egypt. Because the Mamluk sultans of Egypt were placing increasing pressure on the rapidly deteriorating crusader states, the West was willing to ally with



the Mongols against Islam, provided they converted to Christianity. With this dream in mind, King Louis IX of France set off on his ill-fated Eighth Crusade, confident that he and the emir of Tunis, who presumably would convert to Christianity, would link up with the Mongol *il-khan* of Persia, and together they would liberate Jerusalem.

In 1287 the *il-khan* of Persia dispatched an ambassador to the West to offer yet another alliance proposal. Known as Rabban (Master) Sauma, the envoy was a Turkish monk and native of northern China who belonged to the Assyrian Church of the East, an ancient branch of Christianity known incorrectly to those outside its fold as “Nestorianism.” Sauma met with the kings of France and England, as well with Pope Nicholas IV, and received warm expressions of encouragement from all three. He left Rome in April 1288 with several papal letters for the *il-khan*. Shortly thereafter, in 1289, the pope sent Friar John of Montecorvino to the *il-khan*’s court. Before anything could come of these negotiations, the *il-khan*, Arghun, died, and his successor embraced Islam in 1295. All hopes for a Mongol-Latin crusade were dashed.

Rebuffed by the Mongol *il-khanate* of Persia, Friar John set off for the court of the Mongol Great Khan in China in 1291, arriving there, by way of India, in 1294 or 1295. Too late to meet Khubilai Khan, who died in 1294, the Franciscan friar set up a mission church in the Mongol capital of Dadu, also known as Khanbalik, which was located in the heart of present-day Beijing. This mission, which later spread to southern China, enjoyed imperial protection until the Chinese evicted the Mongols in 1368. Although the succeeding Ming dynasty (1368–1644), which reasserted Chinese rule, was hostile to all foreign elements associated with the hated Mongols, this mission church probably continued to exist until the late fourteenth or early fifteenth century. In its more than a century of existence, the mission attracted only a few Chinese converts, but it served resident merchants from the West—largely Italians—and it also succeeded in convincing a number of “Nestorian” Turks to accept the authority and rites of the Roman Church.

After 1294–1295 the Mongol Empire underwent substantial changes for the worse, and before the

fourteenth century ended, the empire was dead. Christian Europe, however, was unaware of the Mongol Empire’s fate and never forgot the dream of linking up with the Great Khan. Many motives drove Columbus to sail west toward the Indies, but certainly one of them was the dream of a crusade alliance with the Mongols against Islam.

Early Modern Explorations and Colonization

Similar crusade motives helped drive Portuguese explorations along the African coast. Henry, prince of Portugal, known as the Navigator (1394–1460), used the resources of the Order of Christ, a Portuguese crusader-military order founded in 1319, to finance the fleets that he sent out. The prince, who crusaded in North Africa in 1415, 1437, and 1458, justified this use of crusade-dedicated resources because, as his contemporary biographer, Gomes Eannes de Azurara, noted, he wanted to know the extent of the lands held by the Muslims, and he sought yet-unknown Christian princes who would ally with Portugal in the struggle against Islam.

In like manner, although the Spanish conquistadors who conquered major portions of the Americas and the Portuguese adventurers who sailed though the Indian Ocean were driven by many motives, not least of which was a desire for gold and glory, it is not difficult to find in their accounts crusading themes and sentiments that were already more than four hundred years old.

Afonso Albuquerque, Portuguese viceroy of India, a *commendador* of the Order of Santiago, an Iberian crusader-military order that had been founded in León in 1170, and who had fought Muslims in Morocco, the Atlantic, and Italy prior to going to the Indian Ocean, won a singular victory over an Arab fleet off of Hormuz in 1507. According to a posthumous compilation of his papers, when Albuquerque’s sailors fished the bodies of Muslim sailors from the waters, they found about eighty who had been killed by arrows, although no one in the Portuguese fleet had possessed a bow or knew how to use one. The source then notes: “It seems that Our Lord desired

on that day to perform this miracle so that He might show the captains, who shrank from engaging in this business, how certain of victory over their enemies are they who fight with true faith against infidels.” That putative miracle and sentiment could just as easily have been recorded and expressed by any chronicler of the First Crusade. But a sixteenth-century poet, Luís Vaz de Camões, who had lost an eye fighting Moors in North Africa, was as impressed by this reported incident as any twelfth-century crusade historian would have been. He noted in his great national epic, the *Lusiads*, which placed the exploits of Portuguese mariners in the Indian Ocean into the context of the crusades, that this miracle showed “How God will fight for them who fight for Him.”

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See also Byzantine Empire; Islamic World; War and Religion; Warfare—Europe; Warfare—Islamic World

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Cultural Areas

Social units with similar features—such as language, religion, kinship, or subsistence practices—are often associated with particular geographic regions. These cultural areas can vary greatly in size, and often the affinities that bind a cultural group transform over time due to migration, diffusion of ideas and practices, and intermarriage. Despite these difficulties, the concept of a cultural area can be useful in describing certain historic groups.

Human cultural groups, however defined, can always be historically traced to particular places and generally remain associated with specific geographical areas. Such *cultural areas* can be defined at a broad range of spatial scales. In tribal social formations, a distinctive cultural group might encompass no more than a single village, whereas in complex societies an identifiable cultural group can extend across millions of square miles. Far-reaching cultural areas, however, can always be divided into smaller (sub)cultural regions. By the same token, small cultural groups can usually be agglomerated to yield larger, if less coherent, cultural areas. As a result, no unambiguous criteria for fixing the scale of cultural and geographical areas have ever been established. How such areas are defined and bounded depends on the context.

Historically, the most important criteria for differentiating cultural areas have been affinities deriving from language, religion, kinship, and subsistence practices. Often, these different attributes of social life reinforce each other, giving rise to more or less holistic cultural assemblages. In other circumstances, however, they may run counter to each other.

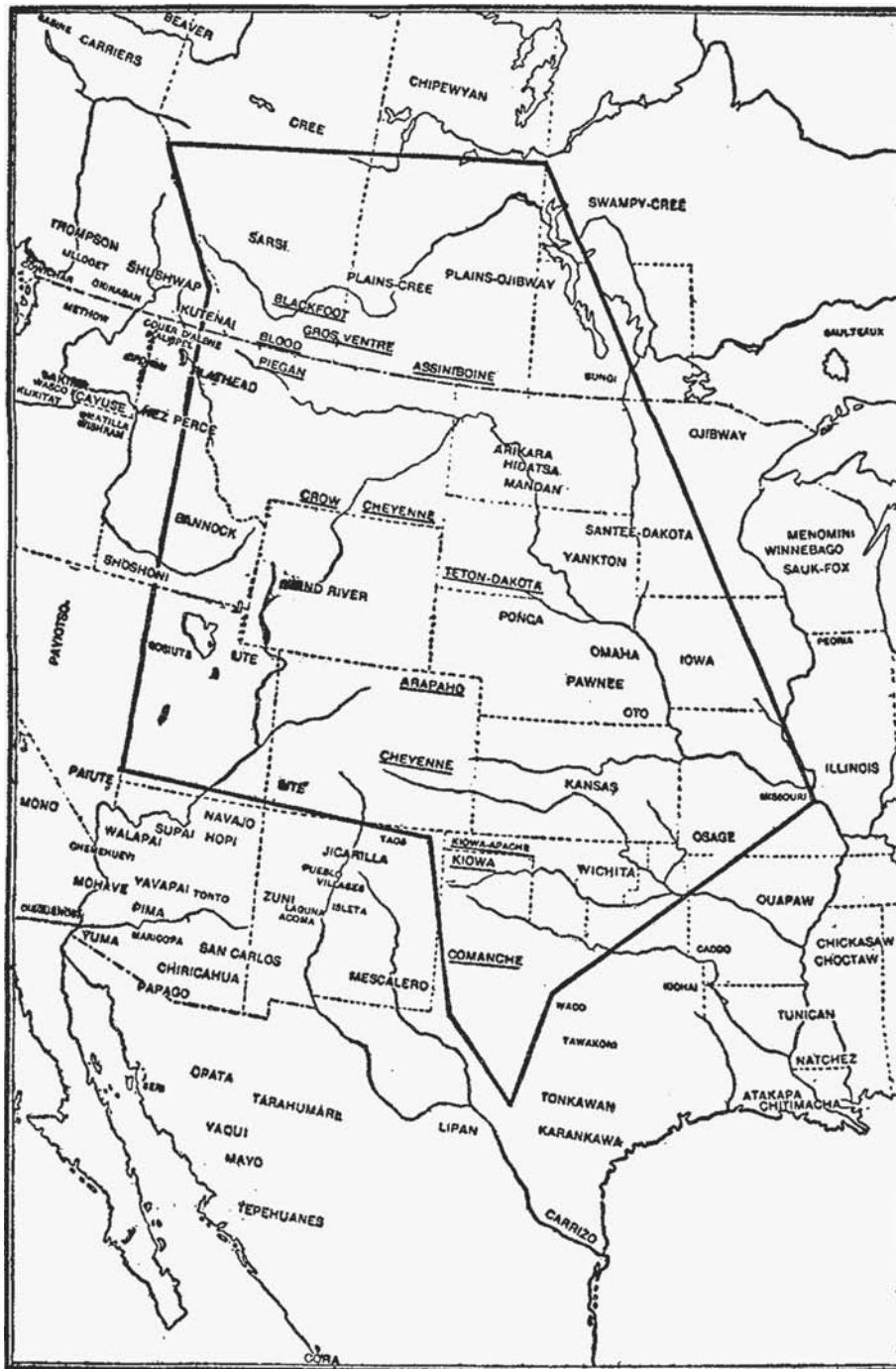
A linguistic community, for example, may be split by differences of faith, whereas a region united by religion may be divided by language. The multifaceted nature of human culture thus confounds the delineation of discrete cultural and geographic areas.

Even relatively nonambiguous cultural groups may be difficult to geographically bound. Cultural patterns usually morph gradually over distance, and even if the change is abrupt, border zones typically have their own personalities. Both the constitution and the distribution of cultural groups, moreover, transform over time, owing to such processes as migration, diffusion of ideas and practices, and intermarriage. Disjunct cultural assemblages, in which a single group occupies a number of separate territories, may result. Conversely, in cosmopolitan environments, a single city may contain a welter of distinctive cultural communities, which may or may not occupy identifiable neighborhoods.

As a result of such complexities, the delineation of geographically bounded cultural areas is always a matter of approximation. Different authors can construct divergent but equally valid regionalization schemes, and even a given author might map dissimilar cultural areas in the same place depending on the issues being considered. Further complications result from the fact that the peoples under investigation may employ their own systems of cultural classification and geographical division.

Cultural and Natural Regions

In earlier decades, scholars often linked cultural groups tightly to their physical environments, delineating distinctive regions that were purportedly



The U.S. anthropologist Clark Wissler (1870–1947) designated the Plains cultural area of indigenous North America, grouping tribes that shared distinctive traits.

definable by both human and natural criteria. The underlying postulate was that different climates demanded different ways of life, giving rise to distinctive cultural assemblages. This form of analysis was carried out most fully in regard to pre-Columbian North America, where ethnographers mapped a series of extensive, environmentally determined cultural regions. The mild, humid area extending from

northwestern California to southeastern Alaska, for example, was identified as the province of the Northwest Coastal Indians. Here, an abundance of wood and salmon, coupled with a paucity of most other resources, led to a distinctive maritime way of life. The constituent tribes of this region spoke languages belonging to a number of unrelated families, indicating origins in distant places. Coming together in this

particular environment, where they faced the same challenges, they were thought to have necessarily developed a common cultural system, albeit one marked by localized particularities. Similar arguments were made about the culturally similar inhabitants of the other natural regions of North America.

One key question remained open: were the cultural similarities that characterized such areas the result of adaptation to particular natural environments, or had they arisen less systematically from proximity and exchange? In some parts of pre-Columbian North America, groups belonging to distinct cultural traditions inhabited the same places, casting doubt on the environmental determinism implicit in the “cultural and natural areas” model. In the Southwest, for example, the agricultural “Pueblo” Indians belonged to one cultural complex while the hunting and gathering Apaches, who were more recent immigrants, belonged to another. Later scholarship, moreover, tended to question whether the cultural unity of these naturally defined areas extended much beyond narrow issues of subsistence.

Cultural and Linguistic Areas

In certain circumstances, the spread of a single population over a large territory can give rise to a relatively coherent cultural area. Since the expanding population carries its language with it, cultural areas of this type are linguistically marked. A notable example is Polynesia, which covers a vast expanse of the Pacific, from New Zealand in the southwest to Hawaii in the north to Easter Island in the southeast. All Polynesians are descended from a single ancestral population, all have similar (although not identical) cultural patterns, and all speak closely related languages. But while Polynesia is one of the world’s clearest examples of a cultural region, even it has some fuzzy boundaries. Polynesian “outliers,” for example, are encountered on a few small islands that lie within the bounds of the so-called Melanesian cultural realm, whereas in the case of Polynesian Tonga and neighboring Melanesian Fiji, cultural interchange has resulted in striking hybridity.

Large cultural groups established by descent from a common ancestral population tend to fade over time in the absence of unifying institutions or political systems. Social intercourse with neighboring peoples along the frontiers, the drift of cultural evolution, and the challenges of living in different natural environments result in gradual divergence. Linguistic families, which by definition derive from single ancestral groups, therefore seldom form coherent cultural areas. While one can, for example, map a family of Turkic languages over vast expanses of Eurasia, it is difficult to correlate this with any sort of distinctive cultural patterns—although politically motivated attempts to do so, under the guise of pan-Turkism, have been made. One group of Turks, the Sakha (or Yakuts), for example, left their pastoral Central Asian homeland long ago for the forests of central Siberia, where they came into contact with the Evenki and other taiga dwellers. Although aspects of a proto-Turkic culture are found among the Sakha, their cultural attributes in general are quite distinctive from those of other members of their linguistic family. The Sakha are further differentiated from most other Turkic peoples by the fact that they did not adopt Islam and were never influenced by the cultural norms of Persian civilization. Among most Central Asian Turks, on the other hand, Persian and Islamic influences were strong enough to generate, according to the sociocultural anthropologist Robert L. Canfield (1991), a distinctive Turko-Persian cultural sphere.

As the “Turko-Persian” example shows, among state-level societies common political or religious institutions can cement together previously distinct peoples, spanning linguistic and environmental divides to generate novel agglomerations. Due to the presence of such integrating mechanisms, complex societies often span larger cultural areas, and more stable ones, than small-scale social orders. Yet even in the case of well-integrated, complex societies, cultural areas change their contours and structures over time. The historical geography of human civilization reveals a continual melding and reconfiguring of cultural assemblages over space.



Cultural Areas in the Ancient World

Lower Mesopotamia, the world's first locus of urbanism, provides a good example. In this well-demarcated area, independent Sumerian-speaking city-states initially formed a coherent cultural sphere. Over time, however, aspects of Sumerian civilization (including urbanism, literacy, and religious ideas) spread to neighboring peoples, such as the Elamites and the Akkadians, who spoke non-Sumerian languages. Eventually, Sumerian itself disappeared, but many elements originally associated with Sumerian culture, such as cuneiform writing, had diffused over a broad zone, extending from the eastern Mediterranean to the Iranian Plateau. As a result, the Bronze Age Near East can either be depicted as encompassing a single cultural area or as being divided into numerous smaller regions. Ancient Egypt, on the other hand, partially isolated by intervening deserts and usually unified politically, formed a more stable cultural zone. But even in this case, not all cultural boundaries were clearly marked. Nubia, for example, situated up the Nile River beyond several imposing cataracts, shared many aspects of Egyptian culture while developing along its own political lines.

As the ancient Greeks borrowed extensively from both the Egyptians and the Phoenicians, one can place the classical Greek world within the ambit of an "Eastern Mediterranean" cultural sphere. At a finer scale of analysis, however, the Greeks occupied their own cultural area. They were unified by a common language and literature, by common religious ideas and cultic practices, and by common institutions, such as the Olympic games. Although they often stressed their own division into dialect-based subcultures (Ionians, Dorians, Aeolians, and so on), supposedly descended from separate ancestral groups, the Greeks also emphasized their cultural unity. The cultural area associated with Greek civilization was, from a land-based perspective, geographically discontinuous, spread over much of the northern and part of the southern Mediterranean littoral, as well as the Black Sea. The territorial boundaries of the Greek world were never without controversy. Debates raged,

and still occasionally flare, over whether nonurban peoples speaking Greek dialects, such as the Macedonians, should really be considered Greek. The position of non-Greek but extensively Hellenized areas, such as Caria in Asia Minor, also remained ambiguous.

The Greek world, for all of its cultural bonds, was never politically united. Virtually all of it, however, would later be subsumed within the Roman Empire. The Roman Empire in its heyday lacked the linguistic, cultic, and quotidian features that unified the Greek sphere. But common political institutions, culminating with the granting of Roman citizenship to all free males across the empire in 212 CE, did forge a kind of unity, and it would do injustice to the empire to deny it status as a cultural area. Cultural union deepened with the spread of Christianity even as political cohesion faltered in the fourth and fifth centuries. At the same time, the diffusion of Christianity outside of the empire, and its subsequent adoption as the religion of state in Nubia, Ethiopia, Armenia, and Georgia, enlarged while simultaneously diluting this cultural domain. The division of the empire into Eastern and Western segments in the fourth century, followed by the divergent political and religious trajectories of Rome and Byzantium, gradually reconfigured the cultural geography of the entire area. Some scholars argue that the main cultural divide in Europe today is that separating the West of Catholic and Protestant Christian heritage from the East of Orthodox background—a division that is sometimes dated to the fourth-century partition of the Roman Empire.

Asian Cultural Areas

In east Asia, an extensive cultural area emerged through a combination of political might and the diffusion of literacy and ideology. Confucianism, Mahayana Buddhism, and a belief in the preeminence of the Chinese imperial system were key features of this emergent sphere. As the Chinese state expanded south of the Yangzi (Chang) Valley during the Han dynasty (206 BCE–220 CE), these cultural patterns

spread with it, as far south as northern Vietnam. Although Vietnam was to reclaim its independence in the tenth century CE, it remained within the orbit of “Confucian Civilization,” continuing, for example, to employ the Chinese ideographic writing system until colonized by France. To the east, Korea came under the influence, both political and cultural, of China, especially during the Tang dynasty (618–907 CE). Although Japan never succumbed to Chinese rule, it too adopted many aspects of Confucianism, the Chinese writing system, and a host of other ideas and practices of Chinese provenance. The cultural commonalities so generated have proved long lasting. Today, many scholars depict an East Asian cultural area composed of China (excluding Tibet and Xinjiang), Korea, Japan, and—in some versions—Vietnam.

In South Asia, by contrast, an extensive cultural area emerged in the absence of political unification. During the first millennium BCE, the complex of religious ideas and practices now known as Hinduism began to coalesce in the Ganges Valley and then spread across the rest of the Indian subcontinent. By the early centuries of the common era, South Asian forms of high culture had diffused through much of Southeast Asia as well. This evolving cultural region was fused together by common spiritual ideas (such as the transmigration of souls), caste ideology and practices, and the use of Sanskrit as a sacred language of the elite. Many of its key features were to be challenged internally by Buddhism and externally by Islam, resulting in additional rounds of cultural transformation and geographical reconfiguration. Eventually, Southeast Asia was to be largely detached from the field of South Asian cultural influence. Some scholars would argue the same for present-day Pakistan, emphasizing the distinctiveness of its overwhelming Muslim population. Those who regard Pakistan as remaining within a culturally defined South Asian region, on the other hand, point to the fact that many aspects of everyday culture—such as diet, music, and language—continue to tie together the

peoples living on either side of the India–Pakistan border.

The Historical Emergence of New Cultural Areas

The spread of Islam during and after the seventh century demonstrates how new cultural areas can emerge explosively, linking together formerly separate regions through both cultural synthesis and the spread of novel ideas. As Islam fused both a legal code and a set of political ideals with religious beliefs and practices, it proved particularly potent for generating a new, dynamic culture area. In the process, the previously distinct Persian zone was substantially merged with that of the Arabic-speaking world, although in many respects Iran retained its cultural distinctions. As Islam expanded, it came into contact with many different cultural traditions, resulting in the development of numerous hybrid forms. Debates are therefore conducted over whether an “Islamic cultural area” should be limited to the historical core of the Middle East and North Africa or whether it should cover the entire Muslim world. Such disputes are made more complex by the contemporary spread of more orthodox forms of Islam into peripheral areas, such as Java, that were formerly marked by profound syncretism.

European imperialism also created in a relatively brief span a number of distinctive cultural areas. Today, for example, Africa is often divided into Francophone, Anglophone, and Lusophone (i.e., Portuguese-speaking) zones, based on the languages of elite and official communication. Similarly, Latin America is usually mapped as its own cultural area. But, as in the case of other culturally defined regions, “Latin America” is not without controversy. Argentines, for example, have often wanted to emphasize their European roots at the expense of a pan–Latin American identity, whereas many scholars now argue that in large portions of South and Central America, the indigenous cultural imprint remains more substantial than the “Latin” one.

Areas or Networks? New Geographical Approaches

As the example of Latin America shows, the mapping of cultural areas is always ideologically fraught and intellectually challenging. As a result, many scholars now prefer to avoid positing discrete cultural areas of any sort, preferring to emphasize cross-cultural networks and patterns of globalization. This is especially true in regard to the contemporary world, supposedly characterized by a postmodern condition of constant flux and the continual transgression of all purported boundaries. Yet even in ancient times, similar processes operated, leaving all cultural areas unstable in content and uncertain in extent. Cultural areas are thus perhaps best thought of as geographic constructions rather than as preexisting entities that can be discovered through empirical analysis.

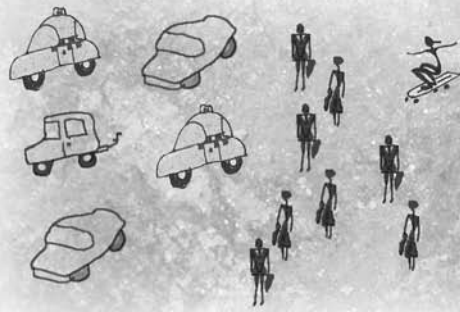
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Stanford University

See also Africa; Afro-Eurasia; Americas, The; Cartography; Europe; Europe, Eastern; Eurasia, Inner; Frontiers; Greece, Ancient; Islamic World; Mesoamerica; Mesopotamia

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Culture

The term *culture* has been broadly used to denote the identity-shaping beliefs, activities, institutions, and artifacts resulting from human interaction. Cultures are subject to constant change over time from environmental forces, political struggles, and social inequalities. Although human populations may bond through shared cultural features, cultures themselves can resist easy categorization when they exhibit human actions that are contradictory, ambiguous, and disorderly.

The concept of culture occupies an important place both in academia and everyday usage. Since culture means so many things at once, it is hard to define in simple terms. In fact, one 1960s text noted that there were at least 150 definitions of the term in use. The term has for long been used in a variety of contexts to describe the activities, beliefs, institutions, and artifacts produced out of the interactions among human beings. Culture understood in terms of meaningful actions can be located among both human and nonhuman species. Among humans, culture can be located at many levels of human interaction, from the smallest of human groups (such as a nuclear family) to successively larger units of human organization (communities, tribes, ethnicities, societies, nations, and civilizations). It is culture that imparts a sense of identity to human beings.

Perhaps it is the discipline of modern anthropology that has been expressly concerned with defining the term. Over the past hundred years or so anthropologists have debated the relevance of this term and generated a variety of definitions on both sides of the Atlantic. Some, like David Schneider, Claude Lévi-

Strauss, and A. R. Radcliffe-Brown, despite differences, tended to view culture in terms of underlying structures whose order could be uncovered. Others like Ruth Benedict and Margaret Mead associated culture with personality types. After World War II, greater attention began to be focused on the changing and disorderly aspects of culture that had for long been ignored by most anthropologists. Scholars like Clifford Geertz and the Comaroffs (John and Jean) began to study culture in terms of the meanings and symbolic actions of human beings over time.

Today, there is a general consensus that cultures are profoundly shaped by history, that is, they are subject to constant change over time. Cultures are shaped by environmental forces, political struggles, and social inequalities. Cultural features might be widely shared among human populations. At the same time, they may also exhibit human meanings and actions that are contradictory, ambiguous, and disorderly, and which resist easy categorization.

Culture and the Study of World History

The concept of culture occupies a prominent place in the writings of world historians. So pervasive is the presence of this concept in the study of world history that even if not explicitly used or defined, it usually forms the basis for the understanding of many associated concepts such as society, nation, civilization, regime, and world system. World historians frequently use *culture* to highlight the unique features, achievements, and activities that characterize these human groups. The term has also been extended to distinguish broad patterns of sustained interactions between societies. Obviously, much depends on the



A church in Port Moresby, Papua New Guinea, features traditional cult-house designs.

particular focus, method, objectives, and audiences of the writers in question. Despite the widespread use of the term, however, world historians have yet to subject it to sustained theoretical reflection. In general, depictions of culture in world history tend to take shape within three broad types of writings, namely, universal histories, themed world histories, and microlevel world histories.

Universal Histories

Universal histories have found expression in a number of works since the nineteenth century. Such works have typically been interested in developing grand-scale interpretations about the rise and fall of

civilizations in human history. Borrowing extensively from such fields as archaeology, cosmology, economics, geology, politics, and sociology, writers such as Oswald Spengler (1880–1936) and Arnold Toynbee (1889–1975) produced synoptic histories of the world that transcended national histories. These writers were primarily concerned with uncovering laws that governed the rise and fall of civilizations. Their accounts of the history of the world became the study of birth and demise of organic and bounded units called civilizations.

In these universal histories, culture often became equated with the political, intellectual, and artistic achievements that defined civilizations. Oswald Spengler made distinctions between civilization and culture, indicating that the former represented the latter in its last stages prior to its plunging into decline. For others, the role of culture was subordinated to the influence of the economy and class struggle (in the case of Karl Marx and Friedrich Engels) or to abstract notions of a progressively advancing universal human spirit (in the case of G. W. F. Hegel). Given the scale of interpretation and the sweeping generalizations being made, it is hardly surprising that there was little explicit theorization of culture. The minute details of cultural production and transformation were invariably ignored in favor of making broad statements about the characteristic features of civilizations. Europe and the elite classes received a greater share of attention than did other parts of the world or more oppressed populations. Although treatments of culture remain to be fully developed in such accounts, ambitious world histories of this genre continue to be written, and with impressive (though sometimes controversial) results. Notable instances of such work can be found in Max Weber's work on the connections between the Protestant ethic and the rise of a capitalist ethic in western Europe. More recently the works of David Landes and Samuel Huntington continue in this idealist vein with "culture" driving economic development and political conflict on a world historical scale.



Japanese print, mid-1800s. Cultures collide as an Englishman dances to *shamisen* music.

Themed Histories

Following World War II world historians began increasingly to concentrate on specific themes of world historical significance. They examined specific human activities and patterns of interactions (political conquests, long-distance trading, nomadic migrations, the spread of religions) that could be discerned over long periods of time and vast regions of the earth. The focus was on themes of global significance rather than on constructing grand accounts of the world that tried to explain the whole of human history within a single intellectual framework.

One set of writings tried to gauge the production, transmission, and experiences of social and economic

inequality between nations. In the 1960s and early 1970s, a number of scholars took up projects that tried to explain the rise of the West and the continued modernization (or lack thereof) of the world's nations through economic development. The treatment of culture in such accounts was uneven. In some writings culture became a residual category, where activities pertaining to the arts, literature, and the intellect, were deposited. In others, the role of culture was subordinated to the study of political and economic forces. Once again, there was an excessive focus on Europe.

Over the past decade or so the terms of this debate have changed considerably as scholars began to write more sophisticated and non-Eurocentric studies examining why Europe's history diverged so drastically from that of the rest of the world. Greater economic agency and centrality have been given to other parts of the world, especially Asia. These historians have usually given primacy to political and economic factors when explaining the great divergence in the development of European and non-European societies since the eighteenth century. Few writers give preeminence to culture as an important determinant of the great divergence between Europe and the rest of the world (but see David Landes's 1998 *The Wealth and Poverty of Nations*). In this genre of writings culture has come to stand for attitudes, ideologies, and values that distinguish one society from another.

In the 1970s another genre of world-historical writings began to emerge that focused on world-systems analysis. Operating on many levels and over many time periods, these scholars tried to map the economic connections that linked vast regions of the globe. The emphasis once again was on the role of political, social, and economic factors in the formation of global patterns of economic exchange. In Wallersteinian world-system studies, it is the nature of the world system that shapes culture, which usually leaves culture as the ideological by-product of capitalism (see Immanuel Wallerstein's 1991 *Geopolitics and Geoculture: Essays on the Changing World System*).

Another focus of world-history studies has been cross-cultural encounters. These writings examine processes that transcend geographical and political

boundaries to connect societies or cultures spread over vast distances and times. Some of the most interesting writing on culture in contemporary world history has its roots in this influential body of work. These writers convincingly argue that cross-cultural connections have been one of the principal agents of change, with far-reaching consequences for our planet's history. Over millennia, such cross-cultural flows have resulted in the movement of peoples, ideas, objects, and even microbes over vast regions of the planet, connecting and transforming diverse societies. Studies have examined ecological exchanges, technology transfer, trade networks, migrations, religious conversions, circuits of pilgrimage, processes of imperialism and globalization, and frontiers as zones of exchange. The works have moved from simple explanations of one-sided diffusion to two-way processes of mutual exchange and transformation. Yet while the phrase *cross-cultural interactions* finds frequent expression in world historical writings, there is little discussion about what is cultural about these interactions. In many writings *culture* becomes a synonym for *society*. In others, the term *culture* may be used to refer to human activities, such as migration and conquest, through which ideas, objects, and peoples are exchanged. But while the interactions between cultures are mapped in detail, most world historians have hesitated to provide conceptual clarifications for the term *culture* that take into account wider debates in other fields (though there are exceptions).

This is not to say that engagements between disciplines such as history and anthropology have yet to take place. After the 1970s, the traditional boundaries between anthropology and history began to dissolve as scholars realized that culture and history could not be separated. Historians began to read the works of cultural anthropologists, works in which culture was seen in terms of the meanings embedded in human interactions. In the decades that followed there was considerable debate about the politics of ethnographic writing, and even about the salience of the term *culture*. This brought the concept of culture to the center of academic debate and writing. These developments, along with borrowings from poststructuralist and

postcolonial writings in the 1980s and 1990s, served to bring about a democratization of history and anthropology that resulted in the inclusion of the voices of women, minorities, and oppressed peoples. Sensitive accounts of the dynamics of culture, power, history, and resistance followed. The combined result of this intellectual ferment was the emergence of a new genre of sophisticated writings that is sometimes called the “new cultural history.” Culture was no longer seen as static and organic but as highly factor-centered, ordered, even intuitive, and yet prone to moments of disorder and flux. In these new writings there is increased emphasis on microlevel studies of the creation, transmission, and experience of culture within specific historical contexts.

Microlevel Histories

The rise of the new cultural history has allowed the emergence of a third genre of culturally oriented scholarship in world history, one that explores world-historical themes through microlevel analyses that show the interpenetration of global and local forces. Unlike in past scholarship, global forces are not seen as occupying some higher level of existence that is separate from local forces. The new approach proposes that global forces manifest themselves in local situations in the everyday lives of people within specific historical contexts; the study of culture becomes the study of the interpenetration of the global and the local. Writings of this genre have focused on themes such as conversion, colonialism, globalization, and capitalism. They provide sophisticated treatments of culture—now viewed as a shifting arena of meanings and actions shaped in a variety of historical contexts. The emphasis is on revealing the complex ways in which human beings come to terms with the conditions of existence that shape their lives.

Culture and Other World Historical Traditions

The study of culture in world history will undoubtedly gradually extend to societies outside Europe that



have developed their own rich understandings of the human condition. Orally and textually preserved worldviews from non-Western societies around the world have focused on such subjects as civilizations, jurisprudence, trade, science, philosophy, politics, theology, literature, and geography. Hindu and Buddhist cosmographies, for example, constructed their own world systems based on multiple realms of heavens, hells, and various kinds of beings that interacted with human beings. Royal historians, travelers, intellectuals, and common folk from around the world have spoken and written on topics that reflected their own understandings of culture, power, and history. For instance, the fourteenth-century Islamic scholar Ibn Khaldun (1332–1406) observed in his universal history, the *Muqaddimah*, that the study of human social organization formed an essential part of the scientific study of civilization. While such works might be termed “ahistorical” by the standards of modern historical scholarship, there is an increasing awareness that such accounts need to be explained on their own terms, separate from Western traditions of historical analysis.

The Future of Culture in World History

Culture has been variously defined in relation to communities, societies, states, nations, empires, and civilizations and world systems. The descriptions of culture have ranged from the simple to the complex. While it is generally recognized that culture finds its best expression in detailed local and regional histories, there has been little discussion about the use of the term at the level of global or planetary studies. Even today, many world histories treat culture as a residual field of human activities and artifacts that cannot be labeled political, social, or economic. On other occasions it has signified the presence of broad patterns of interactions between human collectives, with little clarification on what was “cultural” about these interactions. For these reasons, a number of questions remain for world historians. Is the concept

of culture even appropriate for universal histories, with their broad sweep and general focus? Do world historians need to develop another term? What distinguishes the concept of culture from, for example, the concept of society?

Questionable too is the continued anchoring of culture to continental and area-studies schemes of world geography. More recently there have been attempts to revise these metageographical schemes and construct regions that are more representative of the cultures they claim to represent. Ultimately, the question of culture will depend on where one wants to locate the world in world history—at the level of the global, in the manifestation of broad interactions and processes, or at the level of the local. Either way, world historians writing in the twenty-first century will increasingly strive to deploy a concept of culture (or its associated terms) that attempts to represent both the particular and the general as they write about the connections that have bound human beings to one another and to their environments for millennia across this diverse planet. Culture continues to be relevant to world history, and world historians are beginning to engage the term with increasing rigor.

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See also Anthropology; Ethnocentrism

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If we are to achieve a richer culture, rich in contrasting values, we must recognize the whole gamut of human potentialities, and so weave a less arbitrary social fabric, one in which each diverse human gift will find a fitting place. • **Margaret Mead (1901–1978)**

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Currency

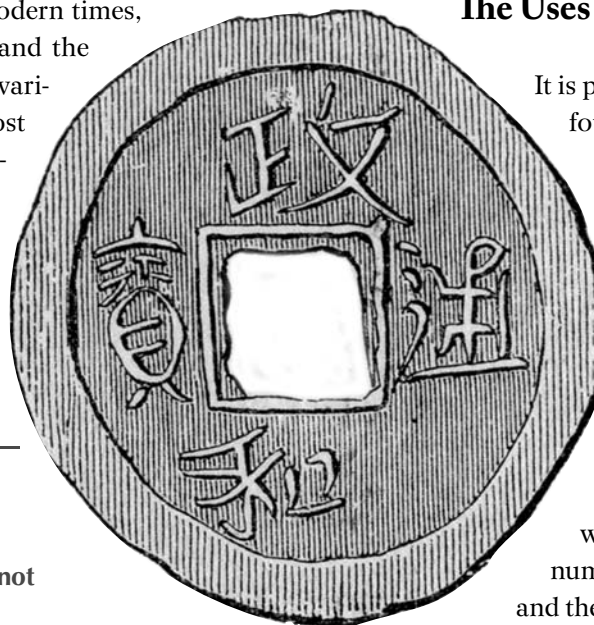
The use of currency aids in the exchange of goods and services by distinguishing the transactions of buying and selling from barter, setting a standard of value, and allowing the accumulation of wealth. But before an object may be used as money—whether it is a coin, bank note, shell, grain, or (in modern systems) an electronic transfer—the community must accept it as such.

Money may be defined as a set of objects whose prime use is to facilitate economic exchange. The identity of these objects and the range of functions they may perform are determined by the community in which the exchanges occur. In modern Western capitalist societies, coins and banknotes serve as money; they are issued under the authority of governments and accepted for commercial transactions by the population. Prior to modern times, traditional societies in Africa, Asia, and the Pacific and Indian oceans employed various and differing money forms; the most famous were cowry shells, whose scientific name (*cuprea moneta*) stems from the popularity of their use as money. We usually refer to earlier money forms that are not coins or banknotes as “primitive money.”

China’s monetary system employed metal objects as well as animals, produce, and shells from the twelfth century BCE, but disc-shaped coins did not appear until the third century BCE.

The anthropologist Karl Polanyi argued that money is “a system of symbols, similar to language, writing or weights and measures” (1968, 175). The members of a community, as buyers and sellers, must give the role of money to particular objects (and continue to accept them as money). But there are no objects that are of themselves “money.” A disc of metal or a piece of paper becomes money because a community accepts its value as money. This is easy to see in a modern currency system—in which coins and pieces of paper only represent the sums of money they are worth (and are termed fiduciary, or relying on trust). In the nineteenth century and earlier, coins were issued in gold and silver, and the metal was worth only a little less than the face value of the coin. But the use of gold and silver as money ultimately depends on the agreement that these metals have a value.

The Uses of Money



It is possible to recognize four main uses for money. First, and perhaps most important, money acts as a medium of exchange. It is possible to exchange (sell) an object for an agreed value in money (such as a weight in silver or a number of silver coins) and then to exchange (buy)

Wealth is often defined as a large amount of money, since it is with money that the gaining of wealth, and trade, are concerned. But at other times money seems to be nonsense and a mere convention with no real existence in nature . . . • Aristotle (384–322 BCE)



An illustration of an intricately designed copper plate of the Tsimshian Native American peoples of the northwest coast. Copper plates were traded for blankets, skins, and oil.

in a different place and at a different time very different objects or services with that money. Money thus separates the transactions of buying and selling (which are combined in exchange by barter).

Second, money acts as a standard of value. It enables the value of different objects and services to be expressed according to a set scale or measure. The value of a cow or the services of a cobbler, for example, can be compared according to their value expressed in money (such as dollars and cents). The existence of money then allows value to be expressed

in terms of a unit of account. Linked to this is the third use: money can facilitate the storage of wealth. Wealth can be stored in banks, for example, through the deposit of a quantifiable number of money objects, such as coins. Finally, money provides a means of payment. It allows precise amounts to be paid to a wide range of people for a wide range of goods and services.

Money and Coinage

The European tradition of money is firmly tied to the history of coinage. The English word *money* is ultimately derived from the Latin *moneta*, which could mean coinage as well as the mint in which coins were produced. But money does not equal coinage. While the main functions of money have remained the same, the forms of money and their roles have evolved and changed. We should resist the assumption that money has always been understood and used as we understand and use it today. The use of precious metals, as well as the use of animals and produce, as money can be traced back to the third millennium BCE. Hoards of pieces of silver, some in earthenware vessels, have been found in Sumerian and Akkadian settlements from Mesopotamia. Cuneiform writing on clay tablets from Nippur in Sumer at this time provide the earliest known records of transactions using weighed silver. Other tablets from Nippur record loans and payments valued in terms of grain or cattle. In the second millennium BCE, the Mycenaean Greeks employed cattle as a form of money; in Homer's poem *The Iliad* we find armor, for example, and even skilled craftsmen captured in war, valued in terms of oxen.

The creation of coinage was an important step in the development of money. Coins may be defined as pieces of metal that are marked with a design to show the authority under which they were issued, and which indicate that they have legal force as money. They typically conform to standards of weight and fineness, but the key aspect is that they be marked out by the issuer (who is very often the government), as money whose value is guaranteed. The kings of Lydia in Anatolia (modern-day peninsular Turkey) were the



Currency used by the Allies during World War II.

first to create such coins, probably at the end of the seventh century BCE. These issues were of electrum, a naturally occurring alloy of gold and silver, which the Lydians cast into discs and impressed with stamps on both sides. In around 550 BCE, the Lydians under King Croesus were also responsible for creating the first gold and silver coinages.

In China, a monetary system employing metals, animals, produce, and shells had been in use from the twelfth century BCE. In the late sixth century BCE the Zhou emperors began placing their names on small-scale cast-bronze farming hoes that were to serve as money. The use of disc-shaped coins did not commence till the third century BCE. The use of paper currency, however, began in China during the twelfth century BCE, but was not adopted in the West till the seventeenth century, where it arose as a solution to the shortage of coinage.

The introduction of bronze coinage in Greece at the very end of the fifth century BCE also marked an important development in the Western world. This enabled coins to be used for everyday transactions of a much lower value than silver or gold permitted. Under the Romans huge issues of small bronze coins enabled the economy of many cities and regions to be extensively monetized for the first time in world

Money can be more of a barrier between people than language or race or religion. • Vera Caspary (1899–1987)

history. The invention of coinage was not lost with the fall of the Roman Empire.

Modern Money

Today electronic banking is a key feature of money use. Credit cards are as familiar as coins and banknotes. The study of money in the modern world is primarily focused on the nature and operation of monetary systems and the factors which govern the buying power of money. Monetary systems include the public holdings of money (by individuals and businesses), commercial banks, and central banks operated by governments to facilitate official transactions and economic policy. Modern monetary theories seeking to explain changes in the value of money have been dominated by the quantity theory of money, which posits that there is a firm link between the level of prices and the quantity of money in circulation. Although ancient and medieval societies paid little attention to the nature and role of money, today it has become a consuming passion.

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See also Barter

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Cyrus the Great

(c. 550–530 BCE)

KING OF PERSIA

In the sixth century, the Persian king Cyrus founded the Achaemenid Persian Empire by conquering the Medes, Lydians, and Babylonians. He earned loyalty and respect by allowing conquered peoples to retain their religions and traditions, and he freed the Hebrews who had been held captive in Babylon.

Cyrus the Great belonged to the Pasargadae tribe who immigrated to the Iranian Plateau during the first millennium BCE and settled in the area known as “Persis” or Persia, which is the southwestern portion of the Iranian Plateau along the Persian Gulf. During the sixth century BCE the Persians took control of the areas of Anshan and Susa (in modern Iran) and installed Persians as local rulers. Cyrus himself claimed that he was king of Anshan (he became king in 559–558 BCE) and that his forefathers were kings of the same area that is now identified with Marv Dasht. Three legends are attached to Cyrus and his upbringing. The first states (from the ancient Greek historian Herodotus) that he was the son of Cambyses, son of Cyrus I. His mother was Princess Mandane, who was the daughter of Astyages, the last king of the Medes, an Iranian people. Because Astyages had been warned by omens that the boy would take his throne some day, he decided to have the boy killed. Cyrus had been given to Harpagus, a Mede, to kill, but Harpagus was not able and gave Cyrus to a shepherd, who raised Cyrus as his own son. According to Herodotus, Cyrus displayed the genius of leadership in his youth that is ultimately derived from native Persian legends. Finally Cyrus’s true identity was discovered, and he was sent to Persia, where he was able to unify the Persian tribes and create a kingdom for himself.

The second legend states that Cyrus was left in the forest and that a female dog suckled him and protected him from wild beasts. This legend clearly demonstrates Indo-European elements (compare the legend of Romulus and Remus, the founders of the city of Rome). The third legend (by Nicolaus of Damascus) states that Cyrus’s father was a bandit, who was given to a wealthy and noble family of the Median court to raise.

In 550 BCE Cyrus met Astyages in battle and won a major victory in which many of the Median forces defected to him. Now ruler of a confederation of



Profile of Cyrus the Great.



A young Cyrus the Great rides in a chariot.

Median-Persian forces, Cyrus set out to conquer the neighboring regions. He moved onto Anatolia (in modern Turkey) and faced the rich kingdom of Lydia with its famous King Croesus with his capital at Sardis. The oracle of Delphi had warned Croesus that if he fought Cyrus, he would destroy a great kingdom, which, in fact, would be his own. Sardis and Croesus fell into the hands of Cyrus in 547 BCE. This event was followed by the conquest of Mesopotamia with its chief city, Babylon, in 539 BCE. The Babylonian king Nabonidus was despised by the local population for neglecting the New Year festival and especially for neglecting the temple of the great Mesopotamian god Marduk. Cyrus entered the city almost unopposed and, as part of his policy of respecting local people and their religion and culture, made his way to the temple of Marduk. There he made offerings and paid homage to the great Mesopotamian god, presented himself as a servant of Marduk, and made arrangements for the

rebuilding of the temple. This tactic on the part of Cyrus would pay off in many parts of the soon-to-be Achaemenid Persian Empire (550–330 BCE). Unlike the Assyrians, who used brute force to subdue the local population, the Persians allowed local traditions to survive and the provinces to be autonomous, providing security and collecting taxes. At this time the Hebrews who had been held captive in Babylon (the period in Jewish history known as the “Babylonian Captivity”) were also freed and allowed to go back to their homeland. According to the Bible (Ezra 6:2–5), Cyrus decreed that the Temple of Jerusalem be rebuilt and that what had been taken away by Nebuchadnezzar (Chaldean king of Babylon) be brought back to Jerusalem. Hence, the Old Testament (Isaiah, Ezra) remembers Cyrus and the Persians kindly. In Isaiah 45:1–3 the respect and compact between Cyrus and Yahweh, the Jewish god, are mentioned, again suggesting the king’s religious liberality.

Cyrus the Great also left us a firsthand account of his tolerance and worldview, which is known as the “Cyrus Cylinder” in the Akkadian language (Semitic language common in Mesopotamia at the time). This account also reveals aspects of his royalty. He was presented with all the titles of the Mesopotamian kings, such as “a great king, king of kings, king of the Four Corners of the world.” He stated that the people had the freedom to practice their religion and live as they wished, which we could consider as the first human rights declaration. By the time of his death at the hands of nomadic Iranian people known as “Sakas” in 530 BCE in Central Asia, Cyrus had established an empire that spanned from the Iranian Plateau to the Mediterranean Sea. His tomb is at Pasargadae, the location where he defeated the

Median king and where Cyrus had his stronghold. The Achaemenid Persian Empire would further expand and last for two centuries.

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See also Persian Empire

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The explorer Vasco da Gama is best known for his successful voyage around the eastern coast of Africa in the 1490s, which allowed Portugal to stake claim on the Indian Ocean and control half the spice trade from India. While da Gama's accomplishment brought wealth to his country, it also sparked the Portuguese use of African slaves on sugar plantations.

Vasco da Gama was among a handful of explorers who reshaped trade and labor among Europe, Africa, Asia, and the Americas. His three voyages between 1497 and 1524 opened an ocean route for trade between Europe and Asia; his three landings on the east coast of Africa in 1498, the first by a European, furthered the Portuguese goal of using Africans as a source of labor. His voyages led Portugal to dictate the terms of trade in the Indian Ocean and to enslave Africans for shipment to plantations first in the Mediterranean and islands off the African coast, then around the globe.

The early days of Vasco da Gama remain a mystery. He was the third son of Estevao da Gama, a nobleman from Alentejo, a town in southwestern Portugal. Some historians cite 1460 as the year of Vasco da Gama's birth, whereas others cite 1469. A third group of historians rejects both years, and controversy continues. Da Gama may have studied mathematics and navigation at Evora, Portugal, although again the matter is in doubt. What is clear is that da Gama might have remained a minor nobleman in Portugal. Instead ambition led him to seek fortune overseas. He distinguished himself in command against a French fleet in 1492, and three years later King Manuel of Portugal chose da Gama

to lead four ships to India, a Portuguese goal since the 1420s.

Economics and religion led Portugal to persist for nearly eighty years in its quest for an ocean route to India. At the western end of Europe, Portugal bristled at the price of pepper, cinnamon, nutmeg, and other spices after they had changed hands several times, with an increase in price at each exchange, along the land route west from India. Worse, many of the middlemen in these exchanges were Jews and Muslims, the enemies of Christendom whom the Portuguese and Spanish had banished from the Iberian Peninsula in 1492. God, country, and king, da Gama believed, had appointed him to circumvent by water this spice route controlled by infidels. After the Portuguese—devout Catholics—had the spice trade, they, rather than nonbelievers, would dictate the price of spices.

But the Genoese sailor Christopher Columbus complicated matters. In 1492 Spain had tried to beat Portugal to India by sending Columbus west across the Atlantic rather than east around Africa. Columbus believed he had reached India and was at sea again in 1495 when da Gama began to amass supplies for his voyage east. His compatriot Bartolomeu Dias had in 1488 rounded the southern tip of Africa, opening the way to India, but no one knew the distance between the two. Nor did anyone have an accurate map of the east coast of Africa. As had Columbus, da Gama sailed into uncharted waters upon leaving Lisbon, Portugal, on 8 July 1497. After more than 7,500 kilometers and ten months, the longest ocean voyage to that date, da Gama reached Calicut, India, on 22 May 1498. Da Gama led two more expeditions to India—one in 1502 and his final voyage in 1524. That September he reached Cochin, India, as viceroy



Antonio Manuel da Fonseca, *Portrait of Vasco da Gama*. The Portuguese explorer commanded the first ships to sail directly from Europe to India. National Maritime Museum, London.

of India. He died on 24 December 1524, and only in 1538 was his body returned to Portugal for burial.

By then Portugal had established ports in Asia from Diu on the western tip of India to Malacca near the southern tip of Malaysia, giving the Portuguese control of the Indian Ocean. This control enabled Portugal to capture half the spice trade between Europe and Asia. Merchants who once sailed the Indian Ocean at will now had to hire Portuguese ships for

transit or pay a 6 to 10 percent duty to sail their own ships through the ocean.

The wealth from the trade that da Gama's voyages had made possible returned to Portugal both as money to establish sugar plantations in Portugal and on islands that Portugal controlled off the African coast and as slaves to work these plantations. Between 1450 and 1500 Portugal enslaved 150,000 Africans as plantation workers. By 1800 Portuguese, Dutch, and English traders shipped more than 20 million African slaves around the globe, many of them to the Americas. In the United States racism and poverty remain the consequences of slavery and the legacy of Vasco da Gama.

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See also European Expansion; History, Maritime; Navigation; Portuguese Empire

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Dance and Military Drill

Moving and vocalizing together in time creates feelings of camaraderie and a willingness to cooperate among the participants. For this reason, community dance and music making—uniquely human activities—have been used probably since the origin of the species; shared rhythmic movements have played a part in religion, war, politics, and many other social settings.

Engaging in community dance and/or military drill by moving rhythmically together for lengthy periods of time is a very effective way of arousing shared and friendly feelings among the participants. This effect is reinforced by music and voicing, all the way from band music and choral singing to drill sergeants' shouts of "hut, hip, hip, four." Somehow moving muscles together in time, with voices backing up the rhythmic beat, makes people feel good, wipes out old grudges, and smooths over personal rivalries. Even when the immediate excitement subsides, such exercises leave a residue of fellow feeling and readiness to cooperate. This had important effects in times past and still exhibits itself in religion, war, politics, and innumerable social settings where people dance, sing, and keep together in time.

Exactly how shared feelings are aroused when we dance, sing, and march is not accurately known. Hormones and the sympathetic nervous system are surely involved; so are parts of the brain. Suffice it to say that such behavior and their results are both unique to and universal among human beings. Only humans engage in community dancing and music making, and all known human societies do both. Only a few, however, harnessed this human response to keeping together in time for military purposes, though those

that did so profited from the superior cooperation and morale of soldiers who drilled regularly for long periods of time.

Origins

When rhythmic dancing and music making first arose among humankind is unknown, but it must have been very early, perhaps before *Homo sapiens* emerged and before language developed among our ancestors to make us fully human. Whenever the habit established itself, the advantage of greater cooperation among large numbers that developed from dancing together must have been enormous, since only dancers survived. Observations of our closest animal relatives, the chimpanzees of Africa, suggests why this was so. In 1969, the band of fifteen adult males that Jane Goodall and her helpers were studying split into two rival groups, and in the next two years each of the seven seceding males was hunted down and killed by their rivals, who thus regained the whole of their original territory and the females who had seceded. Very slightly superior numbers (and perhaps stronger cohesion) among the core members of the old band thus prevailed. Obviously, if dancing together allowed our ancestors to overcome the sort of individual frictions that split that chimpanzee band apart, it is easy to imagine how larger numbers of more cooperative individuals could expand their territory against neighbors who had not yet learned to dance—thus making that form of behavior universal within a few generations.

Thereafter different human groups elaborated the possibilities of rhythmic movement in innumerable different ways. Until very recently, the principal



Dance is a cultural universal that translates well across cultures. In this photo Morris dancers perform at a community festival in a small New England town.

historical importance of dancing was to knit local communities together. Participants were well aware of its emotional effect. In the twentieth century, for example, Greek villagers told an anthropologist that they felt light, calm, and joyful when they danced; and Kalahari hunters reported to another observer that dancing made their “hearts happy.” Such feelings made conflict like that which ravaged Goodall’s chimpanzees far less likely, and allowed larger numbers of persons to live together peacefully year after year. Although important emotional cohesion and cooperation, induced by dance, may have been among our ancestors, nothing like a history of community dancing can be written. Such behavior was simply taken for granted, and before anthropologists started work about 150 years ago, evidence for dancing among hunters, pastoralists, and farmers remained exceedingly sparse.

Spiritual and Religious Importance of Dance

Records are more substantial for a more specialized, eventually professionalized, kind of dancing intended to consult and/or please powerful spirits and gods. Around such rituals, organized religions eventually emerged. Later on, in urban settings, expert exhibitions of dancing (and song) honoring a god also

became public entertainment for spectators, as surviving texts of Greek dramas attest. Simultaneously, excited, participatory dancing among believers remained a growing point for religions, as is clear from biblical references to how Saul and David danced before the Lord and founded the Hebrew kingdom, largely on the strength of enthusiastic bands of young men who danced with them, honoring Yahweh. Early Christianity also was hospitable to dancing, though the practice soon fell under suspicion when bishops and priests set out to restrain and ritualize public worship. Enthusiasts and heretics, who often (but not always) danced, continued to challenge church authorities from time to time; and in the sixteenth century, Protestants bound their congregations together by rhythmic movement while standing up and singing hymns and psalms. A long series of subsequent religious enthusiasts—Methodists, Quakers, Mormons, Shakers, Pentecostals, Russian Old Believers, and others—used similar methods to arouse cohesion and commitment among their followers. African Christians (and a variety of heretical faiths) have been particularly successful in using song and dance, borrowed directly from village customs, to consolidate their converts.

Song and dance kept other world religions in ferment in much the same fashion. Among Jews, Hasidic enthusiasts sang and danced, attracting a large

*We should consider every day lost in which we do not dance
at least once.* • Nietzsche (1844–1900)



A costumed mime performs a ritual in a public square in Guadalajara, Mexico, in 2003.

following in Poland and nearby lands, beginning in the eighteenth century.

Among Muslims, dervish associations of restless young men proliferated widely beginning about 1000 CE, chanting, dancing, and sometimes achieving ecstasy. Across the centuries, many Buddhist sects also engaged in rhythmic exercises, which appealed usually to poor and discontented groups.

Recent examples include the so-called Boxer rebels in China (1900–1901) and a similar Buddhist sect of dancers who began to attract official persecution in the 1990s. In Japan, the Soka Gakkai, founded in 1930, was persecuted by the imperial government until 1945,

but burgeoned after that date through daily rhythmic exercises conducted outdoors in urban settings to become a significant factor in national politics.

Tension between enthusiasm generated by dance and song and the authority of established priesthoods and legally defined systems of belief was persistent throughout religious history. Whenever social strains were acute, enthusiastic sects arose to express and relieve popular discontents, and they nearly always relied on dance and song to keep their followers together. The process continues worldwide today, with diverse, sometimes angry, so-called fundamentalist movements vigorously challenging conservative



This eighteenth-century Japanese woodblock print shows five women dancing at the annual rice planting ritual held at the Sumiyoshi shrine. Library of Congress.

religious authorities everywhere and sustaining themselves, more often than not, as much by communal rhythmic exercises as by words or ideas.

Bonding Communities and Combatants

The role of dance and song in disturbing established religious routine and ritual is second only to its importance in sustaining local village and migratory communities throughout human history. Perhaps it is worth pointing out that such sects flourished most vehemently when substantial numbers of persons

found themselves unable to live satisfactory lives in traditional ways in local communities because of overpopulation or some other obstacle. Sometimes, as happened among the bands of prophets in ancient Israel and among sixteenth- and seventeenth-century Protestants in parts of Europe and America, religious protest precipitated new and successful institutional adjustments. More often, sects decayed from within when expectations were disappointed, and/or forcible repression dispersed their followers.

Armies rivaled religious sects in relying on rhythmic exercises to influence human behavior. Infantry soldiers trained to march together in time and



Two European peasant couples enjoy dancing.

reinforce muscular bonding by shout and song were capable of maintaining a solid shield front in battle and could overwhelm less-organized enemies with comparative ease. The earliest known evidence of such tactics comes from Lagash in Sumer about 2450 BCE, in the form of a stone carving showing armored spearmen marching in step behind their commander. Early Chinese warfare also relied mainly on infantrymen who maneuvered in unison to drumbeat.

After about 750 BCE, however, when cavalymen learned to shoot arrows from horseback, faster moving horsemen could outflank infantry and attack with arrows from a safe distance. Accordingly, wherever steppe cavalry raiders were the main threat, civilized armies of Eurasia de-emphasized infantry, put foot soldiers behind walls, and let military drill decay.

In Greece and Rome, however, where steppe raiders seldom penetrated, drill and dance became essential elements of military training after about 650 BCE; citizen armies, marching together and keeping time by shouting, dominated Europe's Mediterranean battlefields for several hundred years thereafter. As a result, intense commitment by ordinary farmers to public affairs and war went along with citizenship in ancient Greece and republican Rome, providing a model for modern democracies when they arose in Europe and America in the eighteenth century. Emotional responses to keeping together in time undergirded and made such behavior possible.

Elsewhere in the world, war and dancing were intimately connected. Among Amerindians, Polynesians, Africans, and others, warriors prepared for battle by

dancing together ahead of time. Such behavior presumably consolidated fellow feeling and assured better cooperation even when the combatants did not array themselves in fixed ranks or learn to maneuver together. Horses cannot keep time, of course, so cavalry was different. Drill was ineffective, and whatever control commanders were able to exert over attacking cavalymen was more by personal example than through prearranged formations.

In the sixteenth and seventeenth centuries both Chinese and European and generals discovered that pikes, crossbows, and handguns, wielded by well-drilled infantry units, could withstand and repel cavalry charges. This altered long-standing military balances within Eurasia, making the superior numbers of civilized armies effective against steppe horsemen as never before. China and Russia were the principal beneficiaries, and by 1757 the last steppe nomad confederacy was reduced to dependence as their expanding Imperial frontiers came together. Almost simultaneously British, French, and Dutch agents established extensive overseas empires in Asia and eventually in Africa as well, thanks to victories won by surprisingly small, well-drilled forces, fruited in large part among local populations, and obeying European commanders. The psychological effect of drill was never more clearly demonstrated than when Indian, African, and Indonesian recruits, moving together in unison, learned to obey European commanders. Older social ties were almost wholly superseded among them by a new collective solidarity that made men of diverse backgrounds into obedient instruments of utterly alien European intruders.

Meanwhile, similar armies, recruited from city slums and impoverished rural communities, strengthened European governments at home, sustaining the aristocratic and privileged urban classes of Europe's old regime.

The French Revolution and the Napoleonic wars of 1789–1815 expanded the role of army drill among Europeans, creating citizen armies on the model of the Roman republic. The French example proved contagious, so by 1914 almost all European governments drafted young men for a year or more of military

training and assigned them to reserve units throughout their active years. Such military training involved long hours of drill and patriotic exhortation that proved very effective in superseding village ties with new national identities. Accordingly, during World War I, national rivalries sustained mass armies, numbering in the millions, through four years of military stalemate, before ending with the sudden collapse of Germany and its allies when hastily trained American soldiers arrived on the Western Front to reinforce the flagging French and British. World War II (1939–1945) turned into an even more destructive disaster for Europe and transformed Asia and Africa by making European empires unsustainable. In every theater of war the power of drill to create obedient soldiers manifested itself, and as Asians, Africans, and Americans began to participate actively in the two World Wars, new national identities took hold among them, thus ending Europe's temporary dominance. Economic and demographic changes worked along parallel lines; but military drill among Asians, Africans, and Americans was what triggered this worldwide shift of power.

A Tool for Society

Among many peoples, dance has never been restricted to religious and military affairs. Urban populations were too large and diverse to dance together, as villagers continued to do, but subgroups could and did dance privately among themselves. Dancing perhaps always played a role in selecting mates and continued to do so in urban settings. In Renaissance Italy, for example, dancing among the urban upper classes became a way of showing off fine clothes, good manners, and sexual attractiveness. This Italian style of ballroom dancing then spread across northern Europe in early modern times. In addition, dancing could express and exhibit the grandeur of a king, as Louis XIV of France (reigned 1643–1715) well knew. As a youth he participated personally in exhibitionistic dances; then he settled for watching as professional dancers developed the art that today is known as ballet.

As for public affairs, after the French Revolution, marching and rhythmic shouting became important

ways of political mobilization. German and Czech nationalists used gymnastic exercises, for example, to foster new sentiments by coordinating muscular movements among hundreds or thousands of participants. Marxists soon followed suit, when the Viennese socialist Victor Adler modeled annual May Day parades on traditional Catholic Corpus Christi Day processions; other Marxists elsewhere imitated this event, as Stalin's May Day parades in Moscow illustrated. Massive gymnastic exercises took especially strong root among Chinese and Korean Marxists, where Buddhist sects had prepared the way for muscular demonstration of their new, secular sort of religion. Meanwhile in Austria, the youthful Adolf Hitler, repelled and fascinated by watching the Marxists' May Day parade, subsequently used marching, uniformed party members to reclaim the streets of Germany and Austria for the Nazi party that he created. Unquestionably, the popular, emotional support these and other political parties and revolutionary governments attained in the twentieth century rested largely on muscular bonding aroused by march, song, and dance. Restless and rootless young men were especially attracted to such behavior, and everywhere remain an especially volatile element in human society.

Political parties and movements in more stable civil societies, like the United States, also resort to marching and rhythmic chanting on occasions of unusual excitement, like election rallies. More surprising was the dismantlement of apartheid in South Africa, accomplished after 1990 by dancing urban crowds of Africans, who drew directly on village customs of community dancing. Less well coordinated rhythmic muscular protest also sustained the agitation in Teheran that brought Ayatollah Khomeini to power in 1979; and the collapse of Communism in Russia in 1990–1991 also provoked improvised rhythmic crowd behavior in the streets and squares of Moscow. Sporadic and more or less spontaneous movement together in time may also be observed among crowds attending athletic events throughout the world.

Obviously, our capacity for arousing common feeling by dancing, shouting, and marching together

is as varied and vigorous as ever. It is sure to persist, and seems likely to remain politically and religiously important in times of crisis, even though older, localized community-wide dancing on festival occasions is in general decay and may eventually vanish.

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See also Festivals; Military Training and Discipline

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Daoism

Daoism is a philosophy that focuses on self-cultivation and finding value and purpose in this life. It developed into a philosophy of nature, a political philosophy, and a religion that has had a profound impact on cultural, social, and religious life in China. While Daoism changed and developed from its early days before the common era and throughout the centuries—and spread worldwide—it maintained its original position as the Way (*dao*) of conducting human life.

One of the Three Teachings (*sanjiao*) of China (the others being Confucianism and Buddhism), Daoism is perhaps the most difficult to define. Strictly, Daoism is a religio-philosophical system developed during the Warring States period (475–221 BCE); broadly characterized, it is simultaneously an attitude toward life and a soteriological (salvation-oriented) tradition based on harmony with the *dao* (the Way), the immanent source of all existence and the path it lays for humans to follow. Daoism encompasses often-contradictory beliefs and practices, such as shamanism, alchemy, and martial arts. Traditionally, scholars distinguish between an original Daoist philosophy and a later Daoist religion, the former given greater legitimacy than the “superstitions” of the latter. More recently, this division has been challenged, and the development of Daoism is now described as a cumulative process integrating commonly held teachings and fundamental notions, particularly the unity of man and the natural order. The integrative character of Daoism and the unofficial nature of many of its sects make current estimates of its worldwide membership range widely, from 20 million to 55 million.

Most Daoist concepts come from Daoism’s foundational book, the *Daodejing* (Classic of the Way and Its Power). Although more likely a compilation developed over centuries and only finalized in the third century BCE, it has traditionally been attributed to Laozi (sixth century BCE), an archivist at the Zhou court. According to China’s first universal history (second century BCE), after observing the dynasty’s decline, Laozi headed west. Before leaving the empire, he was convinced to record his precepts. Only five thousand characters in length and divided into two parts, the *Daodejing* lays out Laozi’s definition of *dao* and his prescription for a “right” society in accord with it. It is a series of cryptic, short teachings, meant as a handbook for rulers in the art of governing in harmony with the universal order. Laozi’s teachings were expanded by Zhuangzi in an eponymously titled book (c. 330 BCE) that first presents Daoism as a philosophy for ordinary individuals. Using parables to demonstrate the relativity of all knowledge and values, the *Zhuangzi* levels social difference and, in contrast to Laozi’s writings, rejects all participation in society. It harks to a primitivist society where, free from the ethical dangers of the world, ultimate harmony with nature can be achieved. Together, the *Daodejing* and *Zhuangzi* outline Daoism as a metaphysical rather than human-centered philosophy, in which the ultimate end is *wu* (nonbeing), an emptiness through which *dao* can work unimpeded.

As a philosophy of life, Daoism is ingrained in Chinese culture, bridging the more rational Confucianism and the more metaphysical Buddhism. Daoism’s influence is clear in Chinese science and medical knowledge, which draw on its emphasis on

I realized that Eastern thought had somewhat more compassion for all living things. Man was a form of life that in another reincarnation might possibly be a horsefly or a bird of paradise or a deer. So a man of such a faith, looking at animals, might be looking at old friends or ancestors. In the East the wilderness has no evil connotation; it is thought of as an expression of the unity and harmony of the universe. • William O. Douglas (1898–1980)

harmony with nature and its practitioners' belief that to understand nature is to glean insight into the universal order. Daoism has also shaped Chinese literary and aesthetic sensibilities. Its ideas have been acculturated into other Asian cultures, particularly those of Japan, Korea, and Taiwan, where they have influenced autochthonous traditions. It has also become influential in the West, offering an alternative spirituality through practices like *taijiquan* (tai chi) and feng shui.

Daoism and Chinese Syncretism

Though the division into the Three Teachings is practical for appreciating the differences between Confucianism, Buddhism, and Daoism, the boundaries between them have never been sharply drawn. Rather, they are seen as complementary, pointing to the same goals: humankind's full possession of its humanness and its immortality through harmony with *dao*. The Chinese share singular conceptions, most clearly that of *dao*, which means "road" or "way," though it is also understood as "way to follow" or "rule of conduct." The fluidity of the term allows for each of the Three Teachings to nuance its definition. The concept, however, shares a common cosmology, which describes the universe as a hierarchically organized mechanism in which the parts correspond to the whole. The world is divided into three spheres (heaven, Earth, and human), each with its own *dao*, mirroring one another in a macrocosm–microcosm relationship. Communication and harmony between these spheres is crucial to maintain a universal order constantly under threat. Chinese thinkers also see the natural order as manifested in simultaneously antithetical and complementary aspects, known as yin and yang, each of which cannot be defined without the other. Yin and yang encapsulate

the relativity of all things, because any one thing can be either yin or yang in relation to another.

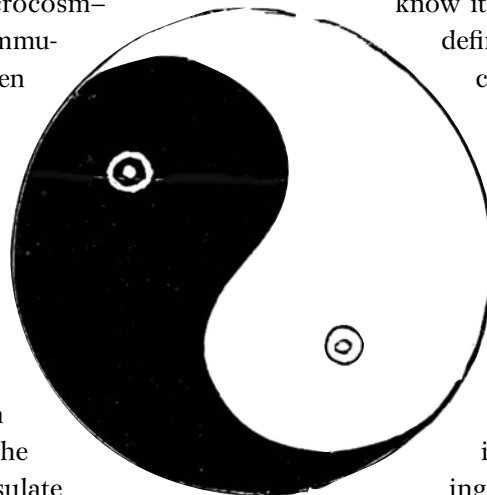
The complementarity of the Three Teachings' foundational concepts is made apparent by efforts throughout Chinese history to integrate the Teachings into a single movement. But this complementarity must not be overstated; deep-seated rivalries for influence at court and over the masses existed among Confucians, Daoists, and Buddhists. Their differences were more than political; while sharing basic concepts, each adopted a distinct attitude toward life, society, and nature. Confucianism, for example, concentrates on creating an ethico-political system to shape a "right" society through propriety. Buddhism abjures Confucian social values, while espousing beliefs, like the illusory nature of the physical world, diametrically opposed to Daoist doctrine. For its part, Daoism represents a more personal and spontaneous approach to life than Confucianism, and a metaphysics more firmly grounded in nature than Buddhism. It builds upon collective concepts, elaborating them into a distinct "way."

Basic Concepts of Daoism

Dao, as defined by Laozi, is a metaphysical principle, both the ultimate order of the cosmos and the source from which everything emanates. The term itself is a mere approximation, as Laozi admits: "I do not

know its name; I call it the Way. If forced to define it, I shall call it supreme" (*Daodejing* chapter 25; these and subsequent quotations are from the Beck translation).

Although the term was originally used to convey an object's place in a hierarchical order, *dao* itself is outside that order. Not a creator, it is nonetheless the origin of all things in the hierarchy. For example, *dao* is not God (*ti*), but God originates in *dao*. One of its essential attributes is spontaneity. Although it is the ordering principle of the universe, "the Way

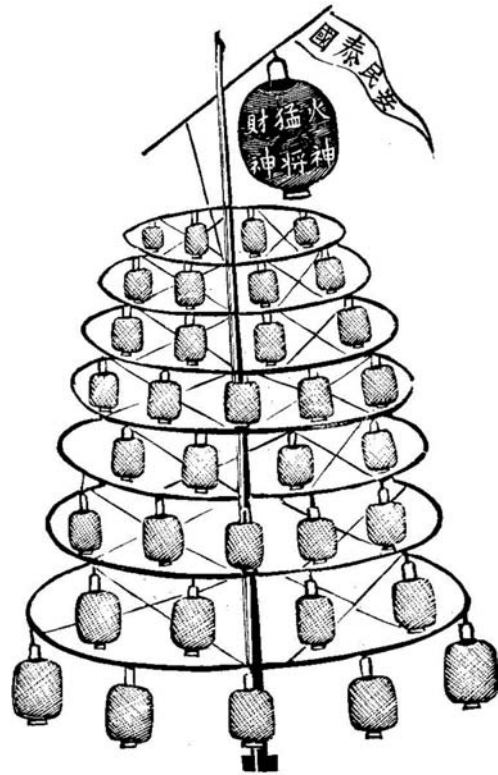


never interferes, yet through it everything is done” (chapter 37).

Closely related to *dao* is the concept of *de*. Usually translated as “power,” *de* refers to the Way’s efficacy in the realm of the tangible. *De* is also “virtue,” not moral action but the power that the Daoist acquires by living in harmony with the universal order. Daoists approach *de* in three distinct ways: one aims, through meditation, at the conservation of the *dao*’s power as it flows through the body; the second, in contrast, seeks to increase *de* through various programs of movement, such as *taiqijuan* or kung fu exercises, which unblock the *qi* (life force or breath) and rejuvenate the body; the last offers the help of priests in managing *de*, because Daoist practices are efficacious only if consistently performed. Thus, Daoist priests, who understand the flow of *qi*, help the untrained to unblock its flow.

In the concept of *de* we see the interaction between *dao* and man. As a microcosm of the universal order, the body mirrors the plan of the cosmos; and the same forces flow through both. To Daoists, the metaphysics of *dao* and *de* explain and shape human ethics. The ethical ideal of Daoism is self-suppression—*wu*, or inner emptiness. As there is no thing other than emptiness at the core of the Way, so it should be in the human mind. One should be moved by instinct, not rational thought, like a child, embracing the spontaneity inherent in *dao*. *Wu* is outwardly manifested in *wu wei*, or nonaction, a concept that refers not to absolute inaction but to the absence of self-determined action for particular ends. Daoists use the metaphor of a river, malleable yet powerful enough to erode rocks, to explain the above. *Wu wei* is intrinsically tied to the concept of yin and yang, which makes it intelligible: since each action inevitably leads to its opposite, every deliberate intervention ends in failure. In contrast, nonaction leads to success. Even in following the Way, people should not consciously endeavor to do so, for striving results in straying from *dao*.

Daoists seek a return to a past prior to the corruption of civilization, advocating a primitivist society that follows the rhythms of nature. According to



In celebration of the New Year, Chinese display the Lantern Pagoda. Hung with fifty individual lanterns it honors various gods and brings light, a symbol of prosperity.

Daoists, the unity of the universal order has declined since the golden age, a fact elucidated by the short life span of man, who in the past supposedly lived hundreds of years. Zhuangzi explains that, attempting to stem the decline, rulers unsuccessfully interfered with the flow of *dao*, resulting in defiled purity and a useless search for knowledge. Two main doctrines follow: the espousal of laissez-faire government and the rejection of education. Laozi most clearly elucidates Daoist social ideals: “the more restrictions there are, the poorer the people; . . . the more clever cunning, the more contrivances. . . . Do not interfere, and people transform themselves. . . . Do not intervene, and people prosper” (chapter 57). The king’s *wu wei* must extend to the rejection of education. Laozi condemns even the desire for knowledge, because it leads to competition over status and profit. The ideal society has neither schools nor books; its people are simple in their true nature. Zhuangzi goes further: law and virtue must be excised, since good and evil, inevitably reverting to each other, are relative concepts. This



relativity points to an emerging Daoist skepticism and leveling of moral distinction.

Historical Development

Daoism originated from the shamanic practices of the third millennium BCE. Exhibiting themes such as the search for harmony and immortality, in the first millennium BCE shamanism became associated with the *fangshi*, respected healers and diviners. During this period, Laozi's mystical politics and anarchic ideals also developed, together with Zhuangzi's emphasis on subjectivity and disregard for external behaviors. During the Qin and Han dynasties (221–206 BCE; 206 BCE–220 CE), the Huang-Lao masters, adherents of Laozi's precepts and his ideal government, gained influence at court. Although the emperor Han Wudi (156–87/86 BCE) established Confucianism as the state's official doctrine, rulers privately practiced Daoism, seeking to emulate the semimythical Yellow Emperor.

Emergence of Religious Daoism

During the first century BCE, a messianic Daoism developed that was utopian in outlook and aimed at establishing an era of "great peace." It inspired the Rebellion of the Yellow Turbans (184 CE), who sought to overthrow the Han dynasty. Although the rebellion was defeated, messianic tendencies remained within Daoism. The second century CE saw the emergence of religious Daoism in a new organization that brought temporal and spiritual powers together under the control of the Tianshi (Celestial Masters). In 142 CE, the now-deified Laozi is said to have given Zhang Daoling the definitive, "orthodox" doctrine to replace people's contemporary religious practices. The doctrine sought, through rituals like confession, to expiate sins that resulted in disease. In 215 the Celestial Masters sect was constrained to submit to Cao Cao, founder of the Wei dynasty during the Three Kingdoms period (220–265 CE). The result was the official recognition of the Celestial Masters, who helped legitimize both the Wei and the succeeding Western Qin dynasty (265–316 CE).

The fall of the Western Qin to northern barbarians led to a migration southward, where the Wu dynasty (222–280 CE) arose. In the period of the Southern Dynasties, Daoism was influenced by the traditions of the lower Yangzi (Chang) River, particularly the belief in *zhenren*, pure immortals immune to the world's decay. The immortals became models of attained agelessness, the realization of which was seen as possible through alchemy and magic. By the fourth century CE, this synthesis of the Daoism of the Celestial Masters and preoccupation with immortality led to the development of a competing sect, the Mao Shan school. In general, Daoism gained official support but not sole recognition in the South, while in the North it became the official religion of the Northern Wei dynasty (386–534), whose rulers claimed to be deputies of Lord Lao.

Daoism from the Seventh Century

Daoism's greatest success came with the reunification of China under the Tang dynasty (618–907 CE), as it spread throughout the empire. The founder of the dynasty was believed to be Laozi's messianic descendant, a notion which became part of official state ideology. Numerous temples and monasteries were built, and the *Daodejing* joined the Confucian classics as part of the civil-service exam. During this time, Daoist scriptures also attracted the attention of foreign rulers and were translated into other languages. During the Song dynasty (960–1279), the Daoist canon was expanded and printed for the first time. However, with the decline of the first (Northern) portion of Song dynasty (1126), Daoism lost its place as the official religion. In the fray, several new sects developed. Of these, the Zhuangzhen (Complete Perfection) sect, noted for its ethical teachings, gained the favor of the Mongols and was thus able to challenge the Celestial Masters' preeminence. The sect's emphasis on asceticism and hygienic techniques to prolong life became one of the most important and prevailing currents in Daoism.

During the Yuan dynasty (1279–1368), Daoists used their prominence in the north to lead a

persecution against Buddhism, hoping to diminish its growing influence. However, the tide turned, culminating in the state-sanctioned burning of Daoist apocrypha in 1281. In the south, meanwhile, the Celestial Masters' influence continued unabated, although challenged by newly developing currents in Daoism. These new currents embraced Neo-Confucian beliefs, which gained them the support of conservative officials and intellectuals.

During the Ming dynasty (1368–1644), the elite became estranged from Daoism, and Daoism's social status dwindled. The Ming elite held double standards in respect to Daoism: they still drew on its notions to justify their rule, but they put the religion under strict control, inhibiting its independent development. Stifled by the ruling class, Daoism flourished among underground religious sects. The rulers of the Qing dynasty (1644–1911/12) saw Daoism as potentially seditious and started to suppress it, withdrawing most of its privileges. The religion continued to develop among minorities and the lower classes however.

Spread and Influence

With the exception of Taiwan, which saw an influx of Daoists in the seventeenth and eighteenth centuries as part of mass migrations from Fujian Province in the southern mainland, Daoism has not spread systematically to other areas of the world. Its doctrines and practices, however, were absorbed into local traditions across East Asia and are now making inroads in the West. The seeming lack of an exclusive mythology, historical contexts, and personal references in Daoist scriptures has helped give them universal appeal.

Korea and Japan

Daoism arrived in the Korean Peninsula in 624 CE, when it was at its height at the Tang court. The emperor sent emissaries bearing the *Daodejing* and *Zhuangzi* to the three Korean kingdoms, two of which fully welcomed their teachings. In the kingdom of

Koguryo, Daoist priests' influence was such that many local Buddhist temples were made Daoist. The kingdom of Shilla sent scholars to China to learn more about the religion and included the *Daodejing* in the Shilla civil-service exam. Although a Daoism stressing self-discipline was popularized at all levels of Korean society, by the fourteenth century Daoism was in decline as Buddhism resurged. Further suppression came with the Japanese invasion of 1592, after which the vitality of Daoism as an independent religion faded. Yet Daoism's influence in Korea is evident in traditional gardening and in the country's flag, the central symbol of which is the Taeguk, representing the correspondence between heaven and Earth.

The Japanese first encountered Daoism in the seventh century CE. Early on, Daoism's affinities with the animism of Japanese Shinto eased an acculturation of Daoist doctrines into Shinto traditions. The introduction of specific Daoist practices dates to the Heian period (794–1185), when Masters of Yin and Yang—diviners learned in the occult—gained influence at court. In the eighth and ninth centuries, practitioners of Shingon Buddhism adopted Daoist physiological practices and the belief in the immortals. Tendai Buddhists embraced Daoist magical arts and techniques for prolonging life. Daoist mysticism made its strongest inroads in Japan through its influence on the Zen schools of Rinzai and Soto, which were introduced from China in the twelfth and thirteenth centuries and are still active today.

Daoism in the West

Western opinions of Daoism have changed from the days when the Italian Jesuit Matteo Ricci first visited China in 1582. Seeing Daoism as an obstacle to the spread of Christianity, Ricci allied himself with court Confucianism and decried Daoism as perverted paganism. This negative attitude persisted into the nineteenth century, when philosophers such as G. W. F. Hegel deemed it a throwback to philosophy's infancy. However, popular nineteenth- and early twentieth-century writers such as Leo Tolstoy and

Franz Kafka brought it to a broader audience, while thinkers such as the philosopher Martin Heidegger and the psychologist Karl Jung embraced its tenets as confirmation of their own subjective philosophies.

The Western interest in comparative studies has brought Daoism to the forefront. Daoist theories have infiltrated discussions of scientific subjects, while its doctrines serve environmentalists as an alternative philosophy with which to criticize Western attitudes toward nature. Daoism's questioning of traditional authority and the substantial presence of women in institutionalized practice have also made it appealing to certain strands of feminism, which see in the interdependence of yin and yang a less divisive way to conceptualize gender. Daoism has also attracted attention at the popular level, its prescription for a simplified life appealing to those who seek to lessen the effects of technological dependence. For example, feng shui is used as a means to harmonize urban living with the energies of nature.

Daoism Today

With over eighty-six sects worldwide, Daoism is one of five sanctioned religions in the People's Republic of China—the others being Buddhism, Islam, Protestantism, and Catholicism. However, its relationship with the government is uncertain at best, since only two sects are officially recognized: the school of Complete Perfection and that of the Celestial Masters. Although the greatest number of Daoists live in China, Taiwan is the center of official modern Daoism and has been since 1949, when the sixty-third Celestial Master, Zhang En Pu, took refuge there. With millions of adherents practicing *taijiquan*, visiting Daoist temples, and studying Daoist healing methods both on Taiwan and on the mainland, the ultimate influence of Daoism in modern Chinese culture is unmistakable.

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See also Laozi; Philosophy, Asian

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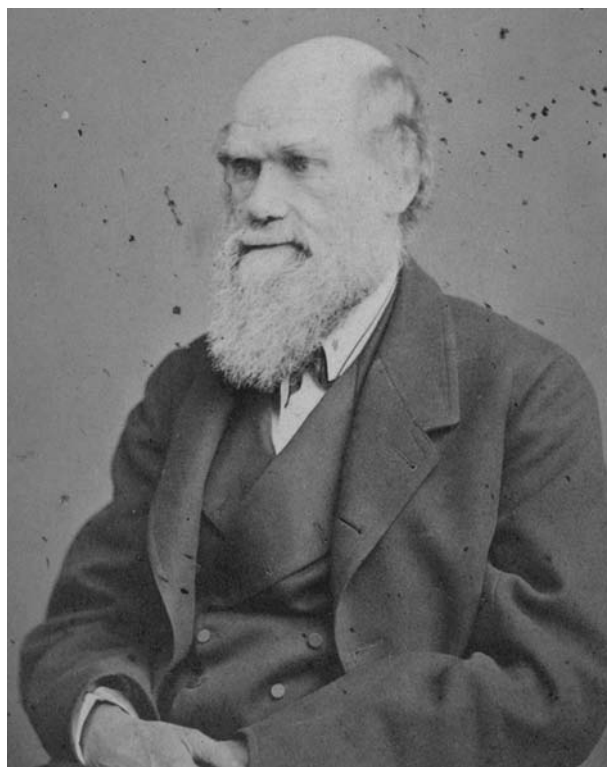
As naturalist aboard the *HMS Beagle*, Charles Darwin closely observed various species. In 1859, his book *On the Origin of Species* was published, which explained how the struggle for survival would naturally tend to select traits that gave a competitive advantage. This theory of evolution by natural selection was accepted by the scientific community but refuted by the Christian clergy.

Charles Robert Darwin was born in Shrewsbury, England, on 12 February 1809, the son of the physician Robert Darwin and Susannah Wedgwood Darwin, of the Wedgwood pottery dynasty. Charles started work on a medical degree at Edinburgh University but, repelled by the sight of surgery performed without anesthetic, did not finish his studies. He later went to Cambridge University in preparation for becoming a clergyman in the Church of England.

In 1831 he took the post of “naturalist” aboard the *HMS Beagle*, under the command of Captain (later Admiral) Robert Fitzroy (1805–1865), on its surveying voyage to South America and the Pacific and Indian Oceans. On his return Darwin published an account of the journey, as the third volume of Fitzroy’s *Narrative of the Surveying Voyages of the Adventure and Beagle* (1839). Over the next four years he oversaw the publication of various reports, by experts of the day, on the mammal, bird, fish, and reptile specimens he had collected. He also wrote an important book on coral reefs and several monographs on fossil and living barnacles. When his travelogue was reissued in an enlarged edition as the *Journal of Researches into the Natural History and Geology of the Countries Visited during the Voyage of H.M.S. Beagle*

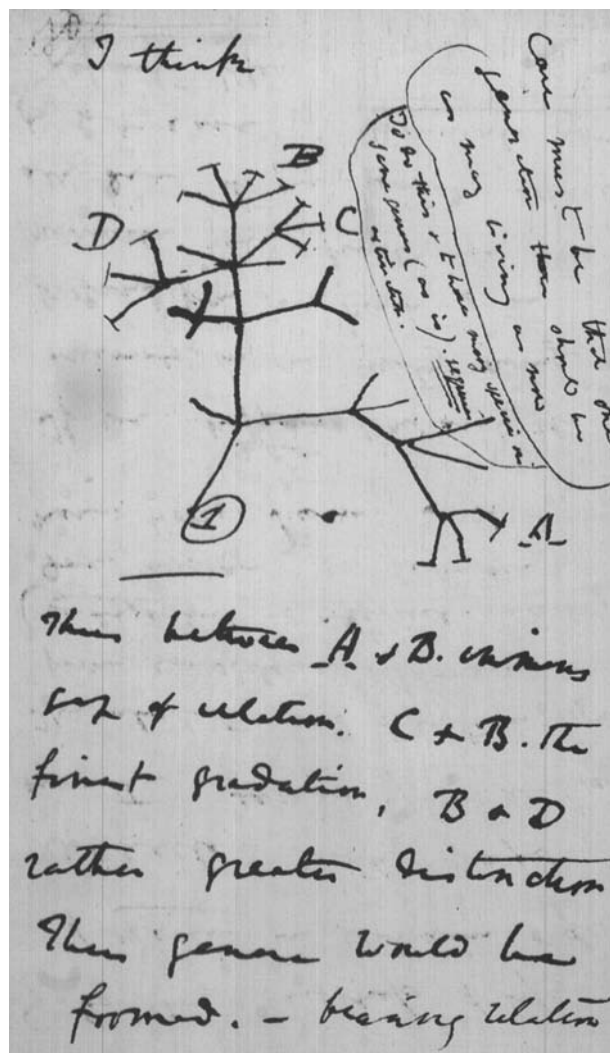
Round the World (1845), he received more widespread and popular acclaim.

Darwin had long pondered the variety of life. He was influenced by the geologist Charles Lyell (1797–1875), who outlined the idea that geological changes to the Earth had happened over millions of years, rather than the thousands of years deduced from the biblical account of Genesis and the great flood. The economist Thomas Malthus (1766–1834) had also written an influential book, *An Essay on the*



Charles Robert Darwin (1809–1882), biologist. Photo by Ernest Edwards. Smithsonian Institution.

It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change. • Charles Darwin (1809–1882)



"The Tree of Life," drawn by Charles Darwin between 1837 and 1838. The text reads, in part: "Case must be that one generation then should be as many living as now. To do this & to have many species in same genus (as is) requires extinction." Cambridge University Library.

Principle of Population (1798), in which he argued that the population of the Earth could not expand forever and that at some point starvation, disease, pestilence, war, and other "natural" causes would prevent further increase.

During his travels, famously including those through the Galápagos Islands, Darwin had regularly come across unusual groups of very closely related

species, which he likened to variations on a theme. Meanwhile through his gentlemanly pursuits, he had come across bird, dog, and horse breeders who had created new breeds that differed from one another as much as wild species might differ from each other. These discoveries stimulated Darwin to construct his theory of evolution by natural selection.

Darwin had been working on a manuscript for many years when, in June 1858, he received an essay from a fellow world traveler and naturalist, Alfred Russell Wallace (1823–1913). Wallace had independently arrived at exactly the same conclusion as Darwin: that the vast reproductive ability of living organisms, subtle variation within species, and the struggle for survival would result in the selection of any slight advantage and the inheritance of that advantage in future offspring.

Darwin was a famous naturalist while Wallace was younger and less well known, but Darwin knew he would have to publish or forfeit credit for the originality of his ideas. Through the support of his close colleagues Charles Lyell and the botanist Joseph Hooker (1817–1911), Darwin and Wallace presented a joint paper to the Linnean Society of London on 1 July 1858, and a year later Darwin's most famous book, *On the Origin of Species*, was published.

The book soon generated a storm of controversy. At the beginning of the nineteenth century, the study of natural science was intricately intertwined with an appreciation of the wonders of God's creation—many of the most important naturalists of the day were clergymen. It was assumed that species were fixed, created by a divine hand and therefore immutable.

With Darwin and Wallace came, for the first time, an explanation of how species might change—an explanation that was coherent, plausible, and readily acceptable to the scientific community. It was not, however, acceptable to the clergy. They took Darwin's book to suggest that the world had not, after all, been created in a week, that humankind had not been created in God's image but had begun as something more primitive. To them, Darwin's

book reduced the story of Creation, and of Adam and Eve, to a myth.

Darwin died in 1882, without any formal state honor or recognition. Today, however, Darwin is recognized as one of the most important figures in the history of science and, with Wallace, is credited with producing the theory that still underlies all of biological science. Every aspect of the study of living things, from ecology to genetics, is underpinned by their original concept of evolution by natural selection.

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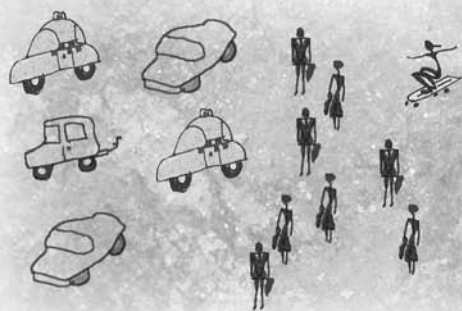
See also Human Evolution

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Dating Methods, Archeological and Historical

Techniques for determining the ages of objects at archaeological sites are critical to understanding the evolution of human societies. Archaeologists use relative dating methods (such as a fossil's position within layers of soil), to determine the sequence of events and absolute dating methods (such as the radioactive decay of a carbon isotope), to determine the actual age of an artifact.

Archaeologists employ a broad array of techniques collectively called dating methods to determine when “things happened” in history. These methods are applied directly to objects in order to determine their actual age or to situate them accurately in a chronological sequence. The dates on individual items may then be associated with and applied to the archaeological sites from which they were recovered. By a further extrapolation, the dates of these sites are then used to answer general questions concerning the timing and tempo of significant events or developments in the history of humanity: the evolution of upright walking, the earliest tool making, the controlled use of fire, humanity's geographic expansion beyond its African evolutionary nursery, the origins of agriculture, the development of metallurgy, the invention of writing, the appearance of urban civilizations. Our understanding of the origins of these and myriad other important steps in the evolution of human societies often is based, ultimately, on our ability to accurately and precisely date objects associated with these developments.

Dating methods employed in archaeological analysis can be divided into two general categories: relative methods and absolute (sometimes called

chronometric) procedures. Relative dating involves placing objects, sites, or events in a chronological sequence, without reference to an actual date, year, or even to a broad range of years. Absolute dating techniques produce actual dates or age ranges.

Relative Dating Methods

Among the relative dating procedures employed by archaeologists, the ones most commonly used involve sequencing objects, occupations, and sites on the basis of the soil levels in which cultural remains have been found.

As long ago as the late eighteenth century, the British geologist William Smith recognized that Earth's history is written as a metaphorical book whose pages are represented as a series of soil layers, one laid down upon another in a sequence across a vast expanse of time. Smith's analysis of these layers—the stratigraphy of buried geological deposits—provided scientists with a sequential natural history in which each layer contained fossil evidence of the types of life forms that dominated during the period in which the layer was deposited.

Archaeologists soon realized that stratigraphic analysis could similarly be applied to human history. Human-made objects and the remains of other materials whose context in the soil was the result of human activity were, like fossils of plants and animals, deposited in soil layers being laid down during the period in which those objects were lost, discarded, or deposited for safekeeping. Archaeologists recognized that cultural materials, like fossils, could themselves be sequenced on the basis of their relative position in a succession of strata.



Hugues Fourau, *Portrait of English Geologist William Smith*. Smith's groundbreaking work encouraged archaeologists to apply stratigraphic analyses to human history.

Further, because human activity itself can produce layers of deposit, cultural stratigraphy can be read to determine a relative chronological sequence of occupations of the same spot. For example, so-called tells in the Middle East are artificial hills produced by the frequent reoccupation by human beings of the same locations. Each occupation results in the deposition of materials lost and discarded and, in so doing, contributes to the formation of the mound, with the materials left behind by each subsequent occupation located on top of previous deposits. For example, the tell of Hazor (Tel Hazor) in Israel is an artificial hill produced by the remnants of some twenty-one separate occupations of the same location, with the remains of each successive occupation overlying each previous one.

Absolute Dating Methods

In most cases, the application of a relative dating procedure like stratigraphic analysis represents a preliminary step in archaeological dating. The hope always is to go beyond merely sequencing and to determine

a site's age in a chronometric sense. One of the most important chronometric procedures archaeologists employ is radiocarbon dating (also called carbon dating or C-14 dating), one of a series of so-called radiometric techniques. Radiometric dating methods, including carbon dating, potassium-argon dating, argon-argon dating, and uranium-series dating all rely on the existence of what amounts to natural clocks or calendars in archaeological and geological specimens. These natural calendars are produced by the fixed and measurable pace of the decay of radioactive (unstable) isotopes (varieties) of elements that occurs naturally in raw materials used by ancient human beings.

Radiocarbon Dating

In 1946, the University of Chicago chemist Willard Libby predicted the existence of carbon 14 in living matter, and by 1949 he had measured contemporary levels of this unstable variety of carbon and assessed its half-life—in essence he began the process of calibrating this natural clock. Soon thereafter, he began to apply the method to dating archaeological specimens. With radiocarbon dating, the known rate of decay of a radioactive variety of carbon, called C-14 (carbon 14) for the fourteen particles (six protons and eight neutrons) in its nucleus (as compared to the twelve particles—six protons and six neutrons—present in the stable and abundant variety of carbon), provides the archaeologist with a natural calendar.

Just like carbon 12, carbon 14 combines with oxygen in the atmosphere to produce carbon dioxide. Plants respire—in essence, they breathe—and, through photosynthesis, break apart the bonds between the carbon and oxygen atoms in carbon dioxide. Plants exhale the oxygen and retain the carbon, from which they manufacture their leaves, stems, roots, fruits, bark, and so forth. Carbon 14 is incorporated into plant materials in the same proportion as it appears in the atmosphere. When animals ingest plant materials, their bodies use the ingested carbon in the plant to produce bone, muscle, sinew, and so on, and the carbon 14 provided by the plant is

incorporated into the animal's body in the same proportion as was present in the plant. When a carnivore eats a plant-eating animal, it incorporates carbon 14 into its body in the same proportion as was present in its prey. In this way, all living things, as long as they are alive, breathing, and eating, are in radiocarbon equilibrium with the atmosphere.

Because carbon 14 is unstable, it constantly undergoes radioactive decay at a steady and measurable rate. Radioactive decay rates are expressed as half-lives, the length of time it takes for half of the radioactive material present in a substance to decay to a stable form. The half-life of carbon 14 has been measured at 5,730 years.

As long as an organism is alive, the carbon 14 that is slowly disappearing through that process of decay is immediately replenished (by plants as they breathe and by animals as they eat). Death breaks that cycle. After death, the decaying carbon 14 is no longer replenished, and its loss becomes calculable. It is the constant, steady, and measurable decay of carbon 14 that provides a natural chronometer in substances containing carbon—essentially, anything that was once alive.

Scientists can precisely calculate the amount of carbon present in a specimen about to be dated; they also know how much carbon 14 would be present in the material if it were entirely modern—in other words, if it were alive today. If the amount actually present in the object is less than would be expected in a modern material, the amount of time it must have taken for the proportion of C-14 to decline to its current measure can be calculated, providing an age for the material.

Radiocarbon dating, by its nature, can be applied only to organic materials, such as bone, wood, charcoal, seeds, fruit pits, roots, hair, and hide. The half-life of radiocarbon also places restrictions on the application of carbon dating. Any specimen less than a few hundred years old usually is too young to date, as not enough of the radioactive isotope has decayed for an accurate age determination. In its current application, any specimen much older than about seven half-lives (approximately forty thousand years) has so

little of its original carbon 14 remaining that dating accuracy diminishes dramatically, and the technique becomes unreliable. Ways of extending the outer boundary of radiocarbon dating to fifty- or even sixty-thousand years are currently being developed.

Finally, it should be added that the accuracy of carbon dating depends on there being a constant amount of carbon 14 in Earth's atmosphere through time. This turns out not to be precisely the case. Adjusting for this depends on another dating procedure—dendrochronology—which permits carbon dates to be calibrated and better reflect the actual age of an object.

Other methods based on radioactive decay are employed by archaeologists. Perhaps the most important is the potassium-argon technique (a more accurate version of the method is called the argon-argon method) in which argon-gas buildup is measured in volcanic rock (the gas results from the decay of radioactive potassium). The argon gas accumulates at a known rate, and therefore the age of the volcanic rock (meaning when the molten material solidified) can be determined. This technique is applicable to material millions and even billions of years old and so is most useful in dating the very ancient sites of our human ancestors. In one of its most interesting applications, the volcanic ash in which ancient human ancestors left their very modern-looking footprints at Laetoli, in Kenya, has been directly dated to about 3.5 million years ago.

Radiation Damage Techniques

Another class of radiometric techniques relies on the statistically predictable nature of radioactive decay in an indirect way. These procedures fall into a subcategory of radiometric dating called radiation damage techniques. These techniques, which first were used in the 1950s, take advantage of the fact that radioactive decay may leave measurable damage on archaeological specimens, damage that accumulates regularly through time. The amount of damage, therefore, is proportional to the amount of time that has passed. For example, the fired clay in a ceramic



object deposited in the ground is buffeted by radioactive decay that originates in the surrounding soil. The energy released through that decay is captured by the ceramic object, trapped in its atomic lattice in an amount proportional to the amount of time the object has been in the soil. This trapped energy can be released by heat in a procedure called thermoluminescence, or by light in the application called optically stimulated luminescence; the amount of energy released can then be measured. Once the rate at which the radioactive material in the soil is releasing energy—the so-called background radiation—is calibrated, the rate at which energy is trapped by a ceramic buried in that soil can be calculated, and, by inference, the age of the artifact can be determined. Dating techniques based on the rate of energy capture in archaeological materials are applicable to raw materials that possess a structure that, in fact, acts to trap such energy. These materials include ceramics, as well as some minerals, coral, teeth, and shell. Luminescence dating had a wide range of applicability; it has been used successfully to date ceramic objects just a few hundred years old, calcite deposits more than 250,000 years old, and heated flints up to 500,000 years old.

Electron spin resonance, which measures the amount of energy trapped in shells, corals, volcanic rock, and tooth enamel, is another radiation damage technique. Here again, the amount of trapped energy present in an archaeological specimen is a function of time; once the amount of trapped energy is measured and the background radiation calculated, the amount of time since the rock, shell, coral, or tooth formed can be computed. Electron spin resonance has been applied successfully to objects as young as one thousand years and as old as one million years of age.

Fission track dating, a third radiation damage technique, makes use of the fact that radioactive decay may leave discernible, microscopic tracks in a material. These tracks may accumulate at a regular rate through time. When this rate can be estimated and the number of tracks counted, an estimate of the age of an object can be calculated. Fission track dating has been used to date materials as young as a few

thousand years old; from a human standpoint, there is no effective upper limit to the applicability of this procedure.

Dendrochronology

Biology also supplies the archaeologist with an important natural calendar in the form of the annual growth rings of trees. It is commonly the case that trees add a single growth ring for each year that they are alive. In many cases, the thickness of a growth ring is a factor of a measurable aspect of the environment during the year the ring was added; for example, mean temperature or amount of precipitation. This correlation between tree ring width and yearly climate fluctuations actually was recognized in the fifteenth century by Leonardo da Vinci. In the first three decades of the twentieth century, the University of Arizona astronomer A. E. Douglass (1867–1962), attempting to assess a possible correlation between sunspot activity and climate change, examined fluctuating tree ring width and is credited with recognizing the potential of tree ring analysis in archaeological dating. In the American Southwest, where tree ring dating, or dendrochronology, has been particularly useful in archaeological application, the width of an annual tree ring is proportional to the amount of rainfall that fell in the year the ring grew; thick rings are added in years when precipitation is abundant, rings of intermediate width are added when rainfall amounts are intermediate, and thin rings develop during years when rainfall amounts are meager.

This yearly variation in tree ring width allows researchers to extend a tree ring sequence back in time. Dendrochronologists accomplish this by developing what is called a master sequence for a region by beginning with a living tree. That tree, like all trees, exhibits a nonrepeating, more or less random succession of thick, medium, and thin rings reflecting the nonrepeating pattern of high, medium, and low yearly rainfall amounts during its lifetime. This tree's sequence of ring widths will be a close match to that exhibited by all the other trees of the same species growing in the region since they were all subjected to

the same rainfall amounts as these varied from year to year. The living tree anchors the master sequence in time, as the dendrochronologist knows the precise year in which each of its rings were created simply by counting backward from the outermost, most recently grown ring, which represents the current year.

Next the sequences of tree rings exhibited by a number of dead trees are compared with the rings of the living tree in the search for a substantial, matching series of tree ring widths. If the lives of the living and any of the dead trees overlapped in time, their ring width sequences of thick and thin rings will match for that period of overlap. For example, if the succession of varying widths of the innermost ten rings of the living tree match in size and order the outermost ten ring widths of a dead tree, in all likelihood those two trees were both alive during that same ten-year period. Because we know the precise year each of the living tree's rings correspond to, we can now fix the dead tree in time; its final ring was added in the tenth year of the living tree's existence, and we know what year that was. By repeating the same procedure numerous times with successively older trees overlapping in time, dendrochronologists have developed master tree ring width sequences that reach back more than twelve thousand years. The discovery of well-preserved tree ring sequences in ancient Kauri trees excavated in New Zealand may enable the extension of a master sequence for the region where the tree remains were found back to nearly sixty thousand years.

In practice, when an archaeological specimen of wood is found—for example, a log beam in an ancient pueblo or a fragment of log used in a prehistoric palisade—its ring width sequence is examined by computer, and its fit along the master sequence is determined. In that way, the actual year in which the archaeological specimen died or was cut down can be established. If we assume that the log was used soon after it died or was cut, that year can be associated with the archaeological site in which it was found. Different master sequences have been worked out and are constantly being expanded and refined for various reasons all over the world.

Calibrating Radiocarbon Dating

As mentioned previously, the accuracy of radiocarbon dates depends on a constant proportion of radioactive carbon in the Earth's atmosphere, and this, unfortunately, is not always the case. Tree ring dating, along with a number of other methods, can help control for changes in the atmospheric radiocarbon content. Once laid down in a tree, no additional carbon is incorporated into a ring. Therefore, a radiocarbon date determined for a particular tree ring represents the "radiocarbon year" for that ring's "calendar year" as represented on the dendrochronological master sequence. An enormous number of individual tree rings have been radiocarbon dated, and a calibration curve has been developed. Combining dendrochronology with other methods, notably varve analysis (varves are individual strata deposited in lakes on a yearly basis, one varve for each year), the radiocarbon calibration curve now reaches back approximately twenty-six thousand years. This means that within that period, a given radiocarbon date can be accurately adjusted to a more realistic actual or calendar age by reference to that calibration curve.

Dating with Style

New technologies are constantly replacing old ones, and styles come into fashion and then fall out of favor. Most of us are familiar with the progression of technology and the vicissitudes of fashion in our own culture. Most would have no trouble guessing the approximate date of an automobile with lots of chrome and sharp fins (styles popular in the 1950s) or a photograph in a college catalogue showing male students with long hair and faded, torn jeans (the late 1960s and early 1970s). Even a casual examination of the history of the now nearly ubiquitous iPod shows a series of technological and stylistic developments since the MP3 player's introduction in 2001. If you know when Apple introduced subsequent iPods with new technologies (for example, when they replaced the scroll wheel with the touch-sensitive wheel or when they introduced color displays), you

can tell the manufacture date of an iPod just by looking at it.

Archaeologists may accurately determine an ancient artifact's age in much the same way. If a unique style of making spear tips or pottery has previously and consistently been dated to a particular point in time, then when another spear tip or potsherd is found that matches the known object's form and style, archaeologists propose that the newly found artifact dates to a similar period. For example, when confronted with a long, narrow spear point with a shallow channel running up less than half the length of each face of the point, a New World archaeologist will confidently conclude that the spear point in question is between 10,000 and 11,500 years of age. This confidence results from the fact that whenever points looking like that have been found previously, they have been associated with dates in that range (for example, by being found embedded in an animal bone that produced a radiocarbon date that matches that time period).

Other Methods of Dating

There are other dating techniques used by archaeologists. Archaeomagnetic dating is an absolute technique that has been used especially in the American Southwest for more than thirty years. Magnetic particles in, for example, the bricks in an ancient kiln will point to what was magnetic north at the time the kiln was in use. Noting where they point and knowing when that location corresponded to magnetic north allows archaeologists to date the kiln. The Colorado State University scientist Jeff Eighmy and his colleagues

have worked out a master curve of the locations of magnetic north that extends from the present back to approximately 600 CE. Seriation, a relative technique developed in the late nineteenth century, is based on a typical pattern of change in the popularity of artifact styles from their introduction into a culture, through their growth in popularity, to their decline and eventual replacement by new styles.

Whatever the procedure used, accurate sequencing and dating allows the archaeologist and historian to construct a temporal framework from which the trajectory of human cultural development can be calculated. Indeed, being able to answer the question "when?" provides researchers with a context within which the others whys and wherefores of human history can be answered.

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See also Archaeology; Periodization

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Decolonization

The emergence of many independent states from under colonial rule or domination by European powers between 1945 and 1990 was more significant to a large portion of the world's population than the Cold War, yet this decolonization has received less attention from historians. The process led to the sovereign independence of many states in spirit, as well as in name.

Not many years ago decolonization was a Cinderella subject in international relations, the poor sister to the study of the Cold War. For historians, it was the “inevitable” terminus to the history of empire, a sort of punctuation mark before the new history of postcolonial states got under way. In a world in which the division between the communist and noncommunist worlds still seemed the most important issue in world politics, and the great fissure of 1917 the real beginning of modern history, this was perhaps inevitable. Even so, it was always a curiously Atlantic-centered view of the world. It disregarded the fact that for most of the world's peoples, the most important political fact after 1945 was the dismantling of the apparatus of colonial rule or semicolonial domination that had extended over so much of the world, and its replacement by around 150 independent states. There was always a powerful case for saying that the “headline story” of world history between 1945 and 1990 was decolonization.

Toward a Definition

Part of the difficulty, of course, was definition. Like *imperialism*, *decolonization* is a slippery, elusive term that historians and others frequently use without

defining the meaning that they want to attach to it. But to think about decolonization, its significance, and its causes is necessarily to ponder its meaning. We can hardly explain it, or decide when it began, without being sure what it is. Typically it has been used in a narrow and restrictive way to mean the moment at which sovereign independence is granted to a former colonial territory. On occasions, this has been extended to include the process, or series of events, by which independence is reached. In other words, the term has usually been confined to those countries that were formally subordinated to an imperial power (by annexation, settlement, conquest, or protectorate status), and to the political and legal stages whereby they gained sovereignty. Defined in this way, it is easy to see why decolonization has often seemed no more than a brief and predictable epilogue to the age of imperialism.

There are two reasons why this conventional definition is of little use if we want to grasp the real nature of the change that took place. First, it makes no account of those countries where foreign domination in less formal (and less obvious) guise was the dominant fact in their external relations. The list is a long one: it would include China for much of the period from 1842 until 1949; Egypt from 1882 until 1956; Iran from the late nineteenth to the mid-twentieth century; and the “mandate” countries of Syria and Iraq until after 1945. It might include parts of South America between the 1880s and the 1940s, or even later. It ought to include those parts of the former Soviet empire that were complacently regarded by the outside world as willing members of the Soviet Union. In other words, a legalistic definition of *decolonization* drastically reduces the scale of the phenomenon, and

First they ignore you, then they laugh at you, then they fight you, then you win. • Mohandas Gandhi (1869–1948)



Unsigned, *Indian Demons Attacking Fort Defended by European Troops* (c. 1791). After centuries of British dominance, the nationalist movement in India became stronger than anywhere else in the colonial world. Anne S. K. Brown Military Collection at the Brown University Library.

ignores the reality of foreign control in many countries where its overthrow after 1945 (or since 1989) has been the most powerful influence on their international attitudes.

Second, decolonization as the gaining of sovereignty is an unhelpful guide to the substance of freedom and independence. Canada, Australia, New Zealand, and South Africa all received full sovereignty by the Statute of Westminster in 1931. Each

became free to pass its own laws, change its constitution, and conduct its foreign policy. But all remained part of the British Empire and freely accepted the British Crown as head of state. When were they decolonized? Indeed, Australia and New Zealand became more dependent upon Britain for defense than they had been before 1931. Similarly, Egypt was declared independent after the wartime British protectorate was given up in 1922. But no realistic observer would have doubted that the wishes of the British ambassador were a cardinal factor in Egyptian politics.

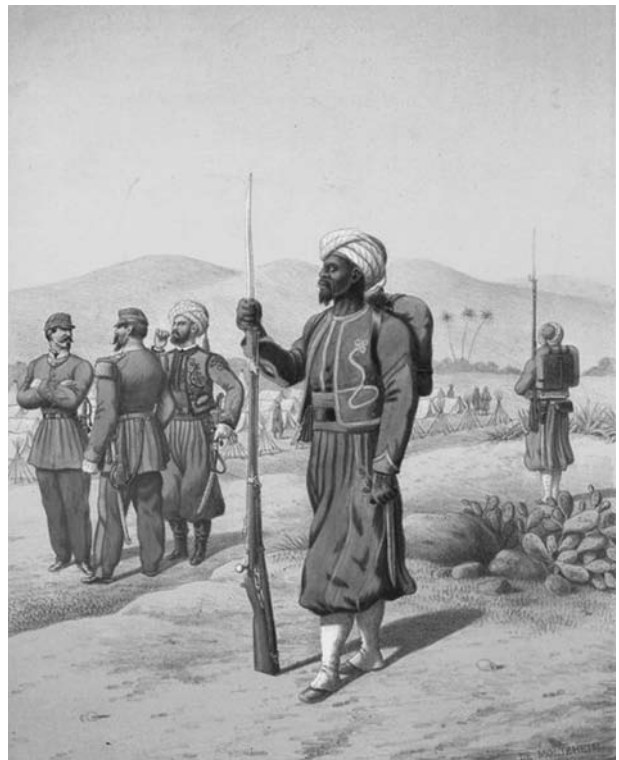
Decolonization is more usefully thought of as the demolition—slow and gradual in some places, more rapid in others, long delayed in some—of a global regime that had existed in several dimensions since the 1880s, and which had largely disintegrated by 1960. The most obvious aspect of this regime was the partition of large parts of the world into the imperial possessions of the European powers (including Russia) and their junior partners, the United States and Japan. These powers also claimed rights of “informal empire,” through extraterritoriality and “unequal treaties” in theoretically independent states (nineteenth-century China is the best example). They also asserted a legal “norm” that conferred the right to intervene in states whose “standard of civilization” fell below their own—a right usually exercised on behalf of their own citizens. This global regime assumed a division of labor in which imperial states made manufactured goods, or supplied capital, while colonies and semicolonies produced the raw or semifinished commodities with which they were exchanged. Enforced free trade, like that imposed on China by treaty, was the means to achieve this beyond the frontiers of imperial rule. There was a demographic face to this global system. It was the mass emigration of Europeans to places of permanent settlement or (where their numbers were less) social mastery in the extra-European world; and a much-smaller-scale migration of Afro-Asian labor as transients with few rights and little prospect of citizenship in the lands that they settled. Finally,

undergirding the whole was the pervasive notion of a cultural hierarchy (often expressed in terms of “race”). Those cultures not rooted in northwestern Europe might be sighed over for their beauty, admired for their subtlety, or envied for their spiritualism. But they lacked what the late Victorians called social efficiency: the capacity for the “moral and material progress” on which the British rulers of India sent an annual report to the parliament in London.

This broader and more realistic definition may allow us to think more precisely about the causes of the change that decolonization brought. It has become fashionable recently to claim that empire has revived—or perhaps never gone away. But if the criteria above are accepted, it is clear that although empires still exist, and perhaps will always exist in some form, empire as the organizing principle in international affairs, governing the ethos of interstate relations, was a historical phenomenon that gave way around 1960 to a new world order in which its characteristic features were largely obliterated. Indeed one useful way to think about decolonization is to see it as the successor phase in global politics between the end of empire and the onset of the new international conditions that set in after 1990.

Conditions of Decolonization

If decolonization is defined in this way, what were the conditions that brought it about? Typically historians have elected to emphasize one main cause: the irresistible rise of anticolonial nationalism, which forced the imperial powers to abandon their unequal privileges and concede national sovereignty to an emergent group of nationalist politicians. It is possible to find cases where this holds true, but as a general explanation it is defective. It ignores the extent to which, before World War II, colonial rulers had invariably been able to divide or outmaneuver their colonial opponents and keep overall control of the political process. This was what had happened in India, where the nationalist movement was stronger than anywhere else in the colonial world. For colonial



A nineteenth-century print shows native Algerian soldiers in the service of the French Empire, which suffered catastrophic defeat after World War II. Algeria gained full independence in 1962. New York Public Library.

rulers to lose their footing required the intervention of some exogenous force. A second school of historians has seen the decisive change as a loss of interest among the colonial powers, as new domestic priorities (financing the welfare state), new international concerns (the turn toward closer European unity), or more democratic values forced a drastic reappraisal of the imperial “burden.” But this claim is weakened by the fact that after World War II almost all the colonial powers showed a *heightened* interest in the exploitation of their colonial possessions. Third, it is often argued that the rise of the superpowers after 1945 handed global dominance to two states who agreed about little except their opposition to the survival of a Europe-centered colonial order. But this argument, too, must be treated with caution. American attitudes to European colonialism were at best ambivalent before the later 1950s, and superpower dominance before around 1960 is easily exaggerated. It is worth bearing in mind that the smallest



and weakest of Europe's colonial powers, Portugal, did not abandon its colonies until 1974.

The solution is not to retreat into a catchall explanation in which every plausible suspect plays an ill-defined part. What precipitated the fall of the imperial order that had imposed varying degrees of subordination on so much of the world was the astonishing course of World War II, which saw the catastrophic defeat of one of the two greatest colonial powers (France) and the virtual bankruptcy of the other (Britain). It was hardly surprising that the political controls, ideological norms, and economic structures over which they presided, and to whose legitimacy they gave strength, would be drastically if not terminally weakened. The most obvious symptom of this loss of power was the rapid postwar withdrawal of Britain from India, the colony whose military resources had underwritten much of the British imperium in the Afro-Asian world. To all intents, the imperial order was over by 1945. It was rescued by the Cold War, which allowed the old colonial powers, with American help, to recover some of their prewar position, and to offset their losses by accelerating the development of their remaining possessions. But the strain of this effort and the hostility it roused among colonial populations imposed heavy costs, both political and financial. It was aggravated by the partial (but irrecoverable) breakdown of the old order in East and South Asia and the Middle East in the postwar turbulence after 1945. When the superpower rivalry for influence became global in the late 1950s, the remaining apparatus of European colonialism was quickly demolished. By that time, its ideological legitimacy, cultural authority, and economic system had already largely vanished.

Decolonization, then, cannot be reduced to the achievement of sovereignty by former colonial states in a sequence that began in 1947 and was largely completed by the late 1960s. Decolonization was a much larger process that made sovereign independence possible for many small, weak states, and made it much more real than the nominal sovereignty enjoyed by China or Egypt in the interwar years.

Decolonization was a transformation of the international system that occurred under conditions of a gradually intensifying bipolar rivalry. It was slow, untidy, and incomplete—leaving a Portuguese Empire until the mid-1970s, two white minority “settler” states in southern Africa until 1980 and 1994, and a Soviet empire until after 1990. As a phase in world history, decolonization may be considered at an end. Empires will survive (there is a “Chinese Empire” in inner Asia, and a “Russian Empire” in the Caucasus). New empires may appear, not necessarily in the form of territorial dominion. But the Europe-centered world order that decolonization dismantled has gone for good.

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See also Colonialism; Postcolonial Analysis

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Deforestation

Humans have been felling, using, and burning trees for about half a million years, and the forests have receded as human populations have grown and spread. The clearing of woodlands for agriculture has been the leading cause of deforestation, but the harvesting of timber as a raw material and fuel has also played a significant role.

The word *deforestation* is a wide-ranging term to cover the cutting, use, and elimination of trees. Subsumed under it are other activities like fire, domestic heating and cooking, smelting metals, making ceramics, construction of shelter and implements, and the creation of new land for cultivation and grazing. Deforestation is so basic that it is woven into the very fabric of human existence, and hence of world history. Ever since the emergence of *Homo erectus* some 500,000 years ago the quest to provide shelter, food, and warmth has resulted in the use and abuse of the Earth's mantle of forests.

There is much uncertainty about the pace and locale of deforestation during past (and even present) ages. This revolves around the multiple meanings given to three basic questions. What exactly is a forest? What was the extent and density of trees at any past given time? And what constitutes "deforestation"? Pragmatically one may say that a forest can range from a closed-canopy tree cover to a more open woodland, which affects density. *Deforestation* is used loosely to mean any process that modifies the original tree cover, from clear-felling to thinning to occasional fire. It should not be forgotten, however, that forests regrow, often with surprising speed and vigor, and forest regrowth has occurred whenever pressures

on it have been relaxed. This was observed after the Mayan population collapse around 800 CE, after the Great Plague in Europe after 1348, after the initial European encounter with the Americas in 1492, and with agricultural land abandonment in the post-1910 eastern United States and in post-1980 Europe.

Premodern Age (to 1500 CE)

Because crop domestication and the increase and spread of people occurred in largely forested environments, ancient societies everywhere had a cumulatively severe impact on forests. In Europe, Mesolithic cultures (c. 9000–5000 BCE) set fire to the woodland edges to facilitate hunting. The succeeding Neolithic agriculturalists (c. 4500–2000 BCE) had a far greater impact as they felled forests on the fertile loessial soils with stone-and-flint axes to engage in intensive garden cultivation and extensive wheat growing. In order to vary diet, they also ran large herds of pigs, sheep, and especially cattle in woodland and cleared pastures for their meat, milk, blood, and possibly cheese. It was a stable, sedentary society that made full use of the many products of the forest, one calculation being that on average it required 20 hectares of forest land to sustain one person in fuel, grazing, constructional timber, and food.

In Asia, complex and highly organized societies flourished in the forests of the southern and south-eastern parts of the continent. Rotational cutting and cultivation followed by abandonment (swiddening) in forests was accompanied by an intensive garden culture for fruit, spices, and vegetables, and the peculiar and highly innovative development of wet rice cultivation (rice paddies), a technique that stopped



In parts of Asia, fertilizers sparked regrowth of local hybrid poplars (*Populus simonigra*) planted in irrigated sandy soil.

erosion and leaching of the soil in the cleared forest in heavy-rainfall areas. Stock, particularly cattle and pigs, were integral to all parts of the economy.

The evidence for similar processes is unfolding for the Americas. Earliest were the swiddens in the equatorial upland rain-forest areas from as early as 12,000 BCE. From the tropical Gulf of Mexico lowland civilizations of the Olmec and Maya to the less organized tribal groups of the Amazon basin, rain forest was being chopped, burnt, and changed or eliminated. Large patches of the Amazon forest were altered irrevocably by the selection and propagation of useful trees and by different cycles of cultivation, so that the mighty rain forest may be one large cultural artifact. In North America, the earliest food-growing settlements (c. 10,000 BCE) were in the rich bottomlands of the continent's rivers in the South and the Southeast. Similar to the practice of the European Neolithics, flood plains and lower river terraces were cleared, and lower slopes altered as intensive cropping expanded, but unlike the Neolithics, hunting loomed much larger in the economy. The vast eastern temperate woodlands were settled later (after c. 800 CE) but the same imprints are evident, resulting in a mosaic of intensively cultivated cleared lands, abandoned fields with early forest succession, and thinned and altered forests. The great difference between the Americas and Eurasia was the absence of grazing animals in the Americas, which had an effect on the Eurasian forests by preventing regrowth and making clearing/firing worthwhile to promote pasture.

Knowledge about deforestation in Africa is sparse, and with the exception of settlement in savanna-woodland and adjacent belts in west Africa, it may not have been very extensive.

The conclusion is that the impact of early humans on the forest was far greater than expected; it may have been one of the major deforestation episodes in history, which left anything but the pristine forest that is such a feature of the romantic imagination of the past and the environmental rhetoric of the present.

The classical world of the Mediterranean basin provides, for the first time, rich literary detail of wood consumption for shipbuilding, urban heating and construction, and metal smelting, but it is tantalizingly silent about clearing for agriculture (always the greatest cause of deforestation) that must have gone on everywhere. This was to be a common story in later ages too. The chopping down of trees as a prelude to farming and providing food was so commonplace that it simply did not warrant a mention, but settlement patterns and crop figures show how extensive it must have been.

The Middle Ages in western and central Europe were entirely different. Here an energetic, inventive, and rapidly expanding population left ample records of forest clearing through charters, rent rolls, court cases, field patterns, and place names. Clearing was motivated by a strong religious belief that humans were helping to complete the creation of a divine, designed Earth and a desire by lay and ecclesiastical lords to expand rental revenues by encouraging settlement on the forest frontier. Also, individuals wanted to achieve social freedom, property, and emancipation by breaking free of the rigid feudal ties.

Undoubtedly three technical innovations helped raise agricultural production. First, the dominant system of two fields with one fallow was replaced by a three-field system, thus a shortening of the fallow period. This was possible because new crops like oats and legumes helped to fertilize the soil and supplemented animal and human nutrition. Second, the development of the wheeled plow with coulter and moldboard allowed cultivation to move from the



A forest worker fells tree at Ellakanda plantation block, a trial cable-logging site at Bandarawela, Sri Lanka.

light soils onto the heavy moist soils that were usually forested. Third, plowing efficiency was improved by the invention of the rigid horse collar and nailed horseshoes, increasing speed and pulling power, thus favoring the horse over the ox. A major underlying driving force was a sixfold increase of population between 650 and 1350 and the need for more food to avert famine.

Cultivation rose from about 5 percent of land use in the sixth century CE to 30–40 percent by the late Middle Ages. The forests of France were reduced from 30 million hectares to 13 million hectares between around 800 and 1300 CE. In Germany and central Europe, perhaps 70 percent of the land was forest covered in 900 CE, but only about 25 percent remained by 1900.

The various elements interlocked to produce what Lynn White, historian of medieval technology, called “the agricultural revolution of the Middle Ages” (1962, 6), which asserted the dominance of humans over nature. It also shifted the focus of Europe from south to north, from the restricted lowlands around the Mediterranean to the great forested plains drained by the Loire, Seine, Rhine, Elbe, Danube, and Thames. Here the distinctive features of the medieval world developed—a buildup of technological competence, self-confidence, and accelerated change—which after 1500 enabled Europe to invade and colonize the rest of the world. In that long process of global expansion the forest and the wealth released from it played a central part.

Massive deforestation must also have happened in China, but the detail is murky. The population rose from about 65–80 million in 1400 CE to 270 million in 1770, and land in agriculture quadrupled. Large swaths of the forested lands in the central and southern provinces were certainly engulfed by an enormous migration of peoples from the north.

Modern World (1500–c. 1900)

During the roughly four hundred years from 1492 to about 1900, Europe burst out of its continental confines with far-reaching consequences for the global forests. Its capitalistic economy commoditized nearly all it found, creating wealth out of nature, whether it be land, trees, animals, plants, or people. Enormous strains were put on the global forest resource by a steadily increasing population (c. 400 million in 1500 to 1.65 billion in 1900) and also by rising demands for raw materials and food with urbanization and industrialization, first in Europe and, after the mid-nineteenth century, in the United States. In the mainly temperate neo-European areas, settler societies were planted and created. Permanent settlement began in earnest by the 1650s after the near elimination of the indigenes by virulent Old World pathogens, like smallpox, measles, and influenza. The imported Old World crops and stock flourished wonderfully. The dominant ethos of freehold tenure, dispersed settlement, “improvement,” and personal and political freedom led to a rapid and successful expansion of settlement, although much environmentally destructive exploitation also occurred. Tree growth was considered a good indicator of soil fertility in all pioneer societies, and the bigger the trees the quicker they were felled to make way for farms. The United States was the classic example. The pioneer farmer, through “sweat, skill and strength,” (Ellis 1946, 73) was seen as the heroic subduer of a sullen and untamed wilderness. Clearing was widespread, universal, and an integral part of rural life; about 460,300 square kilometers of dense forest were felled by about 1850 and a further 770,900 square kilometers by

1910. “Such are the means,” marveled the French traveler, the Marquis de Chastellux in 1789,

by which North-America, which one hundred years ago was nothing but a vast forest, is peopled with three million of inhabitants. . . . Four years ago, one might have travelled ten miles in the woods . . . without seeing a single habitation. (Chastellux 1789, 29)

It was one of the biggest deforestation episodes ever. A similar process of the pioneer hacking out a life for himself and family in the forest occurred in Canada, New Zealand, South Africa, and Australia. In Australia, for example, nearly 400,000 square kilometers of the southeastern forests and sparse woodland were cleared by the early twentieth century.

In the subtropical and tropical forests, European systems of exploitation led to the harvesting of indigenous tree crops (e.g., rubber, hardwoods), and in time to the systematic replacement of the original forest by “plantation” crops grown by slave or indentured labor. Classic examples of this were the highly

profitable crops of sugar in the West Indies, coffee and sugar in the subtropical coastal forests of Brazil, cotton and tobacco in the southern United States, tea in Sri Lanka and India, and later rubber in Malaysia and Indonesia. In eastern Brazil, over half of the original 780,000 square kilometers of the huge subtropical forest that ran down the eastern portions of the country had disappeared by 1950 through agricultural exploitation and mining. In the state of São Paulo alone, the original 204,500 square kilometers of forest were reduced to 45,500 square kilometers by 1952.

Peasant proprietors were not immune to the pressures of the global commercial market. Outstanding was the expansion of peasant cultivation in lower Burma (encouraged by British administrators) between 1850 and 1950, which resulted in the destruction of about 35,000 square kilometers of imposing equatorial (*kanazo*) rain forests and their replacement by rice. Throughout the Indian subcontinent the early network of railways meant an expansion of all types of crops by small-scale farmers, often for cash, that led to forest clearing everywhere.



The Appleton Paper Mills in Wisconsin, circa 1898. Deforestation accelerated in the twentieth century as the demand for paper and wood products boomed, and the need to clear land for factories and cities shrank forests further. Library of Congress.



Uncolonized Asian societies exploited their forests just as vigorously, commercially, and uncaringly as did their European counterparts. There is evidence from, for example, southwestern India and Hunan Province in south-central China from the sixteenth century onward to show that the commercialization of the forest was well established. In the former, permanent indigenous agricultural settlements existed side by side with shifting cultivation, and village councils regulated forest exploitation by agriculturalists. The forest was not regarded as a community resource; larger landowners dominated forest use locally. Scarce commodities such as sandalwood, ebony, cinnamon, and pepper were under state and/or royal control. In Hunan, a highly centralized administration encouraged land clearance in order to enhance local state revenues so as to increase the tax base and support a bigger bureaucracy and militia. State encouragement was also given to migrations into the forested hill country of south China later on. Simply, forests everywhere were being exploited and were diminishing in size as a response to increasing population numbers and increasing complexity of society. In the subtropical world, change was just slower than that unleashed by the Europeans with their new aims, technologies, and intercontinental trade links, but no less severe. Measures of destruction are hard to come by, but between 1860 and 1950 in South and Southeast Asia, 216,000 square kilometers of forest and 62,000 square kilometers of interrupted or open forest were destroyed for cropland.

During these centuries deforestation was also well underway in Europe itself, which was being colonized internally. This was particularly true in the mixed-forest zone of central European Russia, where over 67,000 square kilometers were cleared between around 1700 and 1914.

The insatiable demand in all societies for new land to grow crops and settle agriculturalists has been matched by a rising demand for the products of the forest themselves. For example, the European quest for strategic naval stores (masts, pitch, tar, turpentine) and ships' timbers made major inroads into the forests of the Baltic littoral from the fifteenth century

onward and those of the southern United States after about 1700. Alternative construction timbers like teak and mahogany were utilized from the tropical hardwood forests since the beginning of the eighteenth century.

The Last Hundred Years

The pace of transformation increased during the first half of the twentieth century. In the Western world demands for timber accelerated. New uses (pulp, paper, packaging, plywood, chipboard) and relatively little substitution of other materials boosted use, while traditional uses in energy production, construction, and industry continued to loom large. The indispensable and crucial nature of timber in many Western economies gave it a strategic value akin to that of petroleum in economies today. In the tropical world the massive expansion of population by more than half a billion on a base of 1.1 billion resulted in extensive clearing for subsistence, accompanied by an expansion of commercial plantation agriculture. In all perhaps 2.35 million square kilometers of tropical forest were lost between 1920 and 1949. The only encouraging feature in the global picture during these years was the reversion of farmland to forest. This had begun in the eastern United States with the abandonment of "difficult" and hard-to-farm lands in New England in favor of easier-to-farm open grasslands, and continued with the abandonment of some cotton and tobacco growing lands in the southern States. A similar story unfolded in northern Europe with "marginal" farms.

The most publicized deforestation—the deforestation everyone thinks of when the word is mentioned—occurred after 1950. Since then the temperate coniferous softwood forests have about kept up with the demands of industrial societies for supplies of timber and pulp. But the focus of deforestation has shifted firmly to the tropical world. Here, better health and nutrition have resulted in a population explosion and an additional 3.5–4.0 billion people. These are often landless people who have moved deeper into the remaining forests and farther up steep forested slopes. They have no stake in the land and therefore

The unrecorded past is none other than our old friend, the tree in the primeval forest which fell without being heard. • **Barbara Tuchman (1912–1989)**

little commitment to sustainable management. In addition chain saws and trucks have moved felling from the province of the large firm to the enterprising individual. Since 1950 about 7.5 million square kilometers of tropical forests have disappeared, Central and Latin America being classic examples. In addition, the tropical hardwood forests are being logged out for constructional timber at a great rate, while wood is cut for domestic fuel in prodigious quantities in Africa, India, and Latin America. Globally, fuel wood—cutting now roughly equals saw timber extraction—about 1.8 billion cubic meters annually compared to 1.9 billion cubic meters. Cutting wood for fuel is forecast to rise rapidly in line with world population increases.

The Future

The long and complex chronicle of deforestation is a significant portion of world history. It is one of the main causes of terrestrial transformation, whereby humankind has modified the world's surface, a process that is now reaching critical proportions. One thing is certain: with an ever-increasing world population (another 2–3 billion by 2020), many will want to exploit resources and the process of deforestation will not end. Others will want to restrict forest use and preserve it. The tensions between exploitation and preservation will be intense.

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See also Agricultural Societies; Amazonia, Ancient; Paper; Timber; Trees

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Delhi Sultanate

In 1192, the Turkic ruler Muhammad of Ghor established the Delhi sultanate, a state that brought Islam and Muslim culture to the northern Indian subcontinent. The combined Hindu and Muslim influences inspired a new culture that laid the groundwork for the achievements of the Mughal Empire, which replaced the Delhi sultanate in 1526.

The Delhi sultanate (1192–1526) was established with the victory of Muhammed of Ghor (d. 1206), a Turkic ruler, over the Rajput king Prithviraj Chauhan, the ruler of Ajmer and Delhi; it represented the emergence of a ruling power that was not indigenous to the region. A new religion (Islam) and culture began to pervade the northern portion of the Indian subcontinent as the Delhi sultanate came to control major areas of present-day India, Bangladesh, and Pakistan. Gradually, Indian culture, which was pluralistic in nature, was enriched by this new cultural infusion. It would be wrong, however, to think of the period of rule by the Delhi sultans as a period of Muslim rule, as categorizing historical periods according to the ruler's religion is against historical norms; and in any case the whole of the Indian subcontinent was never controlled by the sultans.

History

The lure of wealth, religious zeal, and a desire for territorial aggrandizement were factors behind the Turkic conquest from Central Asia. The Turks' advanced military technology, lack of unity among the regional powers, prevailing social tensions, and the apathetic attitude of the common folk facilitated

the Turkic conquest. Muhammad of Ghor was succeeded by his slave and general, Qutb-ud-Din Aybak (d. 1210), and because a number of former slaves ruled during the period 1206 to 1290, this period is sometimes called the slave dynasty, though in reality no sultan was a slave at the time he became ruler, and there were actually three dynasties during this period (1206–1290).

Under the third sultan, Iltutmish (reigned 1211–1236), a permanent capital was established at Delhi; he also expanded the territory controlled by the sultanate. Iltutmish bequeathed a strong form of military despotism to his successors. Raziya Sultana, his worthy daughter and the first Muslim woman ruler of India, became embroiled in the conspiracy of the Group of Forty, a group of Turkic nobles who wished to control the throne. The latter held sway until the coming of Ghiyas-ud-Din Balban (reigned 1266–1287), who destroyed the Forty ruthlessly, strengthened the army, and suppressed any form of dissent.

The establishment of the Khalji dynasty marked the beginning of the ascendancy of Indian (as opposed to Turkic) Muslims. The most important ruler of the dynasty, 'Ala'-ud-Din Khalji (reigned 1296–1316) extended the boundary of Delhi sultanate into southern India. His market reforms, taxation policy, and military administration earned him recognition as one of the efficient rulers of the period. By contrast, the ill-fated experiments of one ruler of the Tughluq dynasty, Muhammad ibn Tughluq (reigned 1325–1351), included an attempt to shift the capital from Delhi to Daulatabad and the introduction of token currency—copper coins, which the sultan made legal tender. Although without intrinsic value, their



value was kept par with gold and silver coins. These experiments brought misery to his subjects.

The Mongol chief Timur (1336–1405) invaded Delhi in 1398, leaving a trail of devastation and weakening the sultanate. The Delhi sultanate was finally overthrown by Babur (1483–1530), founder of India's Mughal Empire (1526–1857), at the first battle of Panipat in 1526.

Administration and Culture

In the beginning, the Delhi sultanate was divided into units called *iqtas*. The owner (*iqatadar*) of each *iqta* collected revenue and supplied army contingents to the sultan. The *iqatadars* became hereditary owners, and abuses crept into the system. Later, a different administrative setup came into being, with the sultan at its leader. The sultan was head of the state and enjoyed absolute power. The sultan's vizier was the prime minister, and there were several different ministries. Religious scholars enjoyed special privileges, and Hindus, as non-Muslims, had to pay a special tax. Despite that burden, the Hindu upper classes led a comfortable life. Although there were conflicts between the Hindu and Muslim ruling elites, common people of both religions lived in harmony, and the aristocracy enjoyed a life of luxury. There was growth of urban centers, and the volume of trade with western Asia, Southeast Asia, and China increased. The sultanate was very much a part of international trade, and Muslim traders from the region helped spread a liberal brand of Islam to Southeast Asia.

The Delhi sultanate oversaw the flourishing of a new cultural era. A new style of architecture emerged that incorporated both Hindu and Muslim motifs. Notable contribution of the Delhi sultans to architecture include the Quwat-ul-Islam mosque, the Qutab Minar, the Siri fort, Alai Darwaza, the cities of Tughluqabad and Firuzabad, and the tomb of Firuz Shah Tughluq (reigned 1351–1388). Nor did the art of painting die out; it was at home in the murals, painted textiles, and manuscripts of the period. Music was patronized by some sultans and provincial rulers;

the most important figure in Indian music during this period, also considered one of India's greatest Persian-language poets, was Amir Khusrau (1253–1325). Credit goes to him for introducing several forms of singing and new ragas. Linguistically, amalgamation of dialects of Hindi and Persian resulted in the beginning of the Urdu language. The contemporary historical writings of Minhaj-us-Siraj, Amir Khusrau, Ziauddin Barani, Shams Siraj Afif, and Yahya bin Ahmad Sirhindi are important source materials for studying different aspects of the Delhi sultanate.

The Sufi (Islamic) and bhakti (Hindu devotional) saints of the period dedicated themselves to the cause of humanity and emphasized the cooperation between the two religious communities. Both preached equality and were against rituals and a caste-based social system. Bhakti saints such as Kabir (1440–1518) and Caitanya (1485–1533) stressed the union of the individual with God through acts of devotion. This period also saw the establishment of a new religion, Sikhism, formalized by Guru Nanak (1469–1539). The Sufi religious mystics offered a common meeting ground for Muslims and non-Muslims. Striving for Hindu-Muslim unity, they created a liberal atmosphere. Their tombs still attract people of both religions.

In sum, the period of the Delhi sultanate was important for Indian history, culture, and society. The new composite culture that began to emerge laid the groundwork for the cultural achievements of the Mughal period.

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Democracy

Democratic government requires popular control over public decisions and decision makers, and an equality of respect and the right to be heard between citizens in the exercise of that control. A constitutional democracy imposes codified legal limits on the powers of the government. A separation of powers, or an arrangement of checks and balances, exists between the executive, legislative, and judicial branches of government.

As an organizing principle, constitutional democracy designates a large political community and defines it as inclusive, open, and free. Nations governed by such a democracy are bound by widely accepted guidelines through what is usually a written public consensus. The shared core values include civil liberties, pluralism, tolerance, and wide access to expression in all forms of the media. Sometimes entrepreneurial markets and social rights are also embraced. Constitutional democracy is the most sensible countermeasure to authoritarian and dictatorial regimes, which owe their legitimacy to dynastic tradition, affirmation by religious establishments, or sheer coercion.

How best to conduct the public affairs of human societies has been a challenge throughout history, occupying the minds of important thinkers, such as Plato and Aristotle, from ancient Greece on. Whether such affairs are conducted through providential inspiration, dictatorial rule, or a social contract, no system has been perfect. Any system that has emerged has needed reform to cultivate the goodwill of those governed in a dynamic world in which challenges and needs always change. The most effective way of

quantifying public opinion is through popular elections held periodically in a free and fair manner. These elections sanction delegates through a widespread mandate to discuss and resolve important contemporary political, social, and economic issues of power and authority.

Democracy is rule by the people who reside in a particular political unit (such as the city-state, the Greek polis, especially during the eighth through fourth centuries BCE). However, if democracy is taken to its logical conclusion, a majority of those people assembled in a meeting can reverse long-held traditions or, in extreme cases, arrest and even kill those people who oppose the will of the preponderance of participants—the feared tyranny of the majority. Therefore, the shared interest of free people, especially in entrepreneurial and peaceful settlements, dictates the establishment in a document of a set of fundamental principles that legitimizes and secures the continuity of liberty and civil, political, social, economic, and cultural rights, and serves as the foundation of a viable state. Such a document articulates the standards and goals of a defined community with a publicly expressed affinity to certain human values and philosophical norms.

The viability of constitutional democracy is dependent on a deliberative body, for example, a congress or a parliament. In such a body the citizens of a country have representatives—in at least one legislative branch for each level of government within federal or unitary states—who are elected in free, fair, and periodic elections, and vested with the essence of sovereignty. This deliberative body engages in debates that routinely decide the level of taxation, allocation of budgets, domestic measures, security concerns, foreign relations,

Perhaps America will one day go fascist democratically, by popular vote. • William L. Shirer (1904–1993)

and all other matters of public policy. Constitutional democracy also endorses lobbying and petitioning of those people who hold elected positions.

Constitutional democracy is an antidote to both the oppressive, nondemocratic nature of rule by decree apparent in authoritarianism and the unlimited control inherent in unchecked forms of democracy such as majoritarianism (the practice according to which decisions of a group should be made by a numerical majority of its members). Constitutional democracy is a tolerant and pluralistic framework that prevents laws from depriving minorities or individual citizens or circumventing moral norms through positive law—statutes and ordinances that govern a state. Fundamental rights—such as freedoms of opinion, association, expression, religion and worship, due process in trial, and the ability to pursue personal choices—are guaranteed. This guarantee is made without discrimination on the basis of gender, class, nationality, creed, political opinion, sexual orientation, or other personal characteristics that are irrelevant to individual merit.

Advantages

British Prime Minister Winston Churchill (1874–1965) famously said that democracy, for all its faults, is still better than other political systems: “Democracy is the worst form of government except all those other forms that have been tried from time to time.” Constitutional democracy is a manageable alternative to the chaos necessitated by bringing every decision to the scrutiny of numerous people, except for in the smallest jurisdictions that might feasibly practice some form of direct democracy. It is also an antidote to the potential tyranny of decrees issued by kings, queens, generals, or presidents without the advice and consent of those in whose name they presume to govern. The balancing act of parliaments and the judiciary check the absolute powers that executive privilege might otherwise confer upon rulers.

In a constitutional democracy a legitimate regime can rightfully claim a monopoly on the publicly accepted use of coercion, including violence. Societies

in which parliamentarianism prevails are governed by a relatively open political culture with elections contested by multiple parties and individuals. (In parliamentarianism, also known as the Westminster system, the executive branch’s political party, or a coalition of like-minded parties, must have a working majority in the legislature to remain in power.) Compromise is preferred over confrontation. Rules of conduct and debate and respect for fundamental human rights facilitate basic civil rights such as freedoms of expression, speech, assembly, ideology, affiliation, and religion.

John Locke

John Locke (1632–1704), an influential English political theorist of the Enlightenment (a seventeenth- and eighteenth-century philosophical movement marked by a rejection of traditional social, religious, and political ideas and an emphasis on reason, rationalism, and the scientific method), argued that the proper function of societies and states must be based on compromise and freedoms, that is, civil equality. Deeming human civilizations as having emerged voluntarily from an idyllic state of nature, he would not lend credence to coercion or dynastic authority. Government originates in the consent of the people (the idea of the implied social contract) it presumes to lead and for their benefit alone; its legitimacy is dependent on continuous adherence to such principles.

Locke thus advocated sovereignty based on reciprocal equality—a balance of powers and jurisdiction between the judicial, legislative, and executive branches, prohibiting the subordination of any branch. The French political thinker Montesquieu (1689–1755) later articulated this more explicitly in his separation of powers theory. Locke opposed violence that merely enhances the authority of oppressive rulers rather than protect public order. These ideas, being the modern foundations of constitutional democracy, affected subsequent practices in the Western world, including British, French, and U.S. practices. Locke’s writings were particularly influential in the



Independence Hall in Philadelphia, a symbol of U.S. democracy, as it looked in the nineteenth century.

drafting of the U.S. Declaration of Independence and the U.S. Constitution, while Locke was personally involved in drafting the Fundamental Constitution of the Carolinas.

History

It is widely thought that the idea and practice of democracy has its roots in ancient Greece around two-and-half millennia ago (c. sixth century BCE). Oldest and best known of the Greek democracies is ancient Athens. Recent discoveries, however, suggest that some rudimentary form of democracy might have emerged centuries earlier in the Late Bronze Age (c. 1600–1100 BCE) around Mycenae in the northeastern Peloponnese. Archaeological evidence from ancient Mesopotamia suggests that self-governing assemblies might have originated there and spread east toward the Indian subcontinent and westward to Phoenician

port cities such as Byblos and Sidon, before arriving in ancient Athens.

Wherever the roots of democracy might lie, since people first assembled to decide matters of public policy, they have faced the dilemma of how best to maximize participation while introducing a convenient forum for managing affairs efficiently. Direct democracy sounds ideal. Reality, however, may be quite different. A deliberative, representative polity (political organization) may gain viability by establishing an institutional body for regular legislation by a limited amount of members, elected periodically and fairly.

Athens

In Greece the Athenian lawmaker Solon (c. 630–560 BCE) presented an early version of a participatory constitutional democracy, blended with elements of social justice, in a commercial and cultural center. Earning his distinction as a poet, he purported to correct the excesses of exclusive and oppressive aristocratic control of government. Wealthy landowners used their leverage to exploit a severe economic crisis to deprive poorer town dwellers and peasants of their property and freedom or to force them into exile. Solon was chosen as a chief magistrate with broad authority in 594 BCE by the ruling class that he subsequently challenged. His reforms aimed to improve a flawed system, with roots in the Draconian code (a severe code of laws held to have been framed by the Athenian lawmaker Draco) of 620 BCE, by limiting the absolute power of the upper class.

Solon curtailed the influence of the rich and introduced a more humane and balanced legal code to help debtors. Enhancing the Assembly of the People by creating the Boule (a multiethnic council of middle-income citizens), he limited the authority of the aristocratic Council of the Best Men (Areopagus) and enabled all adult male Athenians to vote and be elected. This partial empowerment was a compromise between various classes and contesting interests and was in contrast to the conservative ways of Athens's main rival, Sparta. Nevertheless, because he did not please a certain constituency, Solon became



so controversial that he left Athens, and tyranny prevailed for decades.

Cleisthenes (c. 570–507 BCE) continued Solon's constitutional reorganization. He made the Assembly of the People the sole legislative body, subordinating magistrates to its jurisdiction, increased the influence of the Boule, deprived the Areopagus of effective power, and ensured wide and deep participation in public life. Cleisthenes made Athenian government more accountable to an inclusive, active political community and thus a role model for subsequent civilizations.

By modern standards Athenian democracy is not quite so democratic in terms of inclusiveness, participation, and the extension of suffrage. While there was not the explicit link between property holdings and democratic rights that would later emerge, there were considerable barriers to participation in Athenian democracy, which was exclusively the preserve of adult male Athenian citizens with military training. And in order to be eligible for Athenian citizenship, one generally had to be directly descended from Athenian citizens on both sides of the family tree. Also explicitly excluded from the practice of Athenian democracy were women, children, slaves and freed slaves, foreigners, and those citizens whose rights had been suspended for some sort of indiscretion.

Britain

Centuries later Britain's Westminster tradition involved unwritten conventions, coupled with the constitutional monarchy variant of parliamentarianism. Beginning with the Magna Carta of 1215–1225 and culminating with the Glorious Revolution during the seventeenth century, a growing degree of universal suffrage for the middle class, independent judiciary, civil rights, and more open political practices replaced the rule of the monarchy and the aristocracy.

From a system prevailing only in Western countries, British (and, to a much lesser extent, Dutch, French, Portuguese, and Spanish) colonialism spread constitutional democracy in communities of European settlers to North America, Oceania (lands of the central and South Pacific Ocean), and southern

Africa, although indigenous residents were usually deprived of its benefits. European colonialism also introduced constitutional democracy to Africa, Asia, and Latin America. But due to the hardships of economic exploitation endured by the colonized, ideas of freedom and human rights reflected by constitutional democracy were tinged by suspicions of hypocrisy, as evidenced by charges against John Locke that he personally benefitted from the slave trade through investments in the Royal African Company.

United States

The formative era of the U.S. version of an effective constitutional democracy is identified primarily with Thomas Jefferson (1743–1826). His agenda of civil nationalism emphasized individual freedoms and the separation of church and state. The core of the 1776 Declaration of Independence was “life, liberty and the pursuit of happiness.” The apex of the formative era was the drafting of a constitution in 1787. The Constitution vested sovereignty in the U.S. people (excluding nonwhites, whose ability to be citizens was in doubt well into the twentieth century) through a hybrid of federal authority and individual states, created the presidency, and granted the federal government the ability to tax citizens and command troops.

The 1791 Bill of Rights assured individual rights and civil liberties such as freedoms of speech, peaceful assembly, and due process. The balance of powers (checks and balances) between the three branches of federal government (executive, legislative, and judicial) was consolidated in 1803 with the *Marbury v. Madison* decision rendered by the Supreme Court. That decision enshrined the doctrine of judicial review in U.S. law, providing an impartial judiciary with the ultimate authority.

Canada

In Canada the Charter of Rights and Freedoms of 1982 shows how a country with more than a century of openness and liberty transforms its legal mechanism to address a political crisis. Canada has had a semblance of a constitutional democracy since the

1867 British North America Act. That act ushered in a degree of sovereignty, which gradually strengthened to amount to a full authority of the Canadian government, within a federal structure, ending British colonial rule. Nevertheless, during the 1970s a secessionist movement in Quebec, a primarily French-speaking province, challenged the legitimacy of Canada, a primarily English-speaking country, for allegedly excluding French-speaking citizens from basic rights on linguistic and ethnic bases.

On the eve of the 1980 referendum that would have allowed Quebec to commence on a path of independence, Canadian prime minister Pierre Elliot Trudeau (1919–2000) felt compelled to promise all Canadian citizens, especially those living in Quebec, that he would initiate comprehensive constitutional reforms that would enshrine a form of pluralistic democracy. Indeed, in 1982 Trudeau's government revised substantially the Canadian constitution, guaranteeing federally, through the Charter of Rights and Freedoms, all basic civil liberties while allowing provinces a strong degree of provincial autonomy. To date, this strategy has helped maintain Canadian unity.

India

Postcolonial India, the most populous country ever to have a constitutional democracy, is an example of how constitutional democracy can shape an emerging nation. After a painful struggle with the British and a war with Islamic communities, India rose to independence in 1947. Jawaharlal Nehru (1889–1964) was India's first prime minister (1947–1964). Although Nehru deployed military force against opponents, he championed an inclusive, pluralistic, polyethnic, multicultural state. Nehru largely endorsed the non-violent practices of the Indian nationalist Mohandas (Mahatma) Gandhi (1869–1948).

By proclaiming a constitutional democracy, Nehru positioned himself, and the Congress Party he led, as the custodian of federal identity, mediating between contesting castes and ethnic, religious, and regional constituencies. The guarantee of freedoms played a major role in securing India's viability in the face of

internal separatist ethnic nationalism and external adversity. In particular Nehru tried to enlist the support of vulnerable groups of people such as women and untouchables through written rights that improved their legal status, although practical changes were slow to come.

Nehru's daughter, Indira Gandhi (1917–1984), served as prime minister from 1966 to 1977. Concerned about India's population growth, she pursued harsh sterilization policies. That pursuit led her to subvert democracy by introducing a state of emergency in 1975. Nevertheless, trying to legitimize her deeds, she felt compelled two years later to call parliamentary elections, which she lost. Gandhi surrendered power freely to her opponents; she returned to office in 1980. She was murdered in 1984 by Sikh extremists who purportedly acted to avenge the desecration of their holy sites in her fight to assert her control over all segments of Indian society.

United States, Post–September 11

As part of the U.S. war on terrorism after the terrorist attacks against New York City and Washington, D.C., on 11 September 2001, the U.S. Congress enacted the controversial Patriot Act in November 2001. The act curtailed civil liberties for a limited time because of national security concerns, causing some people to be concerned about the long-term impact on constitutional guarantees of freedom of speech and expression. The United States also attempted to introduce constitutional democracy to Afghanistan and Iraq after liberating the two nations from oppressive rule in 2001 and 2003, respectively. As of 2010 the outcome of those attempts remains uncertain. Some critics maintain that democracy cannot successfully be externally imposed. If it is to take root it must be implemented and owned by the people, for the people.

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See also Government; Parliamentarianism; Revolution—United States

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Descartes, René

(1596–1650)

FRENCH PHILOSOPHER

Even though the seventeenth-century French philosopher René Descartes has been remembered primarily for his contributions to Western philosophy, he also showed a curiosity about many aspects of the natural world. His mechanistic and rationalistic methods have been criticized as often as they have been praised, but they provided a framework for subsequent scientific inquiry.

René Descartes was the leading French philosopher of the seventeenth-century scientific revolution. Although now best known, and commonly vilified, for his defense of mind/body dualism and for his quest for certainty in the theory of knowledge, Descartes was primarily interested in studying the natural world and the human body. His global influence as the intellectual point of origin of modern Western subjectivity, the evil demon of modern philosophy, is undeniable. But it masks the stranger work of the historical figure, who was as puzzled by meteors and by medicine as by metaphysics and method, and more interested in passion, psychosomatics, and perception than in rationality and the soul.

Born in La Haye (now Descartes) in Touraine, and educated at the Jesuit college of La Flèche, Descartes decided on a life of inquiry in his early twenties after studying mechanics and music, and after a series of powerful dreams. He developed a systematically mechanical account of nature, modeling his cosmology and physics on the behavior of fluids, which also plays a key role in his remarkable physiological theories. Descartes settled in Holland in the late 1620s; by 1632 he was in Amsterdam, “dissecting the heads of various animals” to “explain what imagination,

memory, etc. consist in” (Descartes 1985–1991, Vol. 3, 40). But when he heard of Galileo’s condemnation in 1633, Descartes abandoned plans to publish works on the nature of matter and the body.

Descartes definitively rejected the Christian-Aristotelian idea that biological matter has intrinsic powers or built-in ends, claiming that its capacities arise rather from the complex configurations and combinations of physical particles in motion. He was concerned to defend the orthodox picture of the *soul* as nonphysical and immortal, but he denied that *life* was also due to immaterial powers. His posthumous work *L’homme* (*The Treatise on Man*) describes a fictional world of soulless “earthen machines,” mobile automata like the hydraulic statues in “the gardens of our kings.” Descartes’ physiology relied heavily on “animal spirits,” fast-moving but material fluids that flow through the nerves and the pores of the brain.

Descartes notoriously claimed that the human soul interacts with the body-machine by way of the pineal gland, swaying on its supporting network of arteries and directing the flow of animal spirits through the tubes of the brain tissue. Even in creatures without souls, he posited, ordinary cognitive processing involves the construction and reconstruction of patterned traces on the surface of this gland. Descartes had seen in dissection that nonhuman animals also had a pineal gland. So although he did argue that beasts are machines, he thought that these machines are capable of representation, memory, and even sentience and dreams. Despite the old story that he vivisected a dog on his kitchen table, Descartes offered no justification for cruelty to animals. Far from exclusively privileging the rational soul, his work substantially restricted its role and scope. The bodies of

Each problem that I solved became a rule which served afterwards to solve other problems. • René Descartes (1596–1650)



Frans Hals, *Portrait of René Descartes* (1649). Oil on panel. Statens Museum for Kunst, Copenhagen.

the Cartesian automata are not mere objects cut off from the world, responding passively to the whim of the soul, but are fully and holistically embedded in the buzzing whirl of the fluid-filled cosmos.

Many readers encounter Descartes only through his writings on metaphysics and epistemology. In *Discourse on the Method* (1637) and the *Meditations* (1641), Descartes concocts a sequence of radically skeptical scenarios to challenge our trust in traditional beliefs, and to conclude that he can know with certainty his own existence as a “thinking thing” (*res cogitans*). These works have considerable literary and psychological power: the *Discourse* offers an autobiographical fable about Descartes’ individualistic path to knowledge, while the *Meditations* brilliantly uses the jargon of scholastic Aristotelian philosophy against itself, in making theological space for the ongoing mechanistic investigation of the natural world.

In the seventeenth and eighteenth centuries Cartesianism (Descartes’ philosophical doctrine) was attacked less for its incoherent dualism than for the specter of atheistic materialism that both conservatives and enthusiasts read into it. One story, circulated in the eighteenth century to blacken Descartes’ reputation, concerned his illegitimate daughter Francine: having allegedly conceived the child with a housemaid in order to study reproductive processes at close quarters, the philosopher built and carried around a doll in the form of a life-size replica of the child after Francine’s death from scarlet fever (which the historical Descartes called the greatest sorrow of his life).

In the 1640s, Descartes continued to work on recalcitrant problems about physiology and human nature. He constructed a sophisticated but bizarre embryology, and, under persistent questioning from his correspondent Princess Elizabeth of Bohemia, he further developed his views on psychosomatic interaction. In *The Passions of the Soul* (1649) he linked medicine and morality by attending to the individualized dynamics of the emotional life and the union of mind and body. Descartes, who had long been fascinated by schemes for prolonging longevity, died after a harsh Swedish winter tutoring Queen Christina.

Philosophers of many distinct persuasions have since defined their projects in opposition to a vision of Cartesianism as a philosophy of exact order, reason, and pure subjectivity; but modern scholarship strongly suggests that Descartes himself was not that kind of Cartesian.

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See also Philosophy, Modern; Science—Overview; Scientific Revolution

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Desertification

Experts disagree over the current rate at which arable land is becoming desert, to what extent human activities are responsible, and whether the process is reversible. Yet events such as the Dust Bowl of the 1930s in the United States are compelling evidence of a link between desertification and human misuse of the land.

Desertification is the process of land becoming desert, as from human mismanagement or climate change. It remains a controversial issue with regard to definition, nature, rate of spread, irreversibility, and causation. Nonetheless, it is a serious example of land degradation in dry lands. Deserts have repeatedly expanded and contracted during the last few millions of years in response to climate changes, but their margins are now being affected by a suite of increasing human pressures that depletes soil and vegetation resources.

Desertification was first used as a term, but not formally defined, by a French forester named “Aubreville” in 1949, and for some years the term *desertization* was defined as “the spread of desert-like conditions in arid or semi-arid areas, due to man’s influence or to climatic change” (Rapp 1974, 3).

Different experts have defined *desertification* according to its cause. Some definitions stress the importance of anthropogenic (human-caused) actions. The scientist Harold E. Dregne says, “Desertification is the impoverishment of terrestrial ecosystems under the impact of man. It is the process of deterioration in these ecosystems that can be measured by reduced productivity of desirable plants, undesirable alterations in the biomass [the amount of living matter] and the diversity of the micro and macro fauna and flora,

accelerated soil deterioration, and increased hazards for human occupancy” (Dregne 1986, 6–7).

Other studies acknowledge the possible importance of natural climatic controls but give them a relatively lesser role. In a report for the U.S. Department of the Interior / Bureau of Land Management, *desertification* is defined as “the sustained decline and/or destruction of the biological productivity of arid and semi arid lands caused by man made stresses, sometimes in conjunction with natural extreme events. Such stresses, if continued or unchecked, over the long term may lead to ecological degradation and ultimately to desert-like conditions” (Sabadell et al. 1982, 7).

Other experts are more even-handed with respect to the balance of anthropogenic and natural causes: “A simple and graphic meaning of the word ‘desertification’ is the development of desert like landscapes in areas which were once green. Its practical meaning . . . is a sustained decline in the yield of useful crops from a dry area accompanying certain kinds of environmental change, both natural and induced” (Warren and Maizels 1976, 1).

Experts are not sure how extensive desertification is or how fast it is progressing. The lack of agreement on the former process makes determining the latter difficult, prompting some to remark, “Desertification will remain an ephemeral concept to many people until better estimates of its extent and rate of increase can be made on the basis of actual measurements” (Grainger 1990, 145).

The United Nations Environment Programme (UNEP) has played a pivotal role in the promotion of desertification as an environmental issue, as is made evident by this statement from *The World*



The name written in the sand by this Mauri man is “Arbweir,” the ancient name for Chinguetti. Founded in the tenth century, and considered the seventh holy city of Islam, the old city is now buried by sand. FAO of the United Nations.

Environment 1972–1992: “Desertification is the main environmental problem of arid lands, which occupy more than 40 per cent of the total global land area. At present, desertification threatens about 3.6 billion hectares—70 percent of potentially dry lands, or nearly one-quarter of the total land area of the world. These figures exclude natural hyper-arid deserts. About one sixth of the world’s population is affected” (Tolba and El-Kholy 1992, 134).

Some scholars, however, have been critical of UNEP’s views on the amount of land that is desertified. They state: “The bases for such data are at best inaccurate and at worst centered on nothing better than guesswork. The advancing desert concept may have been useful as a publicity tool but it is not one that represents the real nature of desertification processes” (Thomas and Middleton 1994, 160).

Despite its critics, UNEP continues to support issues of desertification. UNEP helped established the U.N. Convention to Combat Desertification (UNCCD), which holds an international World Day to Combat Desertification and Drought on 17 June. These worldwide annual events supported by UNEP and the UNCCD seek to raise awareness and promotion of desertification issues. In 2006, UNEP focused the international World Environment Day (held annually on 5 June) on desertification issues with the theme “Don’t Desert Drylands.”

Rates of Desertification

Experts have conducted relatively few reliable studies of the rate of desert advance. In 1975, the British

ecologist Hugh Lamprey attempted to measure the shift of vegetation zones in the Sudan in Africa and concluded that a portion of the Sahara Desert in Sudan had advanced by 90 to 100 kilometers between 1958 and 1975, with an average rate of about 5.5 kilometers per year. On the basis of analysis of remotely sensed data and ground observations, however, other scholars found limited evidence that this advance had taken place (Helldén 1984). One problem is that substantial fluctuations in vegetation production may take place from year to year. Meteorological satellite observations of green biomass production levels on the southern margins of the Sahara Desert have revealed such fluctuations.

The International Soil Reference Center in the Netherlands conducted a global assessment by soil degradation on behalf of UNEP during the late 1980s and early 1990s. The center used a Geographical Information System to analyze data collected through a clearly defined, but largely qualitative, methodology. Despite its flaws, the Global Assessment on Human Induced Soil Degradation (GLASOD) provided a database through which experts could assess susceptible dry land soil degradation in terms of spatial distribution, contributory degradation processes, and relationships to land use.

The GLASOD estimated that during the late 1980s and early 1990s approximately 1 billion hectares, equivalent to 20 percent of the susceptible dry lands, had experienced accelerated soil degradation caused by human activities. Water erosion was identified as the major physical process of degradation in 48 percent of this area and wind erosion in 39 percent.

Chemical degradation (including salinization) was dominant in just 10 percent of the area, and physical changes such as compaction and crusting in just 4 percent. The severity of degradation was described by the GLASOD as strong or extreme in 4 percent of the susceptible dry lands. This figure relates to lands that have had their original biotic (relating to living organisms) functions of the soil destroyed and that are irreclaimable without major restorative measures.

The spatial character of desertification is also the subject of controversy. The spread of desertlike conditions is not, as popularly supposed, an advance over a broad front in the way that a wave overwhelms a beach. Rather, it is like a rash that tends to be localized around settlements. Fundamentally, “the extension of desert-like conditions tends to be achieved through a process of accretion from without, rather than through expansionary forces acting from within the deserts” (Mabbutt 1985, 2). This distinction is important because it influences perceptions of appropriate remedial or combative strategies.

Experts have debated whether desertification is irreversible. In many cases where ecological conditions are favorable because of the existence of such factors as deep, sandy soils, vegetation recovers after excess pressures are eliminated. The speed of recovery depends on how advanced deterioration is, the size of the area that is degraded, the nature of the soils and moisture resources, and the nature of local vegetation. Much desert vegetation is adapted to drought and to harsh conditions and often has inbuilt adaptations that enable a rapid response to improved circumstances.

Nonetheless, long-term monitoring elsewhere tends to reveal that in certain circumstances recovery is so slow and so limited that it may be appropriate to talk of “irreversible desertification.” For example, in southern Tunisia tracks made by tanks and wheeled vehicles during World War II are still apparent on the ground and in the devastated and unregenerated vegetation.

Causes of Desertification

The causes of desertification remain controversial. Experts have asked whether it is the result of temporary serious droughts, long-term climatic change,



A man pumps water from an artesian well in North Africa to irrigate the fields. Adequate irrigation in this arid region is necessary for buffalo breeding.

Courtesy of the Food and Agriculture Organization of the United Nations.

or human actions degrading the biological environments in arid zones. No doubt severe droughts do take place, and their effects become worse as human and domestic animal populations increase. The devastating drought in the Sahel (the semidesert southern fringe of the Sahara Desert) from the mid-1960s caused greater ecological stress than the droughts of 1910–1915 and 1944–1948, largely because of increasing anthropogenic pressures.

Experts have discredited the concept that climate is deteriorating through postglacial progressive desiccation. However, numerous studies of meteorological data (which in some cases date back as far as 130–150 years) do not allow experts to reach any firm conclusions on systematic long-term changes in rainfall, and the case for climatic deterioration—whether natural or aggravated by humans—is not proven. Indeed, Rapp wrote that after consideration of the evidence for the role of climatic change in desertification his conclusion was “that the reported desertization northwards and southwards from the Sahara could not be explained by a general trend towards drier climate during this century” (Rapp 1974, 29).

Woodcutting is a serious cause of vegetative decline around the area to the south of the Sahara. Many people depend on wood for domestic uses, and the collection of wood for charcoal and firewood is especially serious in the vicinity of large urban centers. Likewise, the recent drilling of wells has enabled rapid multiplication of domestic livestock numbers and large-scale destruction of the vegetation in a radius of 15–30 kilometers around them. Given this



localization of degradation, amelioration schemes such as local tree planting may be partially effective, but ideas of planting massive belts as a *cordon sanitaire* (protective barrier) along the desert edge (whatever that is) would not halt deterioration of the land beyond this belt. The deserts are not invading from without; the land is deteriorating from within.

Clearly, therefore, a combination of human activities (e.g., deforestation, overgrazing, and plowing) with occasional series of dry years leads to the presently observed desertification. The process also seems to be fiercest not in desert interiors, but rather on the less arid marginal areas around them. The combination of circumstances particularly conducive to desert expansion can be found in semiarid and subhumid areas—where precipitation is frequent and intense enough to cause rapid erosion of unprotected soils and where humans are prone to mistake short-term economic gains under temporarily favorable climatic conditions for long-term stability.

These tendencies toward bad land-use practices partly result from the imposition of state boundaries on many traditional nomadic societies, restricting their migration routes, or from schemes implemented to encourage the nomads to become sedentary. Some of their traditional grazing lands have been taken over by cash-crop farmers. The traditional ability to migrate enabled pastoral nomads and their stock to make flexible use of available resources according to season and yearly variations in rainfall and to move away from regions that had become exhausted after a long period of use. As soon as migrations are stopped and settlements imposed, such options are closed, and severe degradation occurs.

People have suggested not only that deserts are expanding because of human activity, but also that the deserts themselves were created by human activity. People have proposed, for example, that the Thar Desert of northwest India is a postglacial and possibly a postmedieval creation, and others have suggested that the vast Sahara Desert itself is largely human made (Ehrlich and Ehrlich 1970). This proposal is not accurate. The Sahara, although it has fluctuated in extent, is many millions of years old, predates human life, and is the result of its climatic situation.

Possibly the most famous case of desertification associated with soil erosion by deflation was the Dust Bowl of the 1930s in the United States. In part the Dust Bowl was caused by a series of unusually hot, dry years that depleted the vegetation cover and made the soils dry enough to be susceptible to wind erosion, but the effects of this drought were worsened by years of overgrazing, poor farming techniques, and the rapid expansion of wheat cultivation in the Great Plains. The number of cultivated hectares doubled during World War I as tractors (for the first time) were employed in the thousands. In Kansas alone the wheat area increased from less than 2 million hectares in 1910 to almost 5 million in 1919. After the war wheat cultivation continued apace, helped by the development of the combine harvester and government assistance. Over large areas the tough sod, which had exasperated earlier homesteaders, had given way to friable (easily crumbled or pulverized) soils of high erosion potential. Drought, acting on damaged soils, created the “black blizzards.”

Dust storms are still a serious problem in parts of the United States. For example, in the San Joaquin Valley of California a dust storm caused extensive damage and erosion in 1977. More than 22 million metric tons of soil were stripped from grazing land within a twenty-four-hour period. Although the combination of drought and a high wind (as much as 300 kilometers per hour) provided the predisposing natural conditions for the stripping to occur, overgrazing and the general lack of windbreaks in the agricultural land played a more significant role. In addition, broad areas of land had recently been stripped of vegetation, leveled, or plowed up prior to planting. Other quantitatively less important factors included stripping of vegetation for urban expansion, extensive denudation of land in the vicinity of oilfields, and local denudation of land by vehicular recreation. Elsewhere in California dust yield has been considerably increased by mining of dry lake beds and by disturbance of playas (flat-floored bottoms of undrained desert basins that become at times shallow lakes).

A comparable acceleration of dust storm activity occurred in the former Soviet Union. After the “Virgin Lands” program of agricultural expansion during the

1950s, dust storm frequencies in the southern Omsk region increased on average by a factor of 2.5 and locally by factors of 5 to 6.

Desertification is not restricted to heavily populated lands with large agricultural and pastoral populations. As the examples of the U.S. Great Plains and California illustrate, high technology, non-labor-intensive land, and water use can also cause severe degradation.

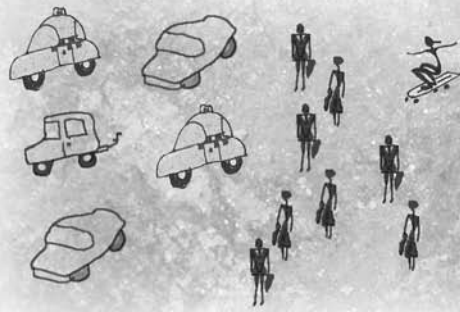
Human-induced desertification is not new. Although people often focus on the Dust Bowl years of the 1930s and the current degradation of the Sahel, desertification has been the subject of great interest in the Mediterranean area since classical times. Likewise, some evidence indicates that more than four thousand years ago Mesopotamia was suffering from chemical degradation of soils and crop yield reductions as a consequence of the adoption and extension of irrigation. Nevertheless, land degradation is not the inevitable consequence of increasing population densities and land-use intensification, and many techniques are available for desert reclamation.

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See also Climate Change; Deforestation; Deserts; Salinization; Water; Water Management

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Deserts

Two types of deserts—tropical and temperate—occupy approximately one third of the planet. While thought to be vast areas of limited resources, the usefulness of arid climates throughout history has depended on the social interaction between the climate and a given society. Analyzing hunter-gatherer and nomadic pastoralist societies has given insight to the influence that desert regions have had on human development.

Deserts cover approximately 30 percent of Earth's surface. A rudimentary classification divides them into two broad types: hot deserts (tropical and subtropical deserts) and temperate or midlatitude deserts. Hot deserts, in which temperatures remain high or very high all year round, are found around the tropics in both hemispheres between latitudes 20° and 30° north and south. In temperate deserts, temperatures differ widely between winter and summer (in winter there is often at least one month in which the mean temperature falls below 5°C, and snow may accumulate for several days). Such deserts are found mainly in the interior of Eurasia and in the Southwest of North America. Besides these two broad classes there are other types that in part coincide with tropical deserts, but whose formation is affected by different factors such as cold coastal currents.

Despite their great diversity, the Earth's arid zones share some common characteristics, principally their excessive dryness, which is the result of high temperatures and low, irregular rainfall. The irregularity of rainfall explains another typical characteristic of dry ecosystems: large fluctuations of biomass above and below very low mean values.

Apart from deep subterranean resources, which in most cases remained unexploited until the twentieth century, deserts provide two important kinds of natural resources: scarce but relatively long-lasting water and food resources, and episodic but abundant resources (such as a sudden deluge of rain after which a pasture may develop). In any event, it must be emphasized that it is the interaction, by way of technology and social relations, between a given society and an arid environment that causes certain aspects of a desert to be perceived as either limitations or as resources.

Hunter-Gatherer Societies

Some hunter-gatherer societies of semiarid zones survived into the nineteenth century in America and into the twentieth century in Australia and southwestern Africa. In general these societies had little ability to modify their environment (although they sometimes did so with fire), and they depended on the spontaneous reproduction of spatially dispersed natural resources. They all displayed an astonishing knowledge of their ecosystems and were able to exploit a large variety of ecological niches, which constituted their productive base. They lived in small groups around temporary sources of water. When the water dried up or the resources situated at a short distance from the pool ran out, they were obliged to move away and find another source of water, which means they were constantly on the move. Lack of water was an almost absolute constraint for them; if food was located too far from the water, they could not exploit it and therefore it did not constitute a resource. Different local groups maintained close kinship relations or alliances



Eugène-Alexis Girardet, *Caravan In The Desert*. Oil on canvas. Mobility and the lack of fixed settlements have always given great military advantages to desert peoples.

with neighboring groups in the same or nearby territories. When there was extreme drought or shortage of food, these social relations allowed them to move into territories occupied by their relatives and allies. It has been suggested that the enormous complexity in the kinship systems of some Australian Aborigines, which created strong ties of obligation among different groups, may have been a way of adapting to the uncertain nature of arid environments.

Nomadic Pastoralists

For thousands of years the typical way of life in the deserts of Eurasia and Africa (though not in those of America or Australia) has been that of nomadic pastoralism, a complex, sophisticated mode of subsistence that has played a major role in the history of the Old World. Most researchers believe that nomadic pastoralism arose at the edges of cultivable zones after the Neolithic advent of agriculture and domestication of animals, in regions that were too dry for the development of settled agriculture and cattle raising.

Nomadism specialized in exploiting an ecological niche that the mixed economies (sedentary agriculture and stockbreeding) could not take advantage of. It seems that almost all nomad societies originated directly or indirectly in the Near East. This region, which suffers acute summer droughts or has clearly arid climates, was inhabited by wild animals (goats, sheep, dromedaries) that, owing to their specific characteristics, fulfilled two conditions: they were easily domesticated and were more or less naturally adapted (or could become so, with the help of man) to the arid or semiarid environmental

conditions. The other early agricultural and cattle-raising centers of the world, in Asia and America, were not populated with these kinds of animals. Some argue that pastoral nomadism arose independently in the Sahara, but that theory continues to be controversial.

A secondary center of nomadic pastoralism may have had its origin in the steppes of southern Russia, where it would have emerged between the third and second millennia BCE in mixed-economy societies of eastern Europe. In the south of Russia, the horse, domesticated around 3000 BCE, gave herders of sheep and goats (which had originated in the Near East) great mobility. The theory is that the domestication of the Bactrian camel (between the third and second millennia BCE), which is similar to the dromedary but better adapted to cold winters, allowed nomads to penetrate the deserts of central Asia. The discovery of Caucasian mummies, some of them from the second millennium BCE, and of texts written in Indo-European languages in the desert of Taklimakan (in the northwestern Chinese region of Xinjiang) may testify to the extent of this movement.

Analyzing the way nomadic societies interact with the environment helps us to understand the great influence that arid and semiarid regions have exercised on the development of Eurasian and African civilizations. Nomadic pastoralism, as a mode of subsistence, is essentially unstable and expansionist. Herds undergo great fluctuations in size and composition in arid environments. Both ethnographic studies and computer techniques demonstrate the potentially explosive growth of a simple flock of sheep or goats.



The tall Saguaro cacti, pictured here outside Tucson, Arizona, bloom in May and June in the temperate deserts of the southwest United States. Photo by Jane M Sawyer (www.morguefile.com).

Nomadic societies exploit this potential in order to accumulate a lot of animals. From the standpoint of basic units of production, it is an intelligent and adaptive response to environmental fluctuations, but on a regional scale it prepares the way for social and ecological disaster. Assertions that nomads, although they do not consciously attempt to modify their environment, create their own steppes and deserts may contain a certain element of truth. The combination of sudden fluctuations and expansive tendencies gives rise to another of the most well-known aspects of nomadic societies: quick and radical shifts along migratory tracks, which sometimes historically appear as invasions or attacks on settled civilizations. It should be remembered that mobility and the lack of fixed settlements has always given great military advantages to desert peoples.

Nomads exploit their resources in small units of production (households or encampments), but, as with hunter-gatherers, these basic units are linked to each other, generally by means of kinship relations.

It is these links that form the basis of larger units when organizing migratory tracks, regulating rights of access to grazing land, and when facing environmental changes. It is membership in these higher-ranking units that in fact grants rights to territory and its resources. As in many hunter-gatherer societies, among nomads kinship relations have great importance because they operate like economic institutions. The manner in which hunter-gatherers and pastoral nomads relate to nature is very different, however. Whilst the hunter-gatherers exploit a great variety of ecological niches in different places and seasons, the nomads always exploit the same basic resource: pasture (either in different environmental zones or in the same one). Whereas the hunter-gatherer's territorial system is based on moving himself towards the resources, that of the nomad involves moving an entire infrastructure of production, with little regard to the regional availability of microresources (such as small mammals and birds, and wild nuts and fruit, all of which are important to hunter-gatherers). For

As a matter of fact, an ordinary desert supports a much greater variety of plants than does either a forest or a prairie. • Ellsworth Huntington (1876–1947)

the hunter-gatherer the great waterless spaces of the desert represent a constraint that prevents him from exploiting resources that are too remote from pools and streams. For the nomad, those spaces only represent a relative limitation, since he can travel long distances transporting water on his animals.

Trading Routes and Oases

From the Atlantic to western China, deserts form a gigantic arid belt that for centuries separated the principal civilizations of the Old World. The nomads, on their constant journeys in search of new pastures, discovered the routes that would allow Chinese silk to travel to Europe across the deserts of central Asia, and that would move gold, ivory, and slaves from tropical Africa to the Mediterranean across the Sahara. They became intermediaries operating between ecologically and culturally different regions, which allowed them to divert surpluses from the agrarian societies of Africa, Europe, and Asia to the arid lands. Thus there emerged, in the oases and at the edges of deserts, fabulously wealthy cities, such as Palmyra, Petra, Samarqand, Timbuktu (Tombouctou), and Almería, in extremely poor environments. The wealth of medieval Islam, which culturally unified the deserts of Asia and Africa, is very much connected with the control of trade between remote civilizations and with the irrigation systems in arid countries.

The oases, like islands in the sea, played a crucial role along the trading routes. But life in these landlocked islands would have been impossible without agriculture, and the main limiting factor for the growth of plants in deserts is water. What characterizes the agriculture of oases is the use of ingenious techniques and complex irrigation systems that permit the extraction and exploitation of water from surface aquifers. The expansion of the Arabs in the Middle Ages helped to spread hydraulic technologies and crops from different regions. The result was the appearance of agricultural ecosystems that were largely freed from the environmental constraints of arid climates, in which man was able to introduce species

from different regions. Before the discovery of America the greatest relocation of vegetable species in history occurred precisely across the deserts and oases of Asia and Africa in the medieval Islamic world.

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See also Camels; Caravan; Desertification; Pastoral Nomadic Societies

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The term *détente* is often used to describe the improvement in relations between political parties or nations. Though most commonly associated with President Nixon's Cold War policy, *détente* has been used to describe the peaceful agreements between many nations throughout history. It is not commonly used in political language during the twenty-first century, but the term's impact on historical relations remains significant.

In the field of international relations and diplomacy, *détente* means relaxation of tensions between two or more hostile powers. *Détente* may lead to further rapprochement, or improved relations, and may culminate in an entente, or understanding, and possibly even an alliance. In French the word *détente* means relaxation or slackening. During the classical period of European diplomacy, usually seen as the nineteenth and early twentieth centuries, *détente* had a very specific and exact technical meaning. However, during the period from 1963 until the late 1980s the term entered into the mainstream of public debate and was used in the context of relations between the Cold War superpowers, the Soviet Union and the United States.

Détente and Classic Diplomacy

Diplomats of the nineteenth century saw *détente* as the first stage in improvement of relations between states. *Détente* usually implied informal or formal contacts between statesmen and diplomats of rival countries with the objective of gaining preliminary

agreement on ways to resolve outstanding grievances. A prime example can be found in the successful *détente* that took place between Britain and France during the years from 1898 to 1904. Historically France and Britain had been bitter rivals and had fought many wars, most notably the French Revolutionary and Napoleonic wars of 1792 to 1815. Imperial rivalry between the two countries continued throughout the nineteenth century. In 1898 France and Britain came close to war during the Fashoda incident, a confrontation over possession of the African territory of Sudan. The crisis was resolved only when the French decided that war with Britain was not in their national interest. Soon after the crisis the French indicated to the British their desire for improved relations. Progress was very slow, and the next step was taken only in May of 1903, when King Edward VII of Britain visited Paris. Soon after, Émile Loubet, the president of France, paid a return visit to London. Behind the scenes diplomats had been negotiating to resolve outstanding disputes between the two countries. The efforts of the diplomats culminated on 8 April 1904 when France and Britain signed the Entente Cordiale, which marked a new beginning in relations between the two historic rivals. Between 1904 and 1914 Britain and France drew steadily closer together, primarily because of the perceived threat from Germany. The British were reluctant to enter into a formal alliance with the French, but military staffs from the two countries held secret talks and discussed war plans. By 1914 Britain and France were effectively allies. But the first step had been taken during the long process of *détente* from 1898 to 1904.



Reporters listen intently as Khrushchev and the then-vice president Nixon converse in Moscow, 1959. Photo by Thomas J. O'Halloran, Library of Congress.

Détente and the Cold War

During the Cold War the term *détente* was used to describe a policy pursued by President Richard Nixon (1913–1994), first elected in 1968, and his chief foreign policy adviser Henry Kissinger (b. 1923) toward the Soviet Union. The *détente* advocated by Nixon and Kissinger had earlier echoes. The 1963 Cuban missile crisis convinced many in both the USSR and the United States that tensions between the two superpowers had to be reduced. In the late 1950s Soviet premier Nikita Khrushchev had promoted a form of *détente* that he referred to as “peaceful coexistence.” Today, however, *détente* is most often associated with Nixon and Kissinger.

Nixon and Kissinger wanted to reduce Cold War tensions by engaging the USSR in a series of agreements on a wide range of issues. They hoped that the Soviets would find a greater incentive in maintaining good relations with the United States and the West than confronting and challenging American interests around the world. The Nixon-Kissinger initiatives

resulted in the signing of a host of agreements during Nixon's time in office. The most important agreements were signed during a summit meeting between Nixon and Soviet president Leonid Brezhnev in Moscow in May 1972. The two leaders signed the Interim Agreement on the Limitation of Strategic Offensive Arms, known popularly as SALT I (SALT is an acronym for Strategic Arms Limitation Talks), which limited the number of intercontinental ballistic missiles that each side could possess. An additional agreement placed restrictions on antiballistic missiles. Nixon and Brezhnev also agreed to begin talks aimed at scaling back nuclear weapons in Europe and endorsed a document outlining general principles of their new relationship. Later in 1972 a major trade deal led to the sale of American wheat to the USSR. Nixon resigned office in 1974 in the wake of the Watergate scandal, but Kissinger continued as secretary of state under the new president, Gerald Ford. In July 1975 the Helsinki Final Act, the keystone of *détente*, was signed by thirty-five countries. Under the terms of the Final Act, the Soviets promised to respect human rights in

If this phrase of the “balance of power” is to be always an argument for war, the pretext for war will never be wanting, and peace can never be secure. • **John Bright (1811–1889)**

exchange for Western recognition of post-1945 territorial boundaries in Eastern Europe.

However détente was already under attack from hard-liners in the United States who refused to trust the Soviets. They believed that the Soviets were only using détente to lull the West into a false sense of security while continuing to seek advantages wherever and whenever they could. Critics of détente in the United States pointed to perceived Soviet gains in Africa and continued Soviet human-rights violations. The Soviets charged that the United States was trying to shut them out of the Middle Eastern peace process. The presidency of Jimmy Carter, who held office from 1976 to 1980, saw the deterioration of détente, despite the conclusion of SALT II in 1979. The Soviet invasion of Afghanistan in 1979, followed the next year by the election of Ronald Reagan as president of the United States, marked the end of détente. Détente was revived as a policy late in the 1980s as Mikhail Gorbachev of the USSR, along with his counterparts in the White House, Ronald Reagan and George H. Bush, sought to end the Cold War. By that point the term *détente* was seldom used publicly by any of these leaders, since it was so strongly associated with Nixon, Kissinger, and the 1970s.

Détente has gone from being a technical term used by diplomats to a term associated with a contentious phase of the Cold War. Although seldom heard in public debate any longer because of its controversial

past, détente in fact forms a crucial component of international diplomacy.

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See also Cold War

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Diasporas

When peoples of a culture are forced to leave their homeland for political, economic, social, or other reasons, some do not fit neatly into their new host countries. Many of these groups are classified as diasporas: communities not fully integrated into a settlement. Diasporas play an increasingly important role in politics, conflict, and trade as millions of people are detached from, yet emotionally linked to, distant homelands.

The labeling of a minority population as a diaspora points to its origins, its displacement, and its ongoing connections to a far-off homeland. It suggests that members of the group remain distinct from the people among whom they live. Popular and scholarly use of the term *diaspora* has changed substantially over the centuries. A recent scholarly debate over just how widely the term can be applied has not yet reached a satisfactory conclusion.

Early Use of the Term

Over two millennia ago, the Greek historian Thucydides used *diaspora* to describe those driven from their homes during the Peloponnesian War (431–404 BCE). But for other Greek speakers, the term had a much broader meaning; it referred to the dispersion of Greeks around the Mediterranean and into western Asia between 800 and 600 BCE. These were not refugees but merchants and colonizers who formed distinctive Greek settlements amidst peoples of other cultures. The word *diaspora* suggested that like seeds, migrants could travel great distances, yet once they took root, they would grow into familiar forms: Greeks

scattered outside Greece nonetheless remained culturally Greek and proud of their origins.

Perhaps because the term *diaspora* appeared in Greek translations of the Bible describing the exile of Jews, the meaning of the term has subsequently narrowed. Hebrew speakers initially preferred the term *galut* (exile) to describe Jews forced into exile after the destruction of the Temple of Jerusalem in 586 BCE. But over the centuries, the term *diaspora* was applied so often, so consistently, and in so many European languages to Jews who had scattered while escaping from persecution that the earlier, broader Greek meaning of the term seemed almost completely forgotten.

Theorists have used other terms for minority groups formed by forced migrations, calling them involuntary migrants, exiles, or refugees. They have suggested that the social, psychological, and cultural dynamics of ethnic group formation among forced migrants differ significantly from the dynamics among those who leave home voluntarily. In particular, forced migrants are believed to nurture especially strong connections to their homelands and to hope for their eventual return there. Such characteristics were central to the concept of the Jewish Diaspora.

In the past two centuries, scholars have recognized a limited number of other forced migrations—notably enslaved Africans in the sixteenth, seventeenth, and eighteenth centuries; Armenians threatened with genocide in Turkey after World War I; and displaced Palestinians—which have also been called diasporas. Occasionally, too, reference has been made to an Irish diaspora, the result of poor Irish farmers being forced from home by the devastating potato blight and the threat of mass starvation in the 1840s

*So many are the Genoese, scattered worldwide, that they build other
Genoas wherever they reside.* • **M. Bozzi (c. 1320)**

and 1850s. Nevertheless, for the most part it was the Jewish experience of exile, homelessness or statelessness, and attachment to a lost home that defined diaspora.

Jewish Diaspora

The destruction of the Temple of Jerusalem and the subsequent Babylonian exile became central to Jewish life, culture, and identity. Memories of this experience were passed from generation to generation, obscuring the fact that a significant contingent of early Jewish exiles restored the Temple in 515 BCE. At least since classical times, more Jews lived in scattered communities in Egypt and Anatolia (peninsular Turkey) than in the Jewish homeland around Jerusalem. The crushing of a Jewish revolt against the Romans in 70 CE, the second destruction of the Temple and a second

exile, and, somewhat later, Christian assertions about Jews' supposed role in the killing of Christ helped to solidify images of Jews as wanderers, persecuted wherever they traveled and never permanently settled anywhere.

In later periods, however, there is little evidence that the large populations of Jews living in the Catholic or Orthodox Mediterranean or in Muslim North Africa or western Asia were substantially more mobile than majority populations: most Jews settled permanently in cities. Their reputation for tenacious commitments and for emotional attachment to their ancestral homeland was in part a product of social and economic discrimination that prevented them from ever belonging fully to host societies, whether those societies were Catholic, Orthodox Christian, or Muslim.

Persecution sparked important Jewish migrations, especially between 1000 and 1500. In Catholic



Jewish children with a teacher in Samarqand (modern-day Uzbekistan), between 1900 and 1915. Forced migrants like those of the Jewish Diaspora are believed to nurture strong connections to their homelands and hope eventually to return. Photo by Sergei Mikhailovich Prokudin-Gorskii. Library of Congress.



Armenian refugees with their household possessions set up camp on the Black Sea beach, Novorossiisk, Russia (c. 1920). Photo by G.P. Floyd. Library of Congress.

Europe the Crusades heightened anti-Semitism; eventually, anti-Semitism led to the expulsion of Jews from Spain in 1492. Within the Muslim world, where Jews lived as constrained minorities in self-governing enclaves, trade may have motivated more Jewish mobility; certainly trade was one motivation for those Jewish merchants who first ventured into the Atlantic world and the Americas.

By the early nineteenth century, Jewish migrants resembled other central and western Europeans in traveling to the Americas in search of work, commercial advantage, or educational opportunity. Even later in the century, Jewish migrants to the United States were almost as likely to leave those countries that had begun to open opportunities for full citizenship to them as they were to leave places such as the Russian Empire, where the threat of violent peasant attacks (or pogroms) and levels of discriminatory practices in military service, schooling, and landownership remained very high.

Over the centuries, Jewish communities reached long-term and relatively peaceful accommodations with the Catholic, Orthodox, Protestant, and Muslim majority populations in the lands where they settled. When opportunities to return to their homeland opened with the creation of Israel in 1947, most Jewish North Americans did not choose to relocate. And thus, the vast majority of Jews still live in the

Diaspora. Nevertheless, memories of persecution and the possible necessity of renewed flight have been elements of Jewish life for millennia, elements that were reinforced by the horrific genocide—now termed the Holocaust—that occurred in Europe during World War II.

Armenian and African Diasporas

Like those of the Jewish faith, Armenians trace their exile to an early date. Armenians regard their homeland as Mount Ararat, a mountain in the east of present-day Turkey, near the border with Iran. There, according to the Bible, Noah's Ark landed and repopulated the Earth with people and animals. Armenians, whose Christian beliefs differed from those of their Orthodox rulers and neighbors, were first deported in large numbers in 578 CE to Macedonia, Cyprus, and other locations in the eastern Mediterranean, and subsequently most lived as minorities under the rule of Muslims. Armenians resisted conversion and, as traders, traveled far afield.

A revolutionary movement in pursuit of an independent Armenian state led to the murder of thousands of Armenians in the Ottoman Empire and the deportation of some 1.75 million Armenians in 1915. Perhaps half of the Armenian population either starved or were killed during the course of the



deportation. Of those who survived, many sought refuge in the Americas and Europe. Today about 2 million Armenians live in Europe, western Asia, and the Americas; roughly another 2 million live in the Central Asian republics of the former Soviet Union, and approximately 3 million live in an independent Armenian republic in their regional homeland.

If many Armenians stayed relatively close to their ancestral home, even when dispersed forcibly, an African diaspora formed far from the African continent—but primarily in the Americas. At least since the time of the Roman Empire, slave trading had scattered Africans across the Sahara and the Mediterranean and into the Muslim world of western Asia. After 1500, the numbers of slaves sent across the Atlantic to serve as laborers on plantations came to outnumber those sent elsewhere along older Old World slave routes. The culture and identities of Africans in the New World was a product of the complex intermingling of the customs of many African ethnic groups and of animist African, Muslim, and Christian religious beliefs. Separate African languages disappeared but contributed to the creation of hybrid pidgin dialects that blended African, English, Spanish, and Portuguese elements.

As African slaves in the Americas gradually acquired their freedom between 1830 and 1889, small numbers did return to Africa, notably to Liberia. But the much larger group remained in the New World, where they identified with biblical stories of Jewish captivity, exile, and longing for home. Many regarded Africa—and especially the independent nation of Ethiopia (not colonized by Europeans in the nineteenth century)—as the symbol of a lost homeland.

In the early twentieth century, the development of Pan-African movements among New World residents of African descent focused on ending European colonialism in Africa and racial oppression in the Americas. These movements linked activists in the Caribbean, the United States, and Africa. Even after the collapse of Europe's empires in Africa after World War II and the abandonment of legal and institutionalized forms of racial discrimination in the United States and South Africa, experiences of

racial prejudice continue to nurture an attachment to Africa among persons of African descent. Few have any intention of returning to Africa, however, even though the formation of independent African nations after 1950 made that option more plausible than ever before.

Recent Changes in Meaning

In a controversial development, scholars in recent years have begun to consider the possibility that other migrations, too, can create diasporas. In part, this change reflects scholarly appreciation of the difficulties of distinguishing definitively between forced and free migrations even in the African, Armenian, Jewish, Palestinian, or Irish diasporas. Scholars have acknowledged that elements of coercion and choice figure in the lives of most mobile persons. The willingness to use *diaspora* for analysis of a broader range of migrations also reflects the recognition that attachment to a distant homeland is not limited to exiles and refugees. The fact that many in the Jewish and African diasporas have shown little interest in returning to their ancestral homelands also suggests how problematic it is to distinguish vigorously among descendants of forced and voluntary migrants.

In the mid-1990s, the sociologist Robin Cohen sought to summarize changing use of the term by suggesting a typology of diasporas. Cohen distinguished between victim diasporas—such as the Jewish and Armenian diasporas—and those formed as people voluntarily left their homeland to look for work (labor diasporas), establish colonies (imperial diasporas), or engage in commerce (trade diasporas). Cohen encouraged scholars to debate the characteristics shared by all diasporas and to identify those characteristics that differentiated diasporas from other ethnic groups formed through long-distance migrations.

Trade Diasporas

At least since 2000 BCE, the desire for trade has encouraged merchants to form communities abroad without abandoning their loyalties or connections to their homelands and without abandoning their native



Italian immigrants living on Mulberry Street in New York City's Lower East Side jostled for space and economic opportunity with other recent arrivals, including Jews, Russians, and Austro-Hungarians (1900). Detroit Publishing Company, Library of Congress.

cultures. The ancient Minoans scattered throughout the Aegean, and the Phoenicians spread throughout the eastern Mediterranean. Greek merchants established colonies even more widely, especially in Sicily and western Asia.

In the years between 500 and 1500, Arab, Jewish, Armenian, and Genoese and Venetian merchants formed self-governing commercial enclaves in western Asia, around the Black Sea, in caravan towns through Central Asia, and along the coasts of Africa.

Similarly, Chinese merchants who lived in large numbers in many parts of Southeast Asia and the Philippines showed few signs of abandoning their Chinese culture or identity, and generally they intended to return home eventually. Most considered themselves sojourners in foreign lands, even if their communities persisted for centuries. After 1500, as European empire builders arrived in Asia, they often encouraged the expansion of Chinese trading communities because Chinese merchants served as effective cultural and economic mediators between the impossibly foreign-seeming Europeans and local populations and institutions.

In the modern world, trade diasporas continued to form. Lebanese traders from Syria scattered around

the Mediterranean and to North and South America during the nineteenth century. Many worked as peddlers before opening shops; in much of Latin America, Lebanese merchants played an important role in the creation of modern industries as well. Rates of return to Lebanon have been high, although as many as two-fifths of all the people who consider themselves Lebanese today live outside Lebanon. Although rarely analyzed as diasporas, the far-flung communities that U.S. multinational corporations create are self-consciously American and English-speaking. They often maintain considerable social and cultural distance from host societies and are viewed as unwelcome expressions of U.S. imperial power by local populations.

Imperial Diasporas

As in the case of the Greek Mediterranean two millennia earlier, mobile merchants often functioned as the vanguard of empire building in the European empires formed after 1500. Dutch, Spanish, Portuguese, German, French, and British colonists created settlements around the world that reproduced their own cultures rather than adapting the customs and languages of the natives among whom they lived.

Diasporas formed through empire building often had significant state support, with the government organizing, directing, and financing migrations of their citizens to strengthen some of their colonies demographically. From the seventeenth century onward, actions taken by the British state—land policies that forced poor Scots or Irish from their fields and crofts, the export of prisoners and children, sponsored migration of female spinsters—encouraged migration to its colonies, especially in Canada and Australia. Its military and government bureaucracies also organized the migration of soldiers, civil servants, and teachers to work in Africa, India, and other parts of Asia. While many so employed expected to return home again, and cultivated a pride in their Britishness that held them aloof from colonized populations, imperial migrants did sometimes also acquire an attachment to their new homelands and settle more permanently. This was true for colonialists from other European countries as well. In both French Algeria and British Rhodesia, settlers who had come as empire builders stayed on and violently opposed independence under native African rule after World War II, a fact that suggests the complex relationship between imperial culture, home, and host societies in imperial diasporas.

Proletarian or Labor Diasporas

The emancipation of slaves and the industrialization of cities in Europe and the Americas in the nineteenth century provoked vast new migrations that continued into the twentieth century. As many as 65 million Europeans migrated to the Americas, and as many as 40 million Chinese and Indians left their home countries between 1815 and 1930. Most of the Indian migrants and a substantial minority of the European and Chinese migrants traveled under some form of indenture, labor contract, or debt peonage. The so-called proletarian mass migrations are nevertheless considered voluntary. Workers followed the money in a global labor market that as often offered temporary and seasonal employment as opportunities for permanent settlement, especially by the latter years of the twentieth century.

Chinese, Indian, and southern and eastern European migrants were especially likely to consider themselves sojourners who intended to return home again. Perhaps as many as 90 percent of Chinese and Indian laborers returned from New World, Asian, or Africa plantations or mines. Among Italian laborers in agriculture and industry, rates of return were typically over 50 percent. Male laborers in all these groups left home, returned, and then departed again, often several times over the course of their lives. Recent research suggests that the constant circulation of mobile men, along with the often violently hostile reactions of native workers and host societies, reinforced sojourners' attachment to their homelands. Between 1880 and 1930, laws passed in Canada, the United States, and Australia to exclude or limit the migration of all contract laborers, to prevent the settlement of Chinese and Indians, and to limit the number of workers entering from Italy, Greece, and the Balkans had the same effect. The result was heightened ethnic and racial consciousness among even the descendants of workers who settled permanently abroad. Many have maintained distinctive ethnic identities and a continued awareness of their foreign origins over several generations. Some scholars now refer to these groups, too, as diasporas, although that labeling is controversial.

Migration, Ethnicity, and Diaspora

Few scholars would argue that every migration generates a diaspora. Many, however, accept a wider and more general application of the term than was common a half-century ago, when only forced migrations of victims were considered to create diasporas.

Scholars' extension of *diaspora* to cover merchants, laborers, and even empire builders may be the result of general scholarly unease with theories of assimilation and of ethnic group formation among the mobile. Since the 1930s, discussions of assimilation and the creation of ethnic groups have taken place mainly within the context of the history of immigration into countries such as the United States. In the past, it was

widely assumed that all migrants were immigrants who abandoned ties to their homelands, along with their ethnic identities, as they found full incorporation into host societies.

Discussions of multiculturalism in popular discourse, like scholarly broadening of the term *diaspora*, may have helped to point out positive elements of cultural pluralism and the persistence of ethnic identities among the descendants of migrants. Earlier assumptions about assimilation and its relation to human identity now strike many as too simple. Not only are individual identities understood to be more complex than was the case a century ago, but cultural diversity is now viewed more positively. In addition, recent theorists of transnationalism have suggested that the ease of travel and of communication in the contemporary world will likely facilitate the formation of diasporas among the 150 million migrants in today's world.

Nevertheless, recent studies of diasporas do suggest the usefulness of insisting on a number of shared characteristics that differentiate diasporas from ethnic groups generally. Most studies of diasporas, for example, focus on migrations that scatter in multiple directions, creating far-flung and rather extensive transnational social networks. As a result we find few references to a Mexican diaspora. However important and undeniable their ties to Mexico and the strength of their many transnational social and cultural activities, the vast majority of Mexicans over the past two centuries have migrated to only one country—the United States.

While ethnic groups may be temporary social formations among the migratory, diasporas maintain memories and sustain powerful myths about their homelands, which they typically idealize. These memories in turn generate dreams of a return to that homeland. Diasporas are thus characterized by strong group consciousness that is sustained over many years, generations, or even centuries. Diasporas typically have somewhat difficult relationships with the societies in which they make their homes, and their members typically maintain at least a minimal sense

of solidarity with their co-ethnics or coreligionists in other parts of the world. Diasporic consciousness also seems to be positively associated with cultural creativity; the distinctive music, art, or literature of a diaspora may be regarded positively by majority populations and at the same time may reinforce the sense of distinctiveness of those creating it.

In short, diasporas seem to be characterized not so much by the experience of forced migration as by a will to survive and to resist full assimilation into host societies, even when that option is open. A strong sense of shared history—often reinforced by experiences such as exile, persecution, or local hostility—can be reproduced over time within families, ethnic institutions, and through cultural production. This sense of shared history allows people in North America to feel a sense of solidarity with people of similar origins who may live in South America, Australia, Europe or Asia. Ultimately, then, diasporas are products of history. It is the passage of time that determines which mobile populations and which ethnic groups will become and remain diasporas.

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See also European Expansion; Migration, Asian; Migration—Overview; Pacific, Settlement of

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Dictionaries and Encyclopedias

Dictionaries and encyclopedias are outgrowths of the human urge to decipher, systematize, explain, and learn. From cuneiform tablets to the World Wide Web, dictionaries have defined, standardized, and influenced the use of human language, while encyclopedias have mirrored and shaped knowledge.

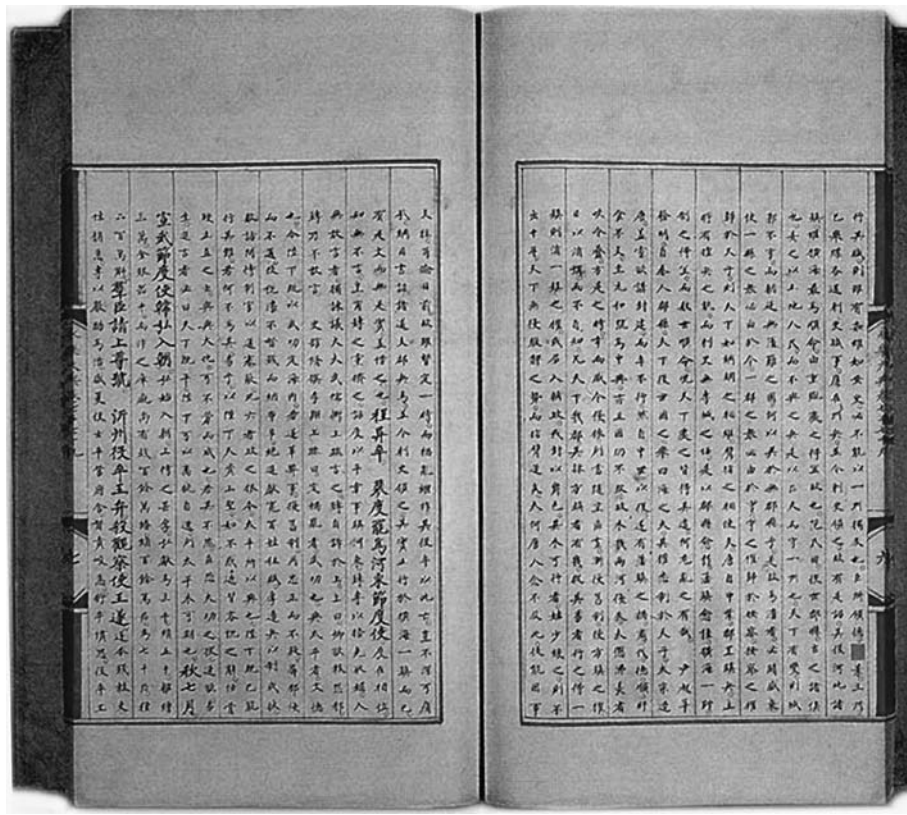
During their long history, dictionaries have reflected the history and origins of language, in addition to offering definitions, etymologies, pronunciations, and spelling standards. But they have also been criticized for contributing to ethnocentrism and linguistic conformity. For their part encyclopedias have provided classification concepts to organize world knowledge, while simultaneously offering a snapshot in time of that knowledge. They have fostered learning by educating as well as edifying the reader. But encyclopedias have also been grounded in contemporary biases and superstitions.

Rudimentary forms of dictionaries and encyclopedias have been used since ancient times. Compilations of bilingual word lists began as early as 3000 BCE in Sumerian culture and were later adopted by their conquering neighbors, the Akkadians, who then spread them to peoples from other parts of the Middle East. The Western tradition can be traced to the Greek *glossai*, which were used to interpret the classic literary works of Homer and the ancient law (Green 1996). The concept of the *enkyklios paideia*, the “general” or “rounded” education, goes back to Plato and Aristotle. In fact the first recognizable “encyclopedia” work is considered to be a collection of Plato’s writings by his nephew Speusippos that were used for instruction at Plato’s Academy.

Dictionaries

In addition to the Greek *glossai*, there is an early tradition of lexicography in Sanskrit, as well as in Chinese, Arabic, and Japanese. As early as 300 BCE, lexicons were written to aid in understanding the Vedas, or sacred Hindu texts. Related to these is the later classic of Sanskrit lexicography, the *Amarakośha* by Amarasimha (650 CE). The Chinese tradition stems from early glosses like the *Erh-ya* in second century BCE. The *Shuo wen jie zi* compiled by Hsü Shen around 120 CE was the first etymological Chinese dictionary. While Arabic word lists and vocabularies predated it, the first Arabic dictionary is considered the *Kitab al’ Ain* by Al-Khalīl ibn Ahmad written in the late 700s CE. But it is the *Šihāh* by al-Jawhārī (d. 1003) that set the standard for the classic Arabic dictionary and the *Tāj al-‘arūs* by al-Murtadā al-Zabīdī (d.1791) that incorporated numerous previous works and represents the culmination of a thousand-year tradition. There is a long history of Japanese lexicography stretching from the Heian period (794–1185) to the end of the Muromachi period (1333–1573). The beginning of the modern Japanese dictionary, however, is traced to the *Rakuyōshū*, published by the Jesuits in 1598 (Bailey 1960).

Beside the Jesuit influence on Japanese dictionaries, there is an undeniable legacy of Western influence on non-Western dictionary making. Dictionaries of many African, Asian, and Pacific languages are relatively recent and bear the imprint of Western contact. Many of the first to study these languages and write dictionaries were missionaries and social workers. While making a significant contribution in being the first to record these languages,



Two pages of the *Yongle dadian*, the 11,095-volume encyclopedia commissioned by China's Yongle Emperor in 1403 (and completed by scores of scholars by 1408).

often their work was didactic and moralizing. In addition early missionaries like Alexandre de Rhodes compiled dictionaries using Romanized scripts, further portraying the native language through Western eyes. The same holds true for African languages with the later, more formal efforts of organizations like the International Institute of African Languages and Cultures, founded in London (1926), and the Instituto de Estudios Africanos, founded in Madrid (1939). And today, modern Arabic lexicographers, inspired by E. W. Lane's *Madd al-Qāmūs*, *Arabic-English Lexicon* (1863–1893), follow Western methods and principles.

Greeks and Romans

After the first century, Greeks and Romans continued building a tradition of lexicography. The famous Greek philologist Aristophanes of Byzantium assembled the first Greek dictionary entitled *Lexexis* (200 BCE) based on previous *glossai* and word lists. The prolific Marcus Terentius Varro contributed the *De Lingua Latina* (43 BCE) that was more a study of grammar, but with a number of etymologies. Other

writers like Verrius Flaccus (c. 10 BCE) and his *De Significatu Verborum*, Julius Pollux (180–238 CE) and his *Onomasticon*, and Photius (860–935 CE) and his *Lexicon*, also made their mark on early lexicography. Their work, and similar efforts, culminated in the great tenth-century lexicon the *Suda* or *Suidas*. Actually a combination dictionary and encyclopedia, the *Suda* contained about thirty thousand entries on language, literature, and history. More importantly, it integrated all of this material alphabetically. Up to this point, most works had not used alphabetical order (Collison 1964). Another later landmark was Ambrogio Calepino's *Dictionarium ex optimis quibusquam* . . . (1502), which came out in numerous editions into the early 1700s. Initially the *Dictionarium* was in Latin, but later expanded to a number of other languages including Hebrew, German, French, Greek, Italian, and English (Green 1996).

English Dictionaries

The first purely English dictionary was Robert Cawdrey's *Table Alphabeticall* [sic] in 1604. Consisting of only 2,560 entries, mostly plagiarized from

When I feel inclined to read poetry, I take down my dictionary. The poetry of words is quite as beautiful as the poetry of sentences. The author may arrange the gems effectively, but their shape and lustre have been given by the attrition of ages. • **Oliver Wendell Holmes Sr. (1809–1894)**

other sources, Cawdrey concentrated on so-called hard words. This “hard word” tradition held sway through the seventeenth century. Attempting to record all English words was left to the remarkable *Oxford English Dictionary* nearly three centuries later.

Dozens of other dictionaries were published after Cawdrey, but it was Samuel Johnson who authored the first great English dictionary. In a sense Johnson’s work was in response to the great continental dictionaries like those of Italy, the *Accademia della Crusca’s Vocabolario* (1612), and France, the *Dictionnaire de l’Académie Française* (1694). Johnson’s *Dictionary of the English Language* (1755) answered the need for an authoritative English language dictionary and “the growing desire to create . . . a national language” (Green 1996, 226). But instead of being a national project undertaken by an academy of scholars, the work was left to Johnson and six assistants. In all Johnson defined some 40,000 headwords, using approximately 118,000 quotations to support and differentiate meanings.

National impulses also inspired the work of Noah Webster. He realized that American English was distinct from the language spoken in England, and his *American Dictionary of the English Language* (1828) reflected this fact. His dictionary also had a lasting impact on the spelling of American English. But Webster’s work may have faded from view had not George and Charles Merriam purchased the rights from his family. The Merriams improved the quality of the dictionary and published revisions and abridgements on a regular schedule. The name Merriam-Webster is still one of the most respected in dictionary publishing.

The greatest of all English dictionaries is undoubtedly the fabled *Oxford English Dictionary*. The *OED*, as it is often referred to, was conceived as a recorder of actual historic usage, not as a standard, dictating proper English (Landau 1989). Under the editorship of the brilliant, if eccentric, James Murray, the first volume of the *OED* was published in 1884, with the final volume appearing in 1928. Since that time there

have been several supplements with a twenty-volume, second edition published in 1989. It is also available online and on CD-ROM, which allows quarterly updating. With its precise definitions, illustrative quotations, variant spellings, and comprehensive etymologies, the *OED* is an indispensable tool for the study of English.

Encyclopedias

The Romans laid the foundation of the written encyclopedia. The *Praecepta ad Filium* (184 BCE) by the famed Roman orator Marcus Terentius Cato (Cato the Elder) is considered the first extant written encyclopedia. Taking the form of letters to his son, the *Praecepta* is known to have included sections on “agriculture, medicine, rhetoric and possibly law and warfare” (Collison 1964, 23). Other similar works exist, but two particularly stand out. Marcus Terentius Varro (116–27 BCE) was an extraordinary scholar credited with seventy-four separate works in 620 volumes. His *Disciplinarum Libri Novem* devoted individual volumes to each of the seven liberal arts, as well as medicine and architecture, and foreshadowed the trivium (“the three roads”: grammar, rhetoric, and dialectic) and quadrivium (“the four roads”: mathematics, geometry, astronomy, and music) of later medieval education. Pliny the Elder’s *Historia Naturalis* (77 CE) consisted of thirty-seven books covering topics as diverse as metallurgy and the fine arts. In addition he was one of the first to cite his sources, and his work influenced encyclopedia making up to the Renaissance.

Eastern Traditions

The encyclopedia tradition is as rich in China as in the West. Although early Chinese encyclopedias also use classified arrangements, they are usually collections of significant prior works with dictionary elements. From the beginning these works were motivated by the need to educate civil administrators. The first Chinese encyclopedia appeared around 220 CE. It



Samuel Johnson, the author of the first great English dictionary, as depicted in Boswell's *The Life of Samuel Johnson*.

was entitled *Huang Ian* and was compiled by order of the emperor. Other early Chinese encyclopedias included the *Ch'u Hsüeh chi* (700 CE) and the more influential *T'ung tien* by Tu Yu (801 CE). The *T'ung tien* was the first of three works that formed the *San Tung*, which in turn was the foundation of a larger group of nine works published as the *Chiu Tung* in 1747 (Collison 1964). These encyclopedias collectively covered the prior twelve centuries and show

the tendency of the Chinese encyclopedias to grow and be augmented, rather than be replaced. Another example is the significant work *Yü-Hai*. Originally composed in 1267, it had evolved into a 240-volume collection by 1738. Throughout the 1600s there was a series of encyclopedias published under the auspices of the emperor with the highly illustrated *San ts'ai t'hu* being published in 1607–1609. The *Hsiao chih lu*, finished by Lu Feng-tso in 1804, was unique for its coverage of practical and technical matters. A number of other encyclopedias appeared later in the century with particular strengths in history, biography, and civil service. However, the first truly modern Chinese encyclopedia was the *Tz'u-yüan* published in 1915 and supplemented in 1931. In progress since 1982, the *Chung-kuo ta pai ko chuan shu*, well illustrated with lengthy articles, carries on the tradition.

Arabic encyclopedias also served the purpose of instructing civil servants, but in addition, they sought to inform the typical educated person. The first recognized work, the *Kitäl 'Uyün al Akhbar* by Ibn Qutayba (828–889 CE) was written with this audience in mind. Another significant Arabic contribution was the *Mafätih al-'Ulum* (975–997 CE) by the Persian scholar and statesman, al-Khwarizmi. Besides Arab influences, his work reflected an awareness of the more important Greek writings. Around the same time a religious and political party called the Ikhwän as-Safä published the *Rasä'il Ikhwän as-Safä* consisting of fifty-two pamphlets by five authors. (An edition of this work was published as late as 1889.) Later encyclopedias were published in Egypt, including the well-known *Nihäyat al-'arab fi funün al-adab* by an-Nuwairi (1272–1332), and the important and well-organized *Šubh al-a'sha* (1412), which was written for civil servants. The tradition of Arabic encyclopedias has continued into modern times with the works of Butrus al-Bustani (1819–1883) and his family. Their *Da'irat al-Maarif*, originally published in Beirut, has gone through three editions, the first published from 1875 to 1900 and the last finished in 1956. Today there are initiatives underway to publish major encyclopedias from the Islamic standpoint. A special



scholarly institute has been established in Iran and is at work compiling a multivolume encyclopedia to reflect the Shiite perspective.

Western Encyclopedias and the Church

The Western encyclopedia tradition felt Christianity's influence by the sixth century. Cassiodorus's two volume *Institutiones divinarum et humanarum lectionum* (560 CE) begins with chapters on scripture and commentary, as well as chapters on the historians and the Fathers of the Church. But Cassiodorus was also responsible for preserving the ancient Latin authors, pointing out "how to employ classical literature to support Christian education" (Katz 1998, 26). In his twenty-volume *Etymologiae*, Isidore of Seville (570–636 CE) shifts from the more narrow theological focus of Cassiodorus and emphasizes "the liberal arts and secular learning as the true basis of Christianity" (Collison 1964, 33). He tries to cover all that was then known of the world, even including an etymological dictionary.

The seeds of the medieval scholastic encyclopedia can be found in Isidore's and Cassiodorus's work. Scholasticism, which tried to reconcile ancient classical philosophy with medieval Church theology, was firmly rooted in later works. Hugh of St. Victor's *Didascalicon* (1120) is a noteworthy example. While adhering to the hierarchy of text placing scripture and Church-related subjects first, Hugh affirmed the seven liberal arts as the basis for classifying knowledge and insisted on the primacy of Latin, not the vernacular in his work. *Speculum majus* (1244–1260) is perhaps the most important of the medieval encyclopedias. Authored by Vincent of Beauvais, it consisted of nearly ten thousand chapters in eighty books and used some four hundred sources. The *Speculum majus* was still being referenced centuries after it first appeared. Unfortunately it also played a role in promoting anti-Semitism by containing a rewritten version of one of the best-known medieval anti-Jewish tracts, the *Dialogi contra Judaeos*, by Petrus Alfonsi. Around this time the *Hortus deliciarum* (1195 CE),

the first encyclopedia compiled by a woman, Herrad of Landsberg, appeared, as did the first encyclopedia in the vernacular, *Le Livre dou Tresor* (1265 CE), by Bruno Latini.

Renaissance to the Modern Era

The greatest contribution of the Renaissance was an encyclopedia that was barely begun and never finished; however, Francis Bacon's *Instauratio magna* (1620), with its proposed outline and classification scheme, was revolutionary and its influence lasting. Grounded in scientific method, Bacon covered every known topic of the day and his outline served as checklist for future encyclopedias, including that of Diderot and the great *L'Encyclopedie*. The seventeenth century also saw the popularizing of the alphabetical arrangement with the publication of Louis Moreri's *Le grand dictionnaire historique* (1674). This made the encyclopedia much easier to consult for specific facts. John Harris was the first to solicit experts to write articles for his *Lexicon Technicum* (1704). He also added high-quality illustrations and plates to his work, as well as selected bibliographies. Incorporating many of Harris's methods, Ephraim Chambers made the encyclopedia accessible to a mass audience by stressing readable articles in his *Cyclopaedia* (1728). He also broadened coverage of the arts and employed a through system of cross-references.

L'Encyclopedie and the Britannica

Denis Diderot and Jean le Rond, later known as d'Alembert, changed what started as a translation of the Chambers *Cyclopaedia* into what would become the most famous and storied encyclopedias in history. Under their guidance, particularly Diderot's, *L'Encyclopedie* (1765) became a revolutionary philosophical undertaking, featuring the writing of luminaries like Voltaire, Turgot, and Rousseau. It rejected much of the past, and it promulgated the scientific theories and advanced ideas of the Enlightenment. Reason, not the Church, was the source of

authority, and traditional learning was criticized for its prejudice and superstition. *L'Encyclopedie* was a powerful tool of protest and was subject to censorship and suppression. But because it also reflected the interests of the emerging middle class devoted to commerce and capitalism, it became widely popular and influential.

Two other names dominate encyclopedia publishing following the *L'Encyclopedie*: David Frederick Brockhaus and Pierre Larousse. Their works, the *Kversations-Lexikon* (1811) and the *Grand Dictionnaire Universel* (1876), featured short, accessible articles, alphabetically arranged, which highlighted their use as reference works to be consulted rather than read. Publishing houses bearing their names continue to publish highly respected encyclopedias today. Another great Continental encyclopedia that has to be mentioned is the *Enciclopedia italiana di scienze, lettere ed arti* (1929–1939). One of the finest national encyclopedias ever published, it is nonetheless international in scope (Collison 1964).

The *Encyclopedia Britannica* ranks in importance with Diderot's *L'Encyclopedie*. The first edition consisted of three volumes of both fact and fiction, but under the editorship of John Tytler that changed. His second edition (1784) was a ten-volume set with 340 plates and an emphasis on historical articles and biographies. It was revised and changed incrementally until the landmark ninth edition (1888), which along with the classic eleventh edition (1911) is thought the standard in balanced, accessible scholarship. These two editions created the *Britannica*'s reputation. But, the success of the *Britannica* was due to as much to marketing and an increasingly affluent middle class, as to the quality of the set, especially in the United States. By the fourteenth edition, released in 1929, the *Britannica* was being published in America and reflected American interests more than British. In the early twenty-first century, while still available in print, the *Britannica* is perhaps more commonly used in one of its electronic formats. There is a free version of the encyclopedia that gives brief excerpts from the full version, and a premium subscription with access full text and research tools.

Present and Future Trends

As knowledge grows exponentially, dictionaries and encyclopedias continue to evolve and change; they are no longer solely geared to scholars. Mass-market dictionaries and encyclopedias, appealing to a far wider audience, are available in supermarkets as well as bookstores. This is particularly true for dictionaries, and it heightens the tension between their proscriptive and descriptive roles. Dictionaries are asked to be authoritative yet neutral and objective, and at the same time describe living language as spoken by a broad population. This dichotomy can be expected to grow as dictionaries appeal to an even wider audience via computers and the World Wide Web. Some online dictionaries, like the free Dictionary.com, however, are gaining the trust of users by offering thorough and dependable definitions as well as keeping up with current words and terms.

Computer technology also provides timeliness undreamed of by previous dictionary makers. Online dictionaries can be updated immediately and continuously. In addition, computers revolutionize the way people search and retrieve needed information. As the editors of the *OED Online* note, "Complex investigations into word origins or quotations that would have been impossible to conduct using the print edition now take only a few seconds." And computers, combined with the World Wide Web, enable collaborative scholarly projects like the Digital Dictionaries of South Asia effort led by the University of Chicago, and popular collections of online dictionaries like yourdictionary.com.

Today the traditional role of an encyclopedia in classifying the world's knowledge is marginal. Indexes, cross-references, and hyperlinks supplant schema and classification. The encyclopedia is no longer read and contemplated; it is consulted for objective facts and background information. And the general encyclopedia is not the dominant form. There are hundreds of subject encyclopedias, including those like the *Grove Dictionary of Art* and Wiley-Blackwell's *Encyclopedia of Life Sciences*, that are larger than many general encyclopedias.

As with dictionaries, computers are accelerating the encyclopedia's transformation. Following the growing migration of information from print to electronic, dictionary and encyclopedia publishers are increasingly providing digital access to their content. Major publications like the *Oxford English Dictionary* and the *Grove Dictionary of Music* have moved online, and electronic collections of print reference works are being gathered in searchable databases like the Gale Virtual Reference Library, Oxford Reference Online, Credo, and Sage Reference Online, among others. Most of these publishers still offer print editions of their encyclopedias and dictionaries, but electronic access is a standard expectation among users. It is hard to ignore the advantages of a searchable database in which locating information is far easier and more flexible, and the results are immediate and easily accessible.

The most influential, as well as controversial development in the recent evolution of encyclopedias is the creation of Wikipedia. The Wikipedia (2010) website defines itself as "a multilingual, web-based, free-content encyclopedia project based on an openly-editable model [that] is written collaboratively by largely anonymous Internet volunteers who write without pay." The people at Wikipedia might have added that these volunteers "have no qualifying credentials save an Internet connection" (Chandler and Gregory 2010, 247). This lack of credentials on the part of the contributors is used to cast dispersions on the validity and reliability of Wikipedia. There are also complaints that "because of its open nature, it has also been subjected to vandalism," and that the "volunteers who write articles sometimes take excessive ownership of what they've contributed, deleting the changes, including corrections, that others make" (Goldsborough 2009, 13). While this is all true, there is no arguing with Wikipedia's success. As of April 2010, there were nearly 3.4 million articles in the English-language version alone, and according to Alexa (n.d.), a website specializing in Internet traffic metrics, Wikipedia ranks sixth among all websites visited on the Web. There have also been studies supporting Wikipedia's accuracy and reliability, the most

famous being an article appearing in the December 2005 issue of the prestigious journal *Nature*, which reported that Wikipedia "contains only slightly more inaccuracies in science-related topics than does *Encyclopaedia Britannica*" (Chandler and Gregory 2010, 248). The findings were disputed by *Britannica*, but nonetheless the impression among millions of users is that Wikipedia is useful for finding basic information and quick facts.

There can be little doubt that the advent of the World Wide Web and the availability of electronic information it provides have dramatically impacted the production and use of dictionaries and encyclopedias. Immediate access to useful information from respected publishers is readily available to libraries and individual subscribers willing to pay, while online communities of volunteers are producing free tools like Wikipedia that seriously challenge the place that traditional dictionaries and encyclopedias hold. But the computer and the World Wide Web also serve to further fragment information, violating one of the encyclopedia's original purposes: organizing knowledge into an understandable whole. The role encyclopedias have played in preserving knowledge is also threatened by the reliance on electronic formats that may not exist in coming decades. And the lack of standards inherent in World Wide Web publishing endangers the aura of authority and reliability attached to both dictionaries and encyclopedias. In short, the future holds both exciting promise and troubling pitfalls for these historically valuable reference works.

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See also Libraries; Mass Media; Writing Systems and Materials

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Diplomacy

Although ancient civilizations used emissaries and representatives in political negotiations, modern diplomacy began with ambassadorial practices in fourteenth-century Europe. Diplomacy has seen many different forms over the centuries, such as *raison d'état* and *realpolitik*, but the essential concept remains unchanged. Present-day diplomacy, known as summit diplomacy, will dominate the politics of the future and provide a meaningful role in the development of world organizations.

The term *diplomacy* refers to the conduct of relations between kingdoms, empires, states, and nation-states. Diplomacy has existed as long as humans have lived in organized societies. Early records from ancient civilizations around the world show that rulers regularly used emissaries to convey messages to one another and to negotiate agreements. But most historians would agree that modern diplomacy originated in Renaissance Italy.

Rise of Modern Diplomacy

During the fourteenth century the Italian city-state of Venice emerged as a major commercial power in Europe. The prosperity and strength of Venice depended on accurate knowledge of economic and political conditions in the states with whom the Venetians were trading. Venice stationed permanent representatives in foreign states in order to obtain reliable information. The Venetian system was quickly taken up by the other Italian city-states. During the Renaissance the Italian peninsula was divided into a number of city-states that engaged in constant

intrigue and bouts of warfare. The need for accurate information encouraged the stationing of agents, or ambassadors, in both friendly and rival states. The use of ambassadors then spread to the kingdoms of Western Europe. The constant stream of reports from ambassadors resulted in the creation of bureaucracies, tiny by modern standards, to process and collate information, and to send out instructions. By the early eighteenth century practically all the states of Europe had foreign offices in order to manage and administer their relations with other states. The head of the foreign office became known as the foreign minister, and foreign ministers soon became key members of the cabinets of all European states, wielding great power and influence. As diplomacy became increasingly systematized, various commentators began offering books of advice on the best way to conduct diplomacy. Niccolò Machiavelli's *The Prince*, first published in 1513, is only the most famous of many such volumes.

Early Practice of Diplomacy

Over the centuries many practitioners of diplomacy have left their mark on history. In the seventeenth century the French cardinal Richelieu, chief minister to King Louis XIII from 1624 to 1642, promoted a doctrine known as *raison d'état*, which held that the good of the state was supreme, and that diplomacy must be conducted free of sentiment, ideology, or religious faith. Alliances must be forged and broken with the interests of the state as the only guide. Contemporaries criticized Richelieu for his alleged lack of morality, but Richelieu replied that protecting the state was the highest form of morality. Richelieu



In 1868 China sent Anson Burlingame (center), a retired American diplomat hired by the Qing court, to head its first delegation to the United States. The resulting Seward-Burlingame Treaty most controversially welcomed Chinese immigrant labor to the U.S.

was enormously successful, and by the time of his death, France had emerged as the dominant power in Europe, a position it maintained for the next 170 years.

France's dominant position in Europe threatened other European states, however, leading to the creation of coalitions during the late-seventeenth and eighteenth centuries to contain French ambitions. Political observers and commentators of the eighteenth century, such as the Scottish philosopher David Hume, soon began to refer to the concept of the balance of power, under which states, acting in their own selfish interests, would create a balance, or equilibrium, in the state structure of Europe. The emergence in Europe of a network of states encouraged the growth of diplomacy.

Diplomacy in Asia revolved around the concept of a single strong state, China, ringed by tributary states, and the use of emissaries to maintain the system. The major exception occurred during the Southern Song dynasty (1127–1279) when central authority in China was weakened, and something approaching a balance of power emerged temporarily. The Byzantine and

Ottoman empires practiced a similar style of diplomacy under similar situations.

The Early Nineteenth Century

Following the brutality of the French Revolutionary and Napoleonic wars that began in 1792 and ended in 1815, a new style of diplomacy emerged. The Congress of Vienna, held from September 1814 to June 1815, was intended not only to divide the spoils of war but also to lay the foundations for long-term peace in Europe. The Austrian foreign minister, Prince Klemens von Metternich (1773–1859), masterminded what he hoped would be an enduring state system in Europe. The five major powers of Europe would exist in a balance of power. Rather than acting in their own interests and hoping that a balance would result naturally, they would act in concert, hence the use of the phrase “concert of Europe.” Self-interest would be put aside in favor of the larger good, according to Metternich. The larger good meant the supremacy of the conservative, authoritarian monarchies of Europe, and the struggle

A diplomat is a man who always remembers a woman's birthday but never remembers her age. • **Robert Frost (1874–1963)**

to suppress the new forces of liberalism and nationalism. Metternich favored an ideological approach to diplomacy. The Congress (or concert) system was maintained until the Crimean War of 1853–1856. Russia's defeat in 1856 resulted in its alienation from the concert system and ushered in fifteen years of instability in Europe.

Realpolitik

The years after the Crimean War saw the return of the idea that state interest had primacy in the conduct of diplomacy, a concept now known as *realpolitik*. But *realpolitik* was little different from the style of diplomacy conducted by Richelieu. *Realpolitik* had three prominent practitioners: Count Camillo Cavour (1810–1861), prime minister of the Italian state of Piedmont; Louis-Napoleon (1808–1873, also known as Napoleon III), emperor of France; and most notably, Otto von Bismarck (1815–1898), who served first as chancellor of Prussia, and then later of Germany. All three made and broke alliances, commitments, and understandings according to the ever-changing needs of the state. Their actions frequently appalled contemporaries, but the good of the state was the primary consideration for those who conducted *realpolitik*. Count Cavour was successful in leading the campaign for Italian unification before his premature death in 1861. Louis-Napoleon was less competent, and met military defeat and humiliation in war with Prussia in 1870. Louis-Napoleon's nemesis was Bismarck, the most successful diplomat of the nineteenth century. Bismarck orchestrated the creation of a unified Germany under Prussian leadership in 1871. France had been sidelined, and Germany was now at the center of European diplomacy.

The Later Nineteenth Century

Having successfully orchestrated the unification of Germany despite intense pressure both domestically and from other European states, Bismarck was now determined to maintain its central position in Europe.

Bismarck feared that Germany was surrounded by potentially hostile states. He established a complex network of alliances designed to ensure that France remained isolated and that the other leading powers of Europe remained bound to Germany in some way. European diplomacy after 1871 was dominated by Bismarck's alliances and the need to maintain them. Bismarck demonstrated great skill in doing so. He maintained that Germany was a "satiated" power and could act as an honest broker in disputes between powers. In 1884, for example, Bismarck hosted the Berlin Conference, which set the ground rules for European expansion into vast areas of Africa and Asia. European diplomacy always had an impact on the peoples of North and South America, Africa, and Asia in the late nineteenth century. European powers fought not only in Europe, but also for advantage in overseas possessions and territories. But the Congress of Berlin was the most dramatic illustration of the global impact of European diplomacy up to that time. During the nineteenth century attempts by European powers to subjugate Asian and African states became known as "gunboat diplomacy," or "coercive diplomacy."

Bismarck left office in 1890. His successors were much less skilled in maintaining his alliances. By 1914 Germany was surrounded by an alliance system known as the Triple Entente, which included Britain, France, and Russia. As a result, Germany headed the Triple Alliance, along with Austria-Hungary and Italy, but Italy remained neutral when war broke out in 1914.

It is common to refer to the nineteenth century as the era of classical diplomacy. Diplomats of all European countries came from similar social backgrounds, usually the aristocracy, shared many common assumptions, and conducted diplomacy largely free from the impact of public opinion and domestic lobby groups.

The New Diplomacy

The trauma of World War I, with 9 million dead, led many to condemn what they referred to as the

“old diplomacy,” by which they meant diplomacy conducted by professionals. Allegedly the diplomats, acting often in secret, had created a network of alliances that plunged Europe into a horrific war. In 1918, U.S. president Woodrow Wilson (1856–1924) emerged as the leading spokesman for the “new” diplomacy. Wilson argued that diplomacy should be conducted in the open, and that “open covenants” should be openly arrived at. Instead of secret alliances, Wilson advocated the creation of a League of Nations so that the rule of international law would replace the anarchy of the prewar years. Instead of going to war, nations would submit disputes to the League for resolution. Aggressors that ignored the League would face economic sanctions and possibly military action. Some of Wilson’s ideas were implemented in the Treaty of Versailles that ended World War I. The Treaty of Versailles contained the charter for the newly created League of Nations.

Wilson, a liberal internationalist, introduced ideology once again into the conduct of diplomacy. Vladimir Lenin, who led the Bolsheviks to power in Russia in 1917, challenged Wilson’s ideas. As a Marxist, Lenin wanted to transform the war between nations and empires into a class war. His newly appointed commissar for foreign affairs, Leon Trotsky, said that he would issue a few proclamations, then close up shop. Once the worker’s revolution had swept away the old order, the need for diplomacy would vanish. The Bolsheviks also published secret documents drawn up by the Allies during the war for the partition of the Turkish Empire, further discrediting the old diplomacy. By 1921, however, it was clear that the worker’s revolution had succeeded only in the Russian Empire, renamed the Union of Soviet Socialist Republics (USSR). Lenin’s successor, Josef Stalin (1879–1953), had to maintain the security of the Soviet state, which required a great deal of diplomacy.

Adolf Hitler (1889–1945) came to power in Germany in 1933 determined to destroy the Versailles system. Hitler wanted Germany to obtain *Lebensraum*, or living space, in Eastern Europe, and did not shy away from the use of war to achieve his goals.

Hitler found the traditional mechanism of German diplomacy wanting, and he pushed aside professional diplomats in favor of Nazi party appointees such as Joachim von Ribbentrop, German ambassador to Britain in 1936 and, after 1938, Nazi foreign minister.

By the mid-1930s the unity that held nineteenth-century diplomacy together had fractured. Diplomats were divided by ideological differences and increasingly came from differing social backgrounds. Public opinion exerted an unparalleled influence on diplomacy. The League of Nations Union, formed to ensure that the British government followed League principles in the conduct of its foreign relations, attracted tens of thousands of followers in Britain. The old diplomacy had virtually ceased to function. Following the Italian invasion of Ethiopia in 1935, the foreign ministers of France and Britain—Pierre Laval and Samuel Hoare, respectively—attempted to make a secret deal with Italian dictator Benito Mussolini to end the crisis. Such dealings would have been routine in the nineteenth century. However, details of the agreement, which would have given Mussolini most of Ethiopia, were leaked to the press, forcing the resignations of both Hoare and Laval.

Summit Diplomacy

The approach of war in 1938 saw the emergence of summit diplomacy. Heads of state had been expressing frustration with what they felt was the plodding pace of diplomatic activity. Soon after taking power, Neville Chamberlain (1869–1940), prime minister of Britain from 1937 to 1940, said that he wanted to “stir up” the British foreign office. Modern communications and transportation meant that leaders could conduct their own diplomacy, and no longer had to rely on professionals. In September 1938, Neville Chamberlain flew to Germany three times to meet with Hitler in a bid to defuse the crisis over Czechoslovakia. Chamberlain’s actions created a sensation at a time when air travel was still the preserve of the wealthy elite. Chamberlain’s efforts proved futile, but face-to-face

meetings of leaders, known as summit diplomacy, proved an enduring innovation. The Allied leaders met repeatedly during World War II to coordinate their efforts. Summit meetings between presidents of the United States and Soviet leaders became a regular feature of the Cold War. During the early 1970s the constant movements of United States secretary of state Henry Kissinger between Middle Eastern capitals, in an attempt to resolve the Arab–Israeli conflict, gave rise to the phrase “shuttle diplomacy.”

Diplomacy in the New Century

Summit diplomacy remains the preferred form of diplomacy for world leaders at the dawn of the twenty-first century. Foreign ministries continue to debate foreign policy issues and offer advice to heads of state. Ambassadors are less important than in the past, but they still play a key role in the functioning of diplomacy. Summit diplomacy will continue to dominate the future of diplomacy, especially as it presents world leaders in a positive light. But diplomacy will also increasingly function in the context of international multilateral organizations such as the North Atlantic Treaty Organization (NATO), the G-7 concert of the world’s economic powers, the European Union, and the United Nations.

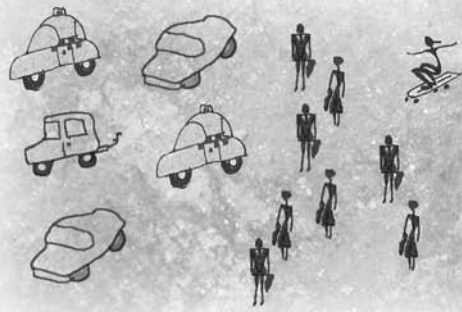
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See also Berlin Conference; Cold War; Congress of Vienna; Containment; Détente; Treaty of Versailles

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Diseases—Animal

Every disease that has caused epidemics and changed the philosophical traditions of societies throughout human history has originated in nonhuman animals and “jumped the species barrier” into humans. There is no meaningful separation between animal and human diseases when discussing the impact of disease on human history.

It is important to emphasize that because humans are mammals, diseases found in other nonhuman animals, especially other mammals, often cross readily into humans. The most important diseases are infectious and highly contagious. Noncontagious diseases have had little or no impact on history. By definition, infectious diseases are capable of spreading rapidly from infected to healthy individuals. Infected individuals either die or recover fully within a short period of time; those individuals who recover typically acquire immunity against further infection by the same illness.

Numerically, the single greatest documented epidemic in human history was an influenza outbreak that killed 40 million people at the end of World War I. The epidemic with the greatest recorded impact was the bubonic plague that killed over 25 percent of the people in Western Europe in the mid-fourteenth century. Despite a lack of documentation, however, the epidemics with the greatest overall impact both on human populations and history were the series of outbreaks that spread through the Americas shortly after contact with Europeans and their domestic animals. These epidemics spread through populations previously unexposed to the diseases of Eurasia, typically

causing 90–95 percent mortality, especially within communities suffering from multiple traumas associated with colonialism—violence, slavery, subsistence collapse. Overall these diseases may have killed as many as 100 million people in the Americas.

Prominent examples of infectious diseases that have crossed from other animals into humans include smallpox, cholera, tuberculosis, bubonic plague, and influenza. Although AIDS represents a major potential health problem in the modern world, it is contagious, but neither infectious nor acute. In recent years there have been panics over other animal diseases such as hoof-and-mouth disease, Hanta virus, and so-called mad-cow disease, which may not be a disease in the usual sense at all. These pathological conditions are trivial compared to the impact of the other diseases listed, yet they have received more publicity, perhaps because of ignorance and media-inspired fear, combined with the fact that most people do not understand how various diseases are transmitted.

Most infectious animal diseases that jump to humans are caused by bacteria and viruses whose small size renders them highly volatile and transmissible as aerosols, hence more likely to be transmitted from one individual to another, which is the basis of contagion. A few diseases, such as malaria and sleeping sickness, are caused by protistans, single-celled eukaryotic organisms that are much larger than bacteria or viruses. The larger size of protistans means they cannot be transmitted as aerosols, and hence are transmitted primarily by injection, for example, through insect bites, rendering them much less infectious.

Most infectious disease organisms co-evolve in interactions with other nonhuman species. These



Le Marchand de Mort aux Rats (literally, “the merchant of death to rats,” or, more colloquially, “the cat seller”). Rats have historically been carriers of human diseases, such as bubonic plague.

Lithograph by Marlet.

nonhuman species have evolved an immune response to the disease-causing organisms, so they are not serious threats either to health or population numbers in their original host species. What renders most of infectious diseases so virulent in human populations is that when first exposed, humans have no evolved immune response to these pathogens; for example, smallpox is related to bovine pox, which causes minor problems in cattle but is often fatal in its mutated form in humans. Similarly, the AIDS virus is closely related to a viral infection that occurs in African primates, where it only causes mild influenza-like symptoms. Other examples include measles, which is closely related to the ungulate disease rinderpest; tuberculosis, which is closely related to a similar disease in cattle; and influenza, which is actually a complex of viral diseases derived repeatedly from similar pathogens occurring in pigs (swine flu) and birds such as ducks and chickens. Recently, malaria was added to this list when it was discovered that the human malarial parasite is closely related to a less virulent form in chimpanzees.

Contagious diseases that manage to cross the species barrier from nonhumans into humans have been a major factor shaping the history of Europe and Asia. A major difference between Europe and Asia as contrasted with the Americas and Africa is that

Eurasian cultures domesticated and lived in close association with the animal species that served as the original hosts of these diseases. Domestication of ungulates, especially cattle and swine, set up scenarios whereby humans living on intimate terms with these animals were continually exposed to a wide range of epidemic diseases, which already afflicted the ungulate populations as minor problems. These diseases thrived particularly well in the high densities at which human societies kept cattle and pigs. Farmers are sedentary, living among their own sewage and that of the domestic animals with whom they live in an intimate and symbiotic fashion. In many agrarian societies farmers traditionally took cattle and pigs into their homes at night, both for warmth and to protect their livestock from predators. These conditions both prolong exposure and increase the likelihood of transmission of bacterial and viral pathogens.

Agriculture sustains much higher human densities than the hunting-gathering lifestyles that agriculture replaced. The large concentrations of humans resulting from increased urbanization provided fertile ground for the rapid spread of infectious diseases that originated in other species. Only within the last century did European cities achieve self-sustaining populations, because so many city dwellers died from

disease that constant immigration from rural areas was required to sustain urban areas.

The Black Death

Development of world trade routes rapidly increased the dispersal rate of epidemic diseases. By Roman times the populations of Europe, Asia and North Africa had become a giant breeding ground for disease organisms that originated in domestic livestock. Smallpox reached Rome in the second century CE, killing millions of Roman citizens as the Plague of Antoninus. The animal-borne disease with the most profound impact on the course of history in Europe and Asia was bubonic plague. Spread by fleas that pick up the plague bacillus from the fur-bearing mammals that are their normal hosts, plague first appeared in Europe as the Plague of Justinian in 542–543 CE. The most devastating impact of the plague, however, occurred in fourteenth-century continental Europe where it killed as many as 25 million people and became known as the Black Death. In the British Isles alone, plague killed nearly 1.5 million people (25–40 percent of the total population). The main vector for the major outbreak of plague appears to have been furs brought from low-population density areas in central Asia with the opening of trade routes to China in the mid-fourteenth century.

One important, often unappreciated, consequence of the fourteenth-century plague was its profound impact on European philosophy and science. The prevailing European worldview prior to the mid-fourteenth century was mythic and symbolic, rooted in an idea of cyclical time, placing far more emphasis on links between human and nonhuman aspects of the world than did the worldviews that arose after the Black Death.

When plague arrived and began to have devastating impact on local populations, the knowledge base and techniques of this older philosophical tradition were pressed into service, including prayer, medicine based on sympathetic magic, and scapegoating (for example, witch burning). None of these

methods proved effective, and the inability to deal with the resulting death and devastation created both widespread panic and subsequent culture-wide depression. The impact of massive, inexplicable loss of life on a society cannot be overestimated. Belief in spiritual traditions and ways of understanding how the world works are crushed, leading to a sense of spiritual desolation.

The experience of the plague, described by some historians as the “greatest biological-environmental event in history” and the “equivalent of nuclear holocaust” by others, forced Western Europe to develop a new way of organizing its perception of reality. Within Christianity the plague led to loss of faith in a benevolent, heedful Creator, leading to persecution and scapegoating of “heretics,” eventually leading to the beginnings of Protestantism and its images of a vengeful, wrathful God.

From a more scholarly perspective, response to the plague experience led to development of an intellectual tradition that separated mind from body, objective from subjective, and human from nature. This led to the beginnings of the Renaissance and development of the Western European “rationalist” scientific tradition, ultimately generating Cartesian dualism, the machine model/metaphor as a way of understanding nonhuman life, and the Baconian-Newtonian worldview. Thus the philosophical and spiritual impact of plague led directly to the “modern” rationalist approach in which experimentation and measurement substituted for observation and experience.

This new way of dealing with reality had numerous positive effects. For example, it led to increased sanitation, which reduced background levels of many contagious diseases. This division of reality into separate spheres of mind and matter provided a powerful methodology for the study and understanding of the “outside” world. It was largely inadequate, however, for understanding inner experience, the human mind, and our relationship with the world of our fellow life forms. Thus, although this dualistic view led to improved sanitation, there was no increased



understanding of the natural cycle of disease or the evolution of immune responses.

Old and New Worlds

The importance of animal diseases in shaping both human history and cultural attitudes toward the environment can be illustrated by comparing the Old World (Eurasia and North Africa) with the New World (North and South America). Many cultures in the Americas developed agriculture, but New World agriculture was based almost exclusively around agronomy, for example, corn, potatoes, squash, and beans, rather than on pastoralism, the herding and domestication of ungulates. The only domestic animals in the Americas were dogs, guinea pigs, guanacos (llama and alpaca), and turkeys. Unlike the domesticated ungulates of the Old World, these New World domesticates were never maintained at high densities, humans did not drink their milk, nor were any of these animals except dogs kept in close proximity to humans, as were livestock in the Old World.

Many New World cultures existed at densities comparable to those found in Europe. The Aztec capital of Tenochtitlán may have been one of the largest cities in the world during its heyday, and there is evidence that in central Mexico human populations surpassed the long-term carrying capacity of the land. Similarly, many other New World communities such as cities of the Mayans, Incas, and the Mound Builder cultures along the Mississippi and Ohio River valleys, lived at densities comparable to those found in European and Asian cultures. Despite high population densities, however, epidemic (crowd) diseases appear to be virtually nonexistent in these indigenous New World cultures; this is almost certainly attributable to the absence of domestic ungulates which have been the source of most epidemic diseases (other than bubonic plague) in Europe, Asia, and North Africa. Despite the apparent absence of epidemic diseases in the New World, such diseases may have played a role in the disappearance of some of the larger city complexes in the Americas, possibly because of poor sanitation.

New World Animal Diseases

One of the greatest ironies of the history of animal diseases is that the absence of nonhuman-derived contagious diseases and associated immune responses in New World humans was almost certainly the major factor in the successful invasion of the New World by Europeans and their worldview, which had been dramatically reshaped by their own experience with contagious disease only a few centuries earlier. Europeans sometimes occupied large parts of Africa and Asia, but without the decimating impact of introduced contagious diseases, they did not significantly reduce the indigenous human populations of these areas. As a consequence, as the age of colonialism draws to a close, the indigenous peoples of Africa and Asia have been able to regain social and political control of their own lands because they have remained numerically dominant in their homelands.

In contrast, the introduction of animal diseases into susceptible human populations in the Americas was much more devastating to indigenous human populations than it was during the plague in Europe. It is estimated that 90–95 percent of the indigenous human population of the Americas perished from introduced diseases.

Contrary to popular mythology this holocaust—referred to as the first, or microbial, phase of the European conquest of the Americas—did not begin with the “discovery of the Americas” by Columbus in 1492; it was initiated some time earlier by Basque whalers, Viking settlers, and English fishermen who began landing along the Atlantic coast of the Americas hundreds of years before Columbus arrived in the Caribbean and before other Spanish explorers (conquistadors) arrived in the New World. There is evidence that some tribes originally living along the Atlantic Ocean retreated inland in an effort to escape epidemics that devastated their populations well before the arrival of Cristóbal Colón at the end of the fifteenth century.

Despite the success of supposed conquistadors like Cortez and Pizarro, it was smallpox that really led to the collapse of the Aztec and Inca empires. Cortez’s



“The Wonderful Effects of the New Inoculation!” by J. Gillray. Cow Pox (better known today as smallpox) decimated the indigenous populations of North and South America when European explorers introduced the disease.

initial 1519 foray into the Aztec civilization was much less successful than his subsequent 1520 effort after smallpox arrived in Tenochtitlán. By the early seventeenth century the indigenous population of Mexico had experienced devastation exceeding 90 percent, falling from an estimated 20 million to less than 2 million. The impact of the disease was demoralizing and crushed the ability of the Aztecs to resist Cortez. Similarly smallpox arrived in Inca territory in 1526, setting up the opportunity for Pizarro’s successful “invasion” in 1531.

There is recorded evidence that 90 percent or more of the indigenous populations were wiped out by these new contagious diseases that arrived with both Europeans and their symbiotic nonhumans. In one well-documented example, the Mandans, one of the most elaborate of the Great Plains cultures, more than 95 percent of their population died after the arrival of smallpox via a Missouri riverboat in 1837.

Even given these impacts, however, it is likely that New World populations would have rebounded had their land not remained permanently occupied after European invasions and the subsequent continued colonialism that resulted.

The introduction of alien diseases had a devastating impact on the indigenous peoples of the Americas. If the deaths of 20 to 40 percent of local populations in Europe as a result of plague caused restructuring and rethinking of the role of humans in the world, it is difficult to imagine the spiritual, social, and philosophical impact of the loss of 90 to 95 percent of a population, as occurred in many indigenous peoples of the Americas.

Disease is a major factor in limiting rates of population growth; in fact populations free of the impact of diseases typically outstrip those subject to disease. Indigenous Americans appeared relatively free of epidemic disease prior to the arrival of Europeans.

As a consequence indigenous populations had not evolved any immunity to contagious diseases. They did not lack the ability to produce immune responses; instead, the devastation appeared to result from the way in which indigenous populations were exposed to contagion. The major killers of indigenous Americans—smallpox and influenza—were lethal to persons primarily from fifteen to forty years of age, hence the most valuable and productive members of a population, both culturally and demographically. These diseases typically arrived in clusters, punctuated by brief interludes of respite. Thus communities might be ravaged by a series of three or four diseases, followed by a period of remission; communities might subsequently be hit by another bout of a new disease or set of diseases. This combination of periodicity of events with the plurality of the diseases reduced the ability to evolve immune responses.

This pattern generated extreme psychological and spiritual stress. Unable to prevent disease or care for themselves or loved ones, abandoned by kin and other tribal members fleeing the epidemic (and in the process often carrying it to other peoples and communities), many individuals and groups simply gave up hope. Many engaged in activities that only hastened their deaths, such as sweats followed by immersion in cold water. The inability of their traditional holistic methods to treat diseases and control these contagions caused them to lose faith in their healers and medicine people and also to abandon traditional spiritual practices and ceremonies. Because the European invaders had developed some immunity to these diseases, many indigenous peoples assumed that European spiritual and philosophical traditions were superior to their own, which in many cases led to acceptance and adoption of Christianity and its tenets.

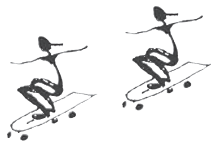
The apparent failure of indigenous spiritual traditions, combined with the introduction of new goods and materials, led indigenous peoples to abandon centuries-old traditions of dealing with the natural world, which were based on respect, connection, and conservation. Some peoples may even have blamed the wildlife and the natural world for the epidemics,

because it appears that many indigenous peoples associated disease with wildlife and developed cultural traditions that were assumed to minimize the likelihood and impact of disease. For example, the Cherokee assumed that disrespectful treatment of killed deer could lead to crippling illness, such as Lyme disease, which produces crippling effects. The Cherokee blamed the appearance of new diseases on an imbalance in the cosmos caused by failure on their part to perform their rituals correctly. Similarly the Anishinaabe (Chippewa, Ojibway) peoples apparently developed the Mediwiwin healing society and related ceremonies in response to diseases they associated with wildlife, but the diseases were more likely the results of pre-Columbian contact with Europeans.

Affect on Nonhuman Species

Not only humans suffered as a result of the introduction of these diseases. Indigenous peoples depended on many natural populations of animals as sources of food and clothing, including deer, caribou, moose, bison, and beaver, that also experienced massive die-offs from west of Hudson Bay to the Rocky Mountains during the latter part of the eighteenth century. These deaths probably resulted from disease introduced by Europeans through their domestic animals. It is worth noting that these die-offs were primarily among ungulate populations, which would have been most susceptible to the ungulate-borne contagious diseases characteristic of Europe and Asia. New World carnivores, such as wolves and bears, appeared relatively unaffected by these illnesses, but they suffered as a result of the loss of their ungulate food supplies.

In addition to the impact of disease, additional damage was inflicted upon natural populations of animals when indigenous people destroyed animal populations because of an apparent antipathy towards animals, whom were assumed to have broken their covenants with humans by infecting them with disease. Thus one ironic consequence of the introduction of nonhuman-derived diseases was the destruction of cultural traditions based on respect for nonhumans. Most, if not all, indigenous cultures of



North America had philosophical traditions where nonhumans were regarded as creator spirits, and the concept of relatedness was based upon ecological relationships. It has been argued that the devastating impact of introduced disease on these cultures caused them to turn on their nonhuman relatives, allowing some tribes to wipe out local populations of beaver, deer, bison, and wolves, in order to trade furs for European goods and metal.

European Tradition and the Natural World

The invading European tradition, derived primarily from English and Scots cultures, had a very different relationship with the natural world, especially as a result of the Renaissance and the rationalist tradition, which worked to separate itself from any association with the natural world, except as a resource for exploitation. Protestant Christian sects that appeared in western Europe towards the end of the Renaissance (during the Reformation) developed philosophical traditions that offered no encouragement for investigation into the ways of God's creatures. God had given humans "dominion" over nonhumans, providing sufficient justification for any action regarding the natural world.

Europeans regarded mountainous country as unpleasant and dangerous, and forests were considered to be even worse. That these places were wild, hence untamed, was sufficient to trigger terror and hostility in western Europeans. The wild (natural world) was so unreasonably fearsome that encroachment of wild creatures into the human domain was highly alarming. A bee flying into a cottage or a bird rapping at the window was enough to frighten people. The English House of Commons rejected a bill in 1604 because a jackdaw flew through the chamber during the speech of its sponsor.

This difference in response to the nonhuman (natural) world continues to manifest itself today in contemporary responses to animal-borne disease. These responses are often extreme in comparison to the actual threat. The most egregious response in recent

years has been the slaughter of hundreds of thousands of farm animals, particularly in the British Isles, in response to minor outbreaks of hoof-and-mouth disease and the sporadic and highly unusual occurrence of so-called mad-cow disease.

In the case of hoof-and-mouth disease, the threat is almost exclusively economic. There is little evidence that hoof-and-mouth disease represents any serious threat to human health. Still the economic threat is deemed sufficient enough to destroy hundreds of thousands of animals, mostly because the possibility exists that they may have been exposed to the disease. Can any moral being imagine such a draconian solution if the animals exposed to a potential contagion were *Homo sapiens*, rather than ungulates? Similarly, wild bison that stray beyond the borders of America's Yellowstone National Park are summarily slaughtered by agents of the state of Montana on the grounds that these animals might act as reservoirs for the cattle disease brucellosis. The irony in this case is that brucellosis is a disease that evolved in Old World bovids and was introduced into America along with cattle. No bison has ever shown the symptoms of brucellosis, yet the fact that a low percentage of bison test positive for exposure to the pathogen is deemed sufficient reason to kill them.

The response to mad cow disease, more properly called bovine spongiform encephalopathy (BSE), is even more absurd. BSE appears to be one of a group of related pathological conditions that may be caused by prions that appear to be protein molecules capable of self-replication. Other diseases in this category are scrapie in sheep and both kuru and Creutzfeldt-Jakob disease in humans. Such pathological conditions impact the central nervous system (CNS) and gradually destroy the brain. The damage to the CNS is what produces the symptoms that have disrespectfully led to this condition being designated with the term *mad cow*. A far better and more accurate term would be *acutely distressed cow*. These apparently prion-based conditions are not directly communicable and can only be passed through consumption of CNS tissue including brain and spinal cord. The only reason these conditions appeared to spread in the United States and

England is because slaughterhouses in those countries use “wastes” remaining after butchering to be ground up and added to cattle feed as a protein supplement.

In humans it is obvious that only through consuming CNS material can humans become infected. Outbreaks of kuru in New Guinea are clearly related to the cultural tradition of consuming the brains of other humans as part of a cannibalistic tradition. In England, BSE-type syndromes have shown up in humans who consumed low-grade commercial hamburgers. It seems obvious that banning the use of the waste products of slaughterhouses in both hamburger for human consumption and in cattle feed could stop any possible outbreak, yet commercial pressures have slowed or prevented such moves. Still, the total number of BSE human victims numbers less than twenty, and there is little likelihood of an outbreak or of a human contracting BSE through eating regular beef in the form of roasts or steaks.

Hanta virus is a rodent-borne viral pathogen. There is actually an entire class of Hanta-like viruses in a variety of murid rodents. The one described as Hanta virus appears to have only one species—deer mice, or *Peromyscus maniculatus*—as its primary host; it does not appear to cause significant health problems in deer mice. In humans, however, this virus causes pneumonia-like symptoms that result in death about 50 percent of the time. This disease is well-known to indigenous peoples of the American Southwest and may be one of the reasons that traditional Diné (Navajo) people destroy a hogan after a person has died in it. In recent years this disease has caused a minor panic in the United States because deer mice are a widespread, common rodent. Hanta does not appear

to be transmissible among humans, so it is unlikely to ever become a true epidemic. The number of recorded cases in the United States is less than two hundred since the Center for Disease Control (CDC) has been keeping records.

The major environmental and health-related problems in humans result primarily from close association with domestic animals. This continued proximity has allowed several diseases to jump from their ungulate or avian hosts and cross the species barrier into humans.

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See also Biological Exchanges; Columbian Exchange; Diseases—Overview

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Diseases—Overview

The study and treatment of disease is a never-ending pursuit due to human evolution and our ability to adapt to and resist diseases over time. Research shows that disease increased as foraging stopped and humans began settling together in one place. Only in the twentieth century did epidemiologists recognize that hosts and germs adjust to one another, so symptoms (and medical diagnoses) change.

Disease refers to many kinds of bodily malfunction: some lethal, some chronic, and some merely temporary. Some diseases, like cancer and Alzheimer's disease, increase with age and result from disordered processes within our bodies; others arise from infection by invading germs and afflict children more frequently than adults because we develop immunities after early exposure to them. Symptoms of infectious diseases vary with time and place, owing to changes in human resistance and to evolutionary changes in the germs themselves. Consequently, written descriptions of ancient infections, even when quite detailed, often fail to match up with what modern doctors see. Hence, even when records exist, determining exactly when a particular infection first afflicted people in a given place is often unknowable. And no one can doubt that major disease encounters also took place among peoples who left no records for historians to examine. Nonetheless, and despite all such difficulties, some landmarks in the history of the human experience of disease are discernible from the deeper past, while in recent times the changing impact of diseases and medical efforts to control them are fairly well known.

Diseases among Foragers and Early Farmers

It is safe to assume that our remote foraging ancestors encountered many sorts of parasites, some of which, like the organism that causes malaria, were seriously debilitating. Sleeping sickness, spread by tsetse flies, was so lethal for human hunters that parts of east Africa remained uninhabited until recently, thus preserving vast herds of game animals that tourists now come to see. All the same, it is probable that our early ancestors were tolerably healthy and vigorous most of the time. That, at any rate, is the case among surviving African foragers as observed by modern anthropologists. Probably infectious organisms and their human hosts were fairly well adjusted to one another, having evolved together in tropical Africa; diseases of aging scarcely mattered since their lives were far shorter than ours.

Since many of Africa's tropical parasites could not survive freezing temperatures, infections probably diminished sharply when human bands expanded their range, penetrating cooler climates and spreading rapidly around the entire globe. Leaving African infections behind presumably increased human numbers and helped to sustain their extraordinary geographic expansion.

But infections began to increase again when, in different parts of the Earth, a few human groups began to cultivate the soil and settled down in the same place all year round. That was partly because food production allowed more people to crowd together and exchange infections, and more especially because supplies of water were liable to become contaminated



Pieter Bruegel, *The Triumph of Death* (c. 1562). Oil on panel. The painting reflects the social upheaval and terror following the bubonic plague that devastated medieval Europe.

by bacteria from human wastes. This increased exposure to infections of the digestive tract. Moreover, wherever farmers resorted to irrigation, wading in shallow water exposed them to a debilitating infection called schistosomiasis (or bilharzia), which they shared with snails. And whenever cultivators came to depend on a single crop for nearly all their food, dietary deficiencies were liable to set in. A diet of maize, for example, lacks some of the amino acids humans need and provokes a chronic disease called pellagra. Finally, the domestication of animals, though their meat and milk improved farmers' diets, intensified disease transfers back and forth between humans and their flocks and herds. A large array of bacteria and viruses traveled this path.

Yet intensified exposure to such diseases did not halt the increase in farming populations. Instead more people cultivated more ground, producing more food to feed more children. Farming villages therefore multiplied and spread from the regions where they

had initially established themselves, and human beings soon ceased to be rare in the balance of nature, as their foraging ancestors and other top predators, such as lions and tigers, had always been.

All the same, farmers had to labor longer and at more monotonous tasks than foragers did, and they faced famine whenever bad weather or an outbreak of plant disease provoked crop failure. Seizure of stores of food by human raiders was another serious risk that increased wherever grain farmers became dense enough to occupy nearly all suitable farmland. And when raiders became rulers by learning to take only part of the harvest as rent and taxes, farmers faced another drain on their resources and had to work still harder to feed themselves and their new overlords. Life remained short by our standards, so diseases of old age remained exceptional.

Then, beginning about 3500 BCE, rulers and their various hangers-on began to create cities in a few densely inhabited farming regions of Earth, and

disease patterns changed again, manifesting diverse and unstable local equilibria. These may be described as regional agrarian disease regimes; they were succeeded after about 1550 CE by an equally unstable global disease regime within which we still find ourselves. The balance of this article will explore these successive disease environments.

Regional Agrarian Disease Regimes

When large numbers of persons began to cluster close together in cities, the problem of waste disposal multiplied as never before. Exposure to new infections multiplied as well, since long-distance comings and goings by soldiers, merchants, seamen, and caravan personnel often crossed disease boundaries and spread infections far and wide. Moreover, when urban populations exceeded a critical threshold, a new class of herd diseases began to afflict humans for the first time. These diseases existed initially among large populations of wild flocks and herds, or dense populations of burrowing rodents and other small animals. A distinguishing characteristic of these diseases was that when they were not fatal, they provoked antibodies in their animal or human hosts, so survivors became immune from a second infection. This meant that the germ could only persist when it found enough newborns to feed upon for a few weeks before death or recovery created another crisis of survival for the infection in question.

Just how large the total host population had to be to permit a chain of infection to continue indefinitely depended on birth rates and how closely in contact potential hosts might be. To move from host to host, many infections depended on airborne droplets, set adrift by breathing, coughing, and sneezing, and therefore they needed close encounters for successful transmission. In the modern era (from about 1750), for example, measles—a viral disease dependent on droplet propagation—required at least 7,000 susceptible individuals within a community of something like 300,000 persons to keep going. Obviously, infections like measles could only persist in urban settings and among villagers in contact with large urban centers.

Some of these, like smallpox and measles, were highly lethal; others like mumps and influenza were milder. No one knows when or where they made good their transfer from animal herds to human hosts, but it is certain that it took place somewhere in Asia, perhaps at several different times and places. It is equally sure that they could do so only in and around cities, thus becoming distinctive new “civilized” diseases.

Their arrival had paradoxical effects. By killing off urban dwellers, they soon made most cities so unhealthy that they needed a stream of migrants from surrounding villages to sustain their numbers. Yet these same diseases also created a new and very powerful advantage for disease-experienced populations in contact with previously unexposed populations. That was because among peoples who lacked acquired immunities, herd infections spread like wildfire, killing adults as well as children. In the modern era, initial exposure to measles or smallpox commonly killed off something like a third of the entire population in a few weeks, leaving survivors dazed and distraught and quite unable to resist further encroachment by the disease-bearing newcomers. The effect was multiplied when successive civilized diseases followed one another in rapid succession. Smallpox, measles, influenza, and even the common cold could all be, and often were, lethal.

Before that drastic pattern could establish itself generally, different centers of civilization had to survive the arrival of these infections from wherever they first started. Everything about the initial spread of herd diseases within Eurasia and Africa remains unknown, but disease disasters that ravaged the Roman Empire between 165 CE and 180 CE, and a second time between 251 CE and 266 CE, probably register the arrival of smallpox and measles in Mediterranean lands, brought back by soldiers returning from Mesopotamia. Written records also show that China suffered unusually lethal epidemics in 161–162 CE and again in 310–312 CE.

It looks, therefore, as though extended contacts within Eurasia, arising from the establishment of the so-called Silk Roads that connected China with Syria,



This print by Matsukawa Hanzan enlightened viewers about the importance of the smallpox vaccine and the work of Kōan Ogata, a Western-trained doctor who vaccinated three thousand people in 1849 at his clinic in Osaka, Japan.

allowed highly lethal outbreaks to occur at both extremes of Eurasia at nearly the same time, inflicting severe damage both on the Roman and Chinese empires. But surviving records say little or nothing about lands in between, and guesswork is useless. By contrast, we know that the Americas were exempt from these herd diseases until the Spaniards arrived, and the same was true of other isolated populations around the globe. Consequently, in the sixteenth century, when European seamen began to encounter people lacking immunities to these diseases, massive die-offs regularly ensued.

By then the agrarian peoples of Eurasia had another twelve hundred years of disease exchange and exposure behind them. One well-known episode came between 534 CE and 750 CE, when sporadic outbreaks of bubonic plague ravaged Mediterranean coastlands, only to disappear for the next six

centuries. The historian Procopius wrote an exact description of the initial onset of that plague, explaining that it came by ship and originated in central Africa. Other factors were in play; modern studies show that bubonic plague is spread normally by bites of rat fleas, which transfer to humans only after their normal hosts die of the disease. The domestic rats in question were probably native to India, and in 534 CE they were relatively recent arrivals in Mediterranean coastlands.

The infection itself was at home in underground burrows of various species of rodents in central Africa and northern India, where it behaved like a childhood disease among rats and became a lethal epidemic only when it invaded inexperienced populations of domestic rats and, of course, humans. But under those circumstances it was indeed highly lethal.

Procopius says that when the disease first struck in 534 CE, ten thousand persons died daily in Constantinople for forty days. Loss of population and wealth were certainly severe and prevented the Byzantine emperor Justinian (reigned 527–565 CE) from reconquering the richest provinces of the western empire, which he had started to do.

Germanic and northern Europe escaped this bout with plague, probably because rats had not yet established themselves there. But in the so-called Dark Ages other serious epidemics—including smallpox, measles, and influenza—did break out in the north from time to time, and as ships began to travel the northern seas more frequently, all of Europe became more and more tightly tied into the disease pool centered upon the network of Mediterranean cities. Leprosy, tuberculosis, and diphtheria were among the infections that spread more widely during these centuries. But their spread cannot be traced since they did not provoke sudden, massive die-offs as smallpox, measles, and the plague did.

Nothing equally detailed is known about how other centers of civilization in Eurasia and Africa encountered new infections in ancient and medieval times. But two Chinese texts describe an outbreak of bubonic plague along the southern coast in 610 CE, so it looks again as though China's disease history

matched that of Europe quite closely. This is not really surprising, since the ships and caravans that moved back and forth among all the Eurasian civilized lands carried infections with them, and invading armies occasionally exposed thousands of inexperienced soldiers to a new infection all at once.

North and East Africa shared in this homogenizing process, while the African interior, Southeast Asia, and northern Eurasia took more sporadic parts and so lagged somewhat behind. But overall, as disease exposures intensified across the entire Old World, resistance to infections increased, and local populations got used to living with heavier disease burdens. The assortment of prevalent diseases always differed from place to place, since climate set limits to many infections. In general, warmer and wetter conditions favored disease organisms; infections that depended on mosquitoes, fleas, or other insects to move from host to host also fared best under those conditions. Winter frost set limits to the spread of many kinds of parasites, and so did desert heat and dryness. In addition, local customs sometimes minimized disease exposures. In southwestern China, for example, where bubonic plague germs were endemic among burrowing rodents, European doctors in the nineteenth century scoffed at superstitious villagers who fled to higher ground whenever they found dead rats in their houses, yet half a century later, after Europeans had learned how the plague was transmitted, they realized that such behavior was an effective precaution against catching the disease. Some customs, on the other hand, intensified infections. Religious pilgrimage is a prime example, as was ritual foot-washing in Muslim mosques, where the water in the fountains sometimes contained the organisms that cause bilharzia.

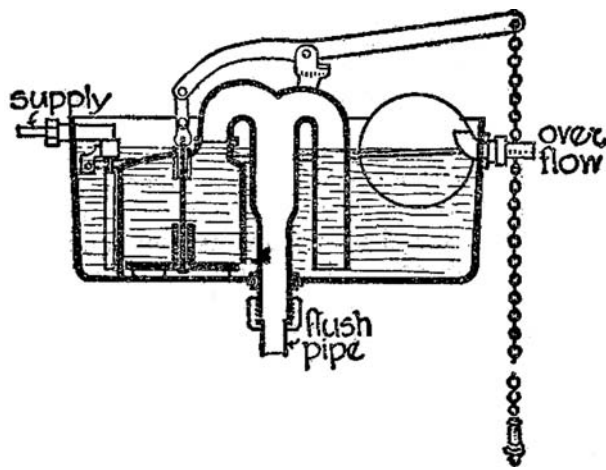
Most disease disasters were soon forgotten, which is why so little is knowable about the spread of infections. But the Black Death was an exception. The heavy die-off provoked when bubonic plague returned to Europe in 1346 continued to haunt folk memory and still colors our common speech. About a third of the population of Europe died of the plague between 1346 and 1350, but what kept

the memory of the Black Death alive was the fact that plague continued to break out from time to time in Europe and North Africa down to the present, even after effective antibiotic cures were discovered in the 1940s. We know something about how this came to pass.

First of all, the vast Mongol Empire, extending from China to Russia, permitted rapid, long-range movement throughout Eurasia on a far greater scale than ever before. Plague was only one of several infections that took advantage of this fact to expand their domain. More particularly, a Mongol army invaded the borderland between China and India in 1252, penetrating a region where plague infection was chronic, and seems to have carried the infection back to its homeland in the steppes. At any rate, *Pasteurella pestis* (*Yersinia pestis*), as the bacterium that causes plague is called, somehow found a new home and spread among burrowing rodents of the northern grasslands, where it was discovered by Russian scientists only in the 1890s. This was the reservoir from which the plague of 1346 broke upon Europe and the Muslim world.

Ships spread it swiftly from Feodosiya (or Kaffa) in the Crimea, where it first broke out, to other Mediterranean and north European ports. Then the infection moved inland. Wherever the plague arrived, death came quickly and unpredictably to young and old. More than half of those infected died. In Muslim lands, the disease took a similar toll; China, too, lost about half its population from a combination of plague and warfare by the time the Mongol Empire collapsed and the Ming dynasty took power in 1368.

Plague continued to visit all these lands at irregular intervals thereafter. The population in Europe continued to decline until about 1480, when the accumulated resistances among survivors at last permitted population growth to resume. It accelerated once the plague disappeared from England and northern Europe after a final visit to London in 1665, partly because efforts at quarantining ships coming from plague-infected ports reduced exposure and partly because slate roofs, introduced as protection against fire, created greater



Indoor plumbing and underground sewage systems advanced public health by helping to control the spread of disease in dense, urban centers.

distance between humans and hungry rat fleas than when rats nested overhead in the thatch. In eastern Europe and Asia, plague continued to break out until the twentieth century, but little by little local adaptations reduced its impact everywhere.

Overall, the most enduring change came to the steppes—the Mongol homelands—where nomadic herdsman found themselves permanently exposed to a very lethal infection. Losses were so heavy that nomads even withdrew from the fertile grasslands of the Ukraine, leaving them vacant for agricultural pioneers to encroach upon, beginning about 1550. This reversed a human tide that had favored nomad expansion ever since the first millennium BCE, carrying first Indo-European and then Turkish languages across Europe and much of Asia.

Other changes in disease patterns accompanied or soon followed the sudden expansion of bubonic plague. The most conspicuous was the retreat of leprosy, emptying thousands of leprosaria that Europeans had built to isolate lepers in accordance with biblical injunctions. Many lepers died of plague during the first onset; but something else must have been at work to overcome the various skin infections that medieval Europeans lumped together and called leprosy. One possibility is Europe's reduced population had a proportionally larger supply of wool with which to clothe themselves, and by wearing long, warm nightclothes and thereby reducing skin-to-skin contact between people, they may have cut

down on the transmission of skin diseases. No one knows for sure.

Ironically, another skin disease, yaws, caused by a bacterium indistinguishable from the one that causes syphilis, may also have been nearly banished from European populations. The epidemic of syphilis that broke out after 1494 may have been the result of the bacterium finding a new path of propagation via the mucous membranes of the sex organs. Again, no one can be sure.

Yet all the mingling and transformations of diseases across Eurasia and Africa before 1500 never erased local differences. Above all, large parts of the Earth remained unaffected by the rising tide of infection among Old World peoples, and they found themselves correspondingly vulnerable when crossing the oceans became routine and a new *global* disease regime began to emerge.

Global Disease Regimes

The first and most overwhelming effect of oceanic navigation was to spread a large array of lethal infections among inexperienced human populations. This process continues in remote Amazon jungles and Arctic shores even today, but by now almost every human population has been at least partially exposed, and the initial shattering effect is past. But when it was new, whole peoples disappeared, and vast landscapes in the Americas and Australia were severely depopulated. Immigrants from Europe and Africa—and subsequently also from Asia—were therefore able to supplant the older inhabitants, creating the mixture of peoples we know today.

Native Americans were the largest population exposed to destruction by the new disease regime. The native population of Hispaniola, where Columbus set up his headquarters, disappeared entirely within a few decades, and within the first fifty years of their exposure to new infections, the much larger populations of Mexico and Peru diminished to about a tenth of what they had been in 1500. Millions died of smallpox and innumerable other infections until



immunities accumulating in survivors' bloodstreams checked the die-off. In Mexico and Peru the worst was over by 1650. Gradually population growth began again, though in more isolated parts of the Americas local die-offs continued. Warfare and less organized forms of human violence played a part in destroying Native Americans, but Afro-Eurasian diseases always had the principal role.

Caribbean islands and tropical coastlands of the Americas also proved hospitable to malaria and yellow fever from Africa once the species of mosquito that carried them came across the Atlantic on board slave ships. No exact time horizon for the arrival of malaria in the New World can be discerned, but in 1648 a lethal epidemic of yellow fever in Havana announced the arrival of that disease unambiguously. When it subsequently became endemic, survivors acquired a very potent protection against invading armies, since soldiers from Europe regularly fell ill and died of it within about six weeks of their arrival. This allowed the Spanish to overcome British efforts to conquer the sugar islands in the eighteenth century, doomed Napoleon's attempt to reconquer Haiti in 1801, and persuaded him to sell the Louisiana territory to Thomas Jefferson in 1803. Quite a political career for a virus from tropical Africa!

Elsewhere, inhabitants of Australia, New Zealand, and other isolated communities experienced approximately the same fate as Native Americans did when disease-experienced Europeans arrived among them. Always the newcomers also brought a rich array of other organisms with them: crops and weeds, together with domesticated animals and pests like lice, rats, and mice. The Earth is still reverberating from the ecological upheavals initiated when humans and innumerable other organisms began to cross the oceans, making the biosphere into a single interacting whole as never before.

Disease exchanges ran almost entirely one way, spreading from Afro-Eurasia to other lands. Reverse transmissions are hard to find, though some experts believe that syphilis came to Europe from the Americas. Europeans discovered that disease when it broke

out in a French army besieging Naples in 1494, so its connection with Columbus's return in 1493 is indeed possible. But there is no clear evidence of the prior existence of syphilis in the New World, so no one can be sure.

Another disease, typhus, also invaded Europe in 1490; but it came with soldiers from Cyprus and may not have been new, but only newly recognized by doctors of the day. More recently, other infections have also invaded disease-experienced populations of the Earth. AIDS is the most serious and widespread, and it may have been transferred recently from monkeys somewhere in the African interior, or perhaps, like typhus, AIDS is much older and remained unrecognized until increasing sexual promiscuity turned it into an epidemic.

Three other new disease exposures affecting industrialized populations in modern times are also worth mentioning. Tuberculosis (TB), a very ancient infection, gained fresh impetus after about 1780 when new factories, powered by coal and steam, began to crowd people together in industrial towns under unsanitary conditions. Its ravages crested in Europe about 1850, shortly before a German professor, Robert Koch, discovered the bacillus that caused it in 1882, thereby inaugurating a new age for preventive medicine. Yet despite modern medical skills, TB remains the most widespread and persistent human infection worldwide, sustained by the extraordinary growth of cities that had carried more than half of humankind into crowded urban settings by 1950 or so.

Cholera, too, was an ancient disease at home in India, where it flourished among Hindu pilgrims who came to bathe in the Ganges. The cholera bacillus can survive independently in freshwater for considerable periods of time, but it multiplies very rapidly in the human alimentary tract and causes diarrhea, vomiting, fever, and often death within a few hours of its onset. Bodily shrinkage from dehydration and skin discolored by bursting capillaries make the symptoms of cholera especially horrible. So when the disease broke through long-standing boundaries in 1819, spreading to Southeast Asia, China, Japan, East

Africa, and western Asia, it aroused intense fear and panic even though mortality rates remained rather modest—a mere 13 percent of the total population of Cairo, for instance. Between 1831 and 1833 a fresh outbreak carried cholera across Russia to the Baltic and thence to England, Ireland, Canada, the United States, and Mexico. Even more important, cholera established itself in Mecca in 1831, where it infected Muslim pilgrims. They in turn carried it home with them, periodically spreading cholera all the way from Mindanao to Morocco until 1912. Then cholera disappeared from Mecca, and Muslim pilgrims ceased to spread it far and wide; but it lived on in India, where Hindu pilgrims continued to be its principal carriers.

European and American responses to this dread infection were strenuous indeed. Reformers in England set out to reengineer the water supply and sewer systems of London and other cities to assure germ-free drinking water. It took years to build new water systems, but as they spread from city to city, many other sorts of infections diminished sharply. Helped by vaccination against smallpox, dating back to the eighteenth century, cities became far more healthful than before. This sanitary effort involved new laws and medical boards of health with mandatory power to enforce preventive measures. It was the first great medical breakthrough of modern times. Bit by bit, vaccination and sanitation spread around much of the globe, changing human experience of infectious disease so fundamentally that we have difficulty imagining times when infant death was a matter of course and adults died of infections more often than from degenerative diseases of old age.

Yet some diseases were little affected by these preventive measures. The viruses that cause influenza, for example, vary from year to year, and regularly find receptive human hosts whose immunities from previous years are ineffective against the new variants. In 1918–1919 a new strain of the virus proved particularly lethal, killing about 20 million persons as it spread around the world, which made it far more

deadly than World War I. Yet, as so often before, survivors soon almost forgot about their encounter with such a lethal epidemic.

That was partly because a second medical breakthrough, comparable to the sanitary successes of the nineteenth century, came after World War II. Suddenly, use of DDT to poison mosquito larvae almost eliminated malaria from many regions of the Earth, while penicillin and other antibiotics became generally available to kill other infections. All at once, instant cures for ancient diseases became a matter of course. On the prevention side, the World Health Organization carried out a successful campaign that eliminated (with the exception of laboratory specimens) smallpox in 1976. Yet these triumphs did not last very long. While effective against mosquitoes, DDT also poisoned so many forms of life that its use was soon abandoned. More generally, infectious agents began to develop resistances to the new antibiotics. As a result, malaria reclaimed some of its old importance, and other ancient infections did likewise.

Then when AIDS was recognized in 1981 and successfully resisted chemical cures, doctors, once so confident of victory over infections, had to admit that their new skills had unexpected limitations. Infections were coming back, and diseases of old age were increasing. All too obviously, and despite all the recent medical marvels, human bodies remain subject to infection and degenerate with age.

Diseases change, and have always done so. Human behavior changes too, affecting how diseases afflict us. Since 1750 or thereabouts, medical knowledge and practice drastically altered the global disease regime and lengthened human life for billions of persons. But all our skills do not change the fact that we remain part of the web of life on Earth, eating and being eaten, everywhere and always.

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See also Diseases—Animal; Diseases—Plant; HIV/AIDS; Malaria

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Diseases—Plant

The relationship between humans and the diseases that afflict plants is intertwined throughout history. Humans were often the ones who unintentionally introduced or spread certain types of disease among plants, which resulted in food shortages and famine. Thus the study of plant diseases remains crucial; whatever threatens crops threatens the health and survival of humans.

Preliterate peoples as well as some literate peoples believed that spirits cause disease. Greek physicians dismissed this notion and instead insisted that disease had physical rather than supernatural causes. In the fifth century BCE, the Greek physician Hippocrates taught that an imbalance of fluids causes disease in humans, a claim that left the cause of disease in plants both ignored and unexplained. In the nineteenth century, the German botanist Anton de Bary, the German bacteriologist Robert Koch, and the French chemist Louis Pasteur swept aside the ideas of Hippocrates. De Bary, working with the potato, and Pasteur and Koch, working with cattle, demonstrated that pathogens (parasitic microbes) cause disease. The germ theory of disease is the foundation of modern medicine.

The focus on human diseases should not deflect attention from plant diseases. Despite a perception to the contrary, plants suffer from more diseases than humans do and for an obvious reason. Plants colonized the land 410 million years ago, whereas modern humans made their appearance only 130,000 years ago. The pathogens that attack plants have had some 400 million more years to evolve new types by mutation than those that attack humans.

Plants diseases often affected history when they provoked famines, but human actions also affected plants from very early times, when our ancestors learned to control fire and began to burn dry vegetation to help their hunting. Subsequently, humans carried seeds to new locations when they began to plant fields of grain and other food, and eventually they carried favored crops all around the world. They also spread plant diseases unintentionally together with weeds, as well as animals and insect pests. Plants and humankind, in effect, interacted so closely that they began to evolve together. Even as nomadic foragers, humans depended on plants for sustenance. The rise of agriculture in western Asia some 10,000 years ago and its spread throughout the world have wedded the destiny of humans to that of crops (domesticated plants). Whatever has threatened crops has threatened the health and survival of humans.

Diseases of the Staple Grasses

Grasses such as wheat, rice, and rye have been the staple crops that have sustained populations over the centuries; thus the diseases associated with them have great impact on humans, potentially affecting not only food supplies but their health as well.

Wheat Rust

Wheat rust is one of the oldest plant diseases. Some scholars believe that a passage in Genesis records an outbreak of rust in the Levant that caused famine so severe it forced the Hebrews to migrate to Egypt, the granary of the ancient Mediterranean world. If these

scholars are right, this text is the earliest written account of a plant disease.

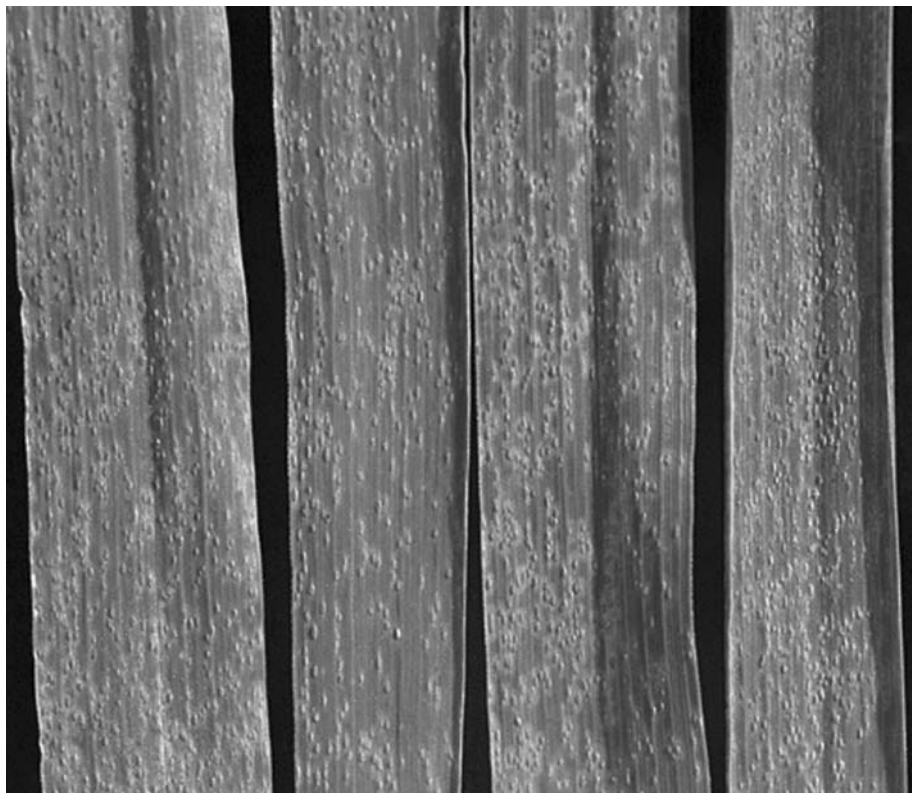
Only in the fourth century BCE did Theophrastus, a Greek botanist and pupil of Aristotle, coin the term *rust* for this disease because of its reddish hue on the leaves and stem of wheat plants. Theophrastus wrote that wheat planted in valleys and other low ground suffered from rust more often and more acutely than wheat planted on high ground, though he could not explain this fact.

That insight came to the Romans. As early as 700 BCE, they identified the reddish hue on wheat plants as the mark of rust. At that time they began to worship Robigus; historians identify Robigus as the god of rust, a fair statement so long as one remembers the Greek rather than Roman origin of the term *rust*. The idea that a god unleashed rust on the Romans underscores their belief that rust had a supernatural cause. Trade with the Greek city-states led the Romans to abandon a supernatural explanation of plant diseases. In the first century BCE, the naturalist Pliny the Elder made

the crucial link between moisture and the onset and spread of rust, writing that rust afflicted wheat grown in areas where fog and dew were common in morning and evening. Pliny's insight into the role of water in spreading rust was prescient because rust, like all fungal diseases, spreads in wet environments. The rust fungus needs water to produce the millions of spores that are the next generation of fungi. Two centuries later, the agricultural writer Columella warned farmers against staking their livelihood on wheat. The only protection against rust was to grow a diversity of crops. Columella recommended cultivation of chickpeas and lentils because of their immunity to rust.

Columella had reason to worry: the first three centuries of the Common Era were unusually wet in the lands along the Mediterranean Sea, bringing rust to wheat fields throughout the Roman Empire.

In the seventh and eighth centuries, Arabs brought the barberry bush with them as they swept across North Africa and into Spain. Neither Arabs nor Europeans understood that the bush harbors rust fungi



Close-up of wheat rust, one of the oldest plant diseases.

Photo by James Kolmer for the United States Department of Agriculture, Agricultural Research Service.

because the fungi inhabit the bush without harming it, much as the pathogens that cause malaria and yellow fever live in the gut of the female mosquito without harming her. A barberry bush that harbors rust fungi has no symptoms of disease. Only in the seventeenth century did Europeans begin to suspect the bush to be a Trojan horse. In 1660 France enacted the first law to eradicate the bush. Other European nations passed similar laws, as did the American colonies in the eighteenth century.

These measures were not enough to stop the spread of rust. Plant breeders in the nineteenth century began to search for rust-resistant wheat to cross with high-yielding but susceptible varieties; this effort accelerated during that century as England, France, the German states, and the United States poured money into agricultural science. Around 1900 agronomists at the U.S. Department of Agriculture identified an Italian durum wheat suitable for pasta and a Russian emmer wheat suitable for bread. These were the first of innumerable resistant wheat varieties that give humans the best, if incomplete, protection against failure of the wheat crop from rust.

Rice Stunt Disease

Chinese records first mention the cultivation of rice four thousand years ago, though its cultivation began earlier in southeastern Asia. By 500 BCE, farmers grew rice in China, the Korean peninsula, and the swath of land between modern Vietnam and India. By the first century CE, farmers were growing rice in Japan, Indonesia, and the Philippines. The people of these regions were nearly as dependent on rice as the Irish would be on potato in the nineteenth century. True, farmers also grew soybeans throughout Korea and China, and wheat grown along the Indus River reached the people of central and southern India by trade, but soybeans and wheat were minor supplements to a diet of rice.

Roughly forty diseases afflict rice, making difficult the task of sorting among them difficult, as well as among climatic factors, to explain the 1,800 famines that Chinese documents have recorded since 100 BCE and the seventy in India since 33 CE. Because rice

needs more water than any other grain to thrive, Chinese and Indian texts often attributed crop failures to inadequate or impure water.

In the sixth century CE, a Japanese text mentions stunted (short or dwarf) rice plants that bore little or no rice. The condition baffled farmers for 1,200 years. In 1733, 12,000 Japanese died of famine when stunt destroyed their rice crop, yet no one was any closer to understanding what stunted rice plants. Unlike Europe, Asia never developed science in its modern form but only gradually assimilated it from Europeans during the eighteenth and nineteenth centuries. The people of Japan and continental Asia did, however, have a tradition of careful observation. This tradition led one Japanese farmer in 1874 to study the feeding habits of leafhoppers on rice plants. He doubted that insect bites alone could arrest plant growth and instead proposed that leafhoppers carried a pathogen that they transmitted to rice plants by bite. The pathogen, not leafhoppers, stunted rice plants.

The idea was as novel as it was correct. Leafhoppers carry within their gut Rice Dwarf Virus just as, one may recall, various species of mosquitoes carry the pathogens for malaria and yellow fever. Rice Dwarf Virus remains virulent throughout a leafhopper's life, and female leafhoppers pass the virus to their offspring, multiplying it with each generation. When the leafhopper population is large, as it must have been in Japan in 1733, the virus becomes widespread enough to cause failure of the rice crop even though the leafhopper is an inefficient flier.

The discovery of insect transmission of a pathogen opened a new field in the study of plant diseases by uniting entomology, the study of insects, with plant pathology. Scientists came quickly to understand that control of insect populations is essential if one hopes to minimize crop damage from an insect-borne pathogen. It was no longer enough for the plant pathologist to understand diseases. He now had to understand the feeding and mating habits of insects and their distribution in areas of disease. The need to combat insects accelerated the study and development of insecticides as a branch of applied chemistry in the twentieth century. The study of insect-borne viruses and the development

and use of insecticides would later be crucial in fighting corn diseases in the United States.

Rye Ergotism

The importance of wheat and rice to the sustenance of Europeans and Asians has deflected attention from rye and its diseases. The Germanic tribes that settled the lands that are today France and Germany began growing rye in the second century CE. Wheat always commanded a higher price than rye, making rye bread the staple of the poor until the even cheaper potato spread through Europe between the sixteenth and nineteenth centuries.

The diseases of rye thus afflicted the poor rather than the rich. Particularly serious was ergotism, a fungal disease that fills rye grains with a toxin that in sufficient quantities causes convulsions and death in humans. Unlike most plant diseases, ergot of rye threatens humans by poisoning them rather than by causing famine. The agony of death from ergot toxicity led medieval Europeans to attribute the disease to God's wrath, hence the name "Holy Fire." Medieval chronicles cite the first outbreak of Holy Fire in the eighth century. In 857 CE, thousands died in the Rhine Valley, with smaller outbreaks throughout France and Germany.

One may recall that fungi spread in wet environments. Evidence from dendrology and medieval chronicles suggests that after 1000 CE, Europe's climate turned wet and cool, hastening the spread and severity of ergotism in northern and western Europe. An outbreak in 1039 was the first in a series of virulent outbreaks between the eleventh and eighteenth centuries. Ergotism, along with famine in the early fourteenth century, may explain the high mortality of the Black Death.

Diseases of the Staple Crops Indigenous to the Americas

Like grasses in Europe and Asia, dependence on certain crops can be dangerous—culturally and economically—if they become susceptible to disease.



A drawing from the *Illustrated London News*, 22 December 1849, shows a family affected by famine. The potato blight in the mid-1840s decimated the staple crop of the Irish; one million starved and 1.5 million fled Ireland in the next five years.

Potatoes and corn are two staple crops that have been catastrophically affected.

Late Blight of Potato

The fungus that causes late blight of potato is at the center of a tragedy, the Irish Potato Famine. The tragedy has its roots not in Europe but in the Andes Mountains, where the natives of Peru domesticated the potato. The Spanish conquered Peru in the sixteenth century. In search of gold, they found a more valuable commodity, the potato. From Peru the potato reached Spain by ship around 1570, reaching Ireland before 1650.

By 1800 the Irish, squeezed by their lack of land and high rents, had no choice but to embrace the potato for sustenance because it yielded more food per unit of land than any grain. Reliance on a single

crop is always risky, as Columella had emphasized in the first century. The potato posed risks far greater than the Irish could have imagined. The Spanish had brought little more than a few handfuls of potatoes with them. These potatoes were of the same stock and thus genetically uniform. Because the potato propagates by shoots, new potatoes, barring mutation, are genetic equivalents of the parent potato. With all potatoes near carbon copies of one another, any disease that threatens one potato threatens all.

With the potato vulnerable, catastrophe struck in 1845. Six weeks of rain hastened the spread of the blight fungus across Ireland. The plants died and potatoes rotted in the ground. Blight struck again in 1846. Their staple gone, one million starved and 1.5 million fled Ireland in the next five years.

The tragedy galvanized scientists throughout Europe into action. In 1861 Anton de Bary isolated the culprit, a fungus he named *Phytophthora infestans*, and by spreading it on healthy potato plants demonstrated that it caused blight. The Potato Famine had spurred de Bary's discovery, which marked the beginning of plant pathology as a science.

Corn Diseases

As with potato diseases, scientists know little about corn diseases during the pre-Columbian period. What is clear, however, is that corn, unlike potato, is a cross-pollinating plant that produces plants with genetic diversity. Crossbreeding achieves diversity by reshuffling chromosomes in any plant or animal, including humans. This diversity should minimize the occurrence of epidemics, for within a heterogeneous population some individuals, in this case corn plants, should be resistant to disease.

Corn Viruses

Since the 1920s, corn breeders have reduced the genetic diversity by breeding a small number of high-yielding corn plants of roughly uniform genotypes, making corn vulnerable to epidemics. An outbreak of corn stunt disease along the lower Mississippi valley in 1945, reminiscent of the stunt disease that ravaged rice in Asia, presaged corn's vulnerability to an

epidemic. As is true of rice stunt, a virus causes corn stunt disease and is spread by an insect, in this case a species of aphid.

Worse was to follow. A few stunted corn plants in Portsmouth, Ohio, erupted in an epidemic that engulfed the Ohio and Mississippi valleys in 1963 and 1964, costing farmers who had planted on some lands along these rivers their entire corn crop. The culprit was not the corn stunt virus as scientists first thought but two viruses: Maize Dwarf Mosaic Virus (MDMV) and Maize Chlorotic Dwarf Virus (MCDV). The initial confusion among scientists slowed their response, opening the entire Midwest and South to the danger of an epidemic.

The method of virus transmission saved corn growers. A species each of aphid and leafhopper transmits MDMV and MCDV, respectively, by bite. Both feed primarily on Johnsongrass that grows along the Ohio and Mississippi rivers. Both viruses inhabit Johnsongrass, as the ergot fungus inhabits the barberry bush, without signs of disease. But neither insect is a strong flier, and, unlike the leafhopper that carries Rice Dwarf Virus, neither aphid nor leafhopper retains MDMV and MCDV in virulent form more than forty-five minutes, limiting the range of both viruses.

Once scientists had fingered the aphid, leafhopper, and Johnsongrass as culprits, the U.S. Department of Agriculture launched a campaign to kill aphids and leafhoppers by insecticide and Johnsongrass by herbicide in late 1964. The expenditure of chemicals and money ended the threat of these viruses and led scientists to believe they held the upper hand against corn diseases. Success prevented all but a few scientists from questioning the wisdom of growing genetically uniform corn throughout the Midwest and South.

Southern Corn Leaf Blight

Catastrophe struck in 1970 as Southern Corn Leaf Blight, a fungal disease, swept the United States, destroying 710 million bushels of corn, 15 percent of the corn crop that year. From Texas to Georgia and Florida, farmers lost half their corn crop. These losses cost farmers \$1 billion, and the collapse of farm commodity prices cost investors billions more. In a single summer, one corn fungus threatened financial ruin.

Plant pathologists identified a single female parent of corn (a type of corn that produced no pollen and so was male sterile) as susceptible to Southern Corn Leaf Blight. By dropping it from the corn pedigree, agronomists bred new varieties of corn resistant to South Corn Leaf Blight, but corn remains as genetically uniform today as it was in 1970.

Future Prospects

The imperative to minimize crop losses from diseases will only intensify in the future as the human population grows exponentially. At their origin 130,000 years ago, modern humans cannot have numbered more than a few thousand. Only around 1800 did the human population number 1 billion. The population doubled by 1940 and again by 1975. Today, more than 6 billion humans crowd the earth, and demographers fear our numbers may swell to upwards of 9 billion by 2045.

To avert famine on an unprecedented scale, farmers must triple food production by then. To fall even 2 percent short of the goal, demographers believe, will condemn some 270 million people to starvation. Only with the highest yielding varieties of potatoes, corn, soybeans, wheat, and rice—the sustenance of humanity—can humans hope to avert widespread starvation. But only a small number of varieties of any crop can yield enough food for a hungry world. The future will only exacerbate the problem of genetic homogeneity. Crops may become more rather than less vulnerable to epidemics.

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See also Biological Exchanges; Cereal Grains; Columbian Exchange; Famine; Population and the Environment

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Domestication, Plant and Animal

One of the greatest survival techniques of the human population was the domestication of their environment. Domestication, based on human preference, changed the natural behavior and characteristics of the plants and animals they chose to cultivate. The earliest examples of plant and animal domestication date back hundreds of thousands of years, but the environmental effects of those lifestyle changes are still apparent today.

Domestication of plants and animals is the most fundamental subsistence change in human history. For 100,000 years or more, humans subsisted only by foraging and hunting. Then, near the end of the Pleistocene epoch (1.9 million–10,000 BCE), people in a few regions of Earth independently began to control and breed the species they had hitherto only collected. Between 12,000 and 5000 BCE food producing began to replace food collecting. In the process humanity gained unprecedented control of the natural world, and human populations grew geometrically. But adaptive success was purchased at the price of ecological disruption, new infectious diseases, and accelerated environmental destruction.

The theory that domestication took place in a single limited area and then spread by diffusion throughout the rest of the world has been discredited. It now appears that plant and animal domestication occurred independently and repeatedly within six or more primary “hearths” in southwestern Asia, sub-Saharan Africa, peninsular southeastern Asia, Eastern Asia, Mesoamerica, and Andean South America. Later, more limited domestication took place in secondary

“hearths” such as southeastern North America and southern Asia.

Locating these hearths is easier than determining why such profound adaptive changes occurred within them. The ethnographic (relating to the study of human cultures) record indicates that, as a rule, foraging peoples do not farm unless new circumstances make foraging difficult or impossible. Therefore, the transformations of food-collecting systems into food-producing ones at the end of the Pleistocene epoch may have been caused by worldwide climate changes, mammalian extinctions, sea-level rise, and apparent human population increases that also occurred around that time. Archeologist Mark Cohen (1977) argues that, although prehistoric foraging populations grew throughout the Pleistocene epoch, the pressure of population on food resources became critical only when climatic and environmental changes at the epoch’s close undercut existing foraging economies. As environments became increasingly less productive, population pressure forced foragers to intensify and expand their subsistence activities. According to economic historian Frederic Pryor (1983), such intensification might have included taming animals and tending plants in order to (1) reduce the risks arising from overreliance on increasingly unreliable wild foodstuffs, (2) supplement wild foodstuffs available primarily in one season with cultivated foodstuffs available in another, (3) utilize the labor of marginal members of societies who were unable to participate fully in the primary food-collection activities, or (4) simply add variety to the diet.

Where taming and tending were practiced over the long term on suitably malleable species, it likely

*Corn planted us; tamed cattle made us tame. / Thence hut and citadel
and kingdom came.* • Richard Wilbur (b. 1921)

resulted in domestication. Not all scholars, however, accept the “food crisis theory” and instead favor other causes, including human population growth, differentiation and specialization within human adaptive systems, or creative human manipulation of the environment.

Plant Domestication

Whatever their reasons for doing it, after people began to systematically replant the seeds they gathered, they interposed *human* selection between the organisms and the *natural* selective forces of the environment.

A common procedure at harvest time is for the cultivator to go through his field and carefully select heads to be saved as stock seed for the next planting. The rest of the field is harvested for consumption. In this situation, selection is total. The components of the population that contribute to the next generation are those chosen by the cultivator. The rest are eliminated from the gene pool. (Harlan, De Wet, and Stemler 1976, 8)

As a result, some genetic mutations that would ordinarily be eliminated in the wild come to be favored in the cultivator’s field. In cereal grasses such as wild wheat, barley, oats, or rye, seed-dispersal mechanisms are the first to change under cultivation. Wild grains have excellent means of scattering their ripe seeds because natural selection allows only the genes of plants with efficient dispersal mechanisms to be transmitted to succeeding generations. Although genetic mutations retarding seed dispersal occur in each generation in wild populations, they are fatal to the progeny of the plants that carry them. Yet, the seeds of wild plants with retarded seed-dispersal mechanisms are easier for humans to collect. It is their seeds that are unconsciously selected by collectors. When collectors began to *reseed* their fields, such mutations began to survive. Reseeding may have first been done by collectors seeking to introduce wild cereals into habitats outside their natural range. Whatever the reason, when collectors began saving and planting some of the seeds

they harvested, greater and greater numbers of the dispersal-retarding mutations were concentrated in the grain populations. Generations of unconscious human selection genetically altered the grain and increased its harvestability and, therefore, the productivity per unit of labor invested in its collection.

Harvesters also unconsciously favored uniform rates of seed maturation. Wild cereal seeds do not germinate at the same time but rather tend to sprout throughout the growing season. Some even remain dormant for years. Cultivated cereals are harvested all at once. Individual plants that produce the most seeds at harvest time thus make the greatest contribution to the next generation. In this way, harvesting narrows seed germination ranges and reduces prolonged seed dormancy.

A trend toward larger seeds is also common, although not entirely universal, in cereals under cultivation. The increased size of domesticated seeds is partly due to conscious human selection of the largest seeds for replanting, but larger seeds also result from seedling competition. Seed size is closely related to seedling vigor, and the seedlings that sprout first and grow fastest in the seed bed are the ones most likely to contribute genes to the next generation.

In addition to these unconscious selective behaviors, a variety of others is imposed by the cultivators’ conscious preferences in taste, color, ease of processing, and storage. As a general rule, the part of the plant most used by humans is the part most modified by human selection. Consequently, little resemblance exists between the ears in maize, the tubers in yams, or the pods in peas and the comparable organs in the wild ancestors of these plants. Domesticated plants have been sculpted by human selection. As the process continues through time, plants lose, to a greater or lesser degree, their capacity to survive without direct human intervention in their life cycles.

Domestic wheat, a cereal grass of the genus *Triticum*, has proven to be the most significant cultivated plant in human history. Yet, such minor genetic differences separate wild and domestic wheats that they might readily be included in the same species. This

genetic proximity suggests that the domestication of wheat was both simple and rapid. Recent experiments in the measurement of domestication rates done by archaeologist Gordon Hillman and plant scientist Stuart Davies (1990) indicate that wild einkorn and emmer wheats could have become completely domesticated in twenty to two hundred years. By contrast, the domestication of maize or corn appears to have taken upward of two thousand years.

Maize (*Zea mays* spp.) evolved from the wild grass-like perennial *teosinte* in Mesoamerica and northern South America. The earliest evidence of what is probably maize comes from a pollen profile dating to 5100 BCE. The earliest definite archeological maize remains were recovered at Guilá Naquitz, a dry rock shelter in Oaxaca, Mexico. These tiny cobs date to about 4200 BCE and came from plants in an early stage of domestication. Maize does not appear to have been fully domesticated until about 3000 BCE. From that time forward, it was widely cultivated in North and South America. The slow pace of maize domestication is striking considering that squash (*Cucurbita* spp.), another New World cultigen (an organism of a variety or species for which a wild ancestor is unknown), was first cultivated between 8000 and 6000 BCE.

Although maize produces more foodstuffs per unit of cultivated land than any of the other Native American crops, it has nutritional disadvantages. Most notably, certain of its amino acids are difficult for humans to process. Native Americans learned to enhance the nutritional quality of maize by boiling dried kernels in a lime solution before grinding them into flour. Beans (*Phaseolus* spp.) supply many of the nutrients missing in maize, and Native Americans also learned to grow and consume the two crops together.

Although a vast array of vegetables is grown in eastern Asia, dry and wet rice (*Oryza* spp.) are the focus of cultivation there. In the world at large, only wheat exceeds rice in dietary importance. Although it has been suggested that rice domestication began about 15,000 BCE, the earliest archeological evidence of domesticated rice, recovered at sites from northern Thailand and the well-watered, tropical regions of southern China, is no earlier than about 5500 BCE.

Rice cultivation spread to—or emerged independently in—northern China shortly after this time.

Millet is the common name for a number of drought-resistant cereal grasses widely used as human food, animal forage, and hay. Most species tilled today were apparently domesticated in northern China. As one moves from south to north in China, rainfall levels and mean annual temperatures decline. Not surprisingly, the plants domesticated in northern China contrast markedly with those in southern China. Foxtail (*Setaria italica*), pearl millet (*Pennisetum americanum*), broomcorn millet (*Panicum miliaceum*), and other species were probably domesticated on the upper and middle reaches of the Yellow River. After millet's domestication, various millet races spread throughout semiarid mainland Asia and arrived in Taiwan between 4000 and 2500 BCE.

In tropical and subtropical regions of the world, cultivation traditionally centered on asexually or vegetatively reproduced root crops such as arrowroot (*Maranta* spp.), yams (*Dioscorea* spp.), potatoes (*Solanum tuberosum*), taro (*Colocasia* spp.), cassava or manioc (*Manihot* spp.), and fruit trees such as bananas (*Musa* spp.). Seeds are not necessary for their reproduction. These plants all have the capacity to regenerate tissues and structural parts, either naturally or through human cutting or grafting. By reproducing plants asexually, farmers are able to preserve desired characteristics from generation to generation. Intensive human vegetative husbandry has caused some species to lose their capacity for sexual reproduction altogether. The ease of this manner of horticulture suggests that root crop domestication by vegetative reproduction may have preceded the domestication of cereal grains and other seed crops. Domesticated root crops were present in Panama by 5000 BCE.

Animal Domestication

It is generally assumed that, confronted by humans, wild animals instinctively either fight or flee. But zooarcheologist Charles Reed (1986) contends that most, in fact, are easily tamed. In his view, the major impediment to their domestication was human



hunting. Subsistence systems that minimized hunting were the most likely to have initiated the domestication process; those that specialized in hunting were the least likely to have done so. Recognizing the signs of domestication in skeletal remains from archeological sites is not often easy. Fortunately, in recent years the analysis of DNA has proved a helpful supplement to archeology.

The skeletons of dogs (*Canis familiaris*) dated to about 12,000 BCE and recovered from hunting camps in Palestine constitute the earliest definite archeological evidence of animal domestication of any kind. One can see why dogs were the first to enter the human orbit. Canines are willing scavengers; their wolf ancestors must have skulked around the edges of human camps since time immemorial. Eventually such skulkers would have become semidomesticated. Full domestication—and human recognition of the utility of dogs in the hunt—no doubt came later. But how much later? A recent comparison of wolf and dog DNA sequences suggests the two species diverged more than 100,000 years ago. Few prehistorians are prepared to accept such an early date for the onset of domestication. Genetic analysis of a large sample of contemporary dogs worldwide suggests that the domestic dog is most likely to have originated in eastern Asia fifteen thousand years ago and to have spread from there. Related DNA analysis suggests that New World dogs originated in the Old World and then, in company with peoples crossing the Bering Strait land bridge, entered North America near the end of the Pleistocene epoch.

Ovicapripnes—sheep (*Ovis* spp.) and goats (*Capra* spp.)—were the next animal species to enter the human orbit. Archeological evidence suggests that their domestication probably occurred as early as 9000 BCE in the mountainous regions of eastern Turkey and western Iran. Wild ovicapripnes were “preadapted” for life with humans; easy to tame when young, they can digest a wide range of plants that humans find inedible. More importantly, their alpha (dominant) males neither defend individual territories nor assemble exclusive harems. Ovicapripnes thus can be kept in sociable, mixed-sex herds. Between about 7000 and

6000 BCE domestic goats and sheep became the principal source of meat and hides for the earliest farmers of southwestern Asia. Their dispersal throughout Eurasia and Africa after that time appears to have been rapid.

Domestic pigs are descended from the wild boar (*Sus scrofa*), a species originally found throughout broadleaved, deciduous (leaf-dropping) forests from Eurasia to northern Africa. Although adult boars are dangerous, wild piglets are easily tamed. Archeological evidence suggests that pig domestication began slightly later than ovicapripnes and independently in southwestern and eastern Asia.

The placid domestic cow of modern times, *Bos taurus*, is a descendant of *Bos primigenius*, the Old World wild cow or auroch (plural *aurochsen*). Aurochsen became extinct in the seventeenth century. Their behavior, however, can be inferred from accounts of Spanish longhorn cattle that reverted to the wild in frontier Texas and California. Longhorns were fierce, quick, willing to attack without provocation, and hard to kill. If aurochsen, which often reached 2 meters at the withers, behaved like longhorns, they must have been among the most formidable creatures encountered by prehistoric people. This leaves researchers wondering what possessed human forebears to domesticate them. Perhaps only religious motivation would have induced people to do so. Aurochsen might have been driven into natural enclosures from which individual animals were extracted for sacrifice. Eventually herds thus impounded might have been kept and bred. Whatever the motive for it, cattle domestication began about 7000 BCE in Anatolia, Greece, and parts of southwestern Asia. Significantly, archeological evidence of bull worship at around 6000 BCE has come to light at early sites such as Çatal Hüyük in Turkey and elsewhere in the eastern Mediterranean. Once domesticated, cattle spread quickly. *Bos taurus* bones dating to about 4500 BCE have been recovered in northern Africa at Capeletti. Cattle herders expanded south into the Sahara desert during a moist period there between about 5500 and 2500 BCE. Rock paintings at Tassili in the central Sahara depict long-horned, humpless



cattle of apparent *Bos taurus* stock. The desiccating Sahara pushed herders farther south. Domesticated cattle, presumably taurines, were present in eastern Africa by about 3000 BCE. The expansion of herders throughout sub-Saharan Africa was well underway after that date. However, recent DNA evidence suggests the possibility that native African cattle were already domesticated in sub-Saharan Africa prior to the arrival of taurine stock.

Southern Asia was a third center of independent cattle domestication. It was a primary hearth for the domestication of the water buffalo (*Bubalus bubalis*) and humped Zebu cattle (*Bos indicus*). Zebu cattle from the Indian subcontinent appeared in eastern Africa sometime after about 1000 BCE. Infusion of such stock must have improved African herds. Zebu cattle generally need less water and forage than taurines and gain back weight more quickly after droughts. Crossing Zebu with local breeds may also have produced more disease-resistant cattle capable of greater milk yields.

Cattle were the earliest pack transport and traction animals, but, following their domestication, horses (*Equus caballus*), donkeys (*Equus asinus*), and camels (*Camelus* spp.) performed both tasks more efficiently. Although all three were likely domesticated for their meat, hides, and milk, the subsequent mastery of riding of these species revolutionized human trade, transportation, and warfare. The donkey, apparently the first of the horse family (Equidae) to be domesticated, appears in the archeological record of Mesopotamia about 4000 BCE. DNA analyses of modern horses suggest that their domestication occurred in many centers in Eurasia. Archeological remains indicate that horses were certainly being raised on the steppes north of the Black Sea by 3000 BCE. Archeological evidence of domesticated camels is poor, but these animals are probably present in southwestern Asia by 3000 BCE.

The late Pleistocene extinctions that swept through the New World eliminated wild species, such as horses and giant camels, which might otherwise have been domesticated. The key grazing animal species to survive—pronghorn antelope (*Antilocapra americana*) and American buffalo (*Bison bison*)—make

poor domesticants. Although social like ovicaprines, pronghorns differ from them in the amount of body contact they will tolerate. They are not “contact animals” but rather maintain distance between each other. Adult male pronghorns have a well-developed sense of territory. They strive mightily to keep females inside their territory and other males outside of it. These traits render domesticating pronghorns difficult and herding them nearly impossible. Bison also exhibit behavioral traits that make handling difficult even for contemporary herders. Not surprisingly, both species remained wild into modern times. Thus, the number of potentially domesticable animals in the Americas was limited. Compared to the extraordinary array of New World domesticated plants, the array of domesticated animals was paltry indeed. It included only dogs, Muscovy ducks (*Cairina moschata*), turkeys (*Mele agris gallopavo*), Guinea pigs (*Cavia porcellus*), and various forms of New World camelids (*Lama* spp.) such as the llama, vicuña, guanaco, and alpaca. This dearth of domesticated animals had fatal consequences for New World peoples—a fact dramatically illustrated in Mexico and Peru by the rapid military triumphs of mounted sixteenth-century Spanish conquistadores. But the low number of pre-Columbian domesticated animals had a positive side: it reduced Native American exposure to deadly diseases passed from animals to humans.

Silent Domestication

Domestication of plants and animals in the visible world was accompanied by domestication of organisms in the invisible microbial world. Many of these microbes were benign or useful. Yeast, for example, makes fermentation possible. Systematic fermentation is impractical, even impossible, in the absence of sealable pottery jars. Yeast domestication must therefore have been an unintended consequence of ceramic manufacture. Fermentation processes dependent upon yeast include pickling, cheese making, bread making, culturing, and producing vinegars, sauces (especially fish sauces), and lactic acid fermentations of various vegetables such as sauerkraut. Fermentation

can preserve food, remove toxic components, utilize food wastes, and supply essential secondary food constituents. Fermented sauces and relishes improve flavor or disguise its defects.

The fermentation of wine and beer must not be forgotten. Early wine was made from honey, palm sap, dates, figs, raisins, apples, pomegranates, and numerous other fruits. Beer, fermented chiefly from wheat and barley, made an important contribution to the nutrition of the grain farmers who consumed it. Cereal porridge lacks vitamins of the B-complex. Happily, most beers are rich in B-complex vitamins. But human adaptation proceeds on the mental plane as well as the material. Beer and wine help here, too; English poet A. E. Housman wrote, "And malt does more than Milton can / To justify God's ways to man" (1988).

The achievement of early farmers in harnessing the microbes of fermentation is impressive indeed. Their practical understanding of the ferments is especially remarkable because it was gained by trial and error in a prescientific context. In addition to yeasts and bacteria, early farmers domesticated numerous lower plants such as mushrooms, fungi, and algae. Cultivation of yeasts, bacteria, and lower plants offers three advantages: short production cycles, modest space needs, and low water requirements. Further, the relative simplicity of their husbandry requirements allows the character of the final product to be precisely controlled.

Unfortunately, silent domestication had a more sinister aspect. By living intimately with their domestic animals, humans altered the transmission patterns of existing animal pathogens (agents of disease) and stimulated the evolution of new ones. Humans came to share the diseases of the creatures they exploited. Old World examples include measles, tuberculosis, and smallpox (derived from cattle) and influenza and pertussis (from pigs and perhaps ducks and dogs). There are many others, some of which spill back from domestic animals to wildlife that come in contact with them.

By making life more sedentary, early farming brought people into sustained contact with fecal

wastes, both human and animal. Absent a clear recognition of the relationship between feces and disease, farmers were not overly careful about the disposal of human and animal waste and seemed to have made little systematic effort at preventing their food and water from becoming contaminated by sewage. Such contamination provides ideal environments for the transmission of diseases such as diarrhea (particularly dangerous for small children), typhoid, and cholera. Intestinal parasites such as worms and protozoa also spread readily in this environment.

This brings the discussion once more to beer. To a certain extent, these diseases can be avoided by not drinking the water and making do with beer and wine instead. Alcoholic ferments were thus an important cultural adaptation to the new conditions of disease and health created by the silent domestication processes active in early farming life.

Weeds

Microbes were not the only set of unintended domesticants. Another set, weeds, was found on the margins of the cultivators' fields. *Weed* is a folk, not a scientific, term. It refers to plants that rapidly colonize soils disturbed and stripped of vegetation by fires, landslides, windstorms, floods, and so forth. Before the advent of agriculture, there were relatively few of these plants. However, land clearance for agriculture dramatically expanded the habitat of such pioneers and, eventually, turned them into unintended cultivars (organisms originating and persisting under cultivation) dependent upon human environmental disturbance and subject to human manipulation. In this way, new varieties of weeds were produced as the by-products of cultivation. These new varieties emerged as hybrids when wild and domesticated races of cereals and other plants were grown together in the same fields. Some weed species were ultimately domesticated. Both rye and oats were European weeds that entered the repertoire of Old World domesticates when farmer-colonists began farming the interior of that continent. But most weeds remain semidomesticated pests and bedevil cultivators to this day.

The spread of farming carried these weedy pests into new territories. The best evidence for the arrival of agricultural peoples in northern Europe is the appearance of such characteristic Mediterranean weeds as ribwort plantain (*Plantago lanceolata*), stinging nettle (*Urtica dioica*), and various kinds of sorrels (*Rumex* spp.). The later spread of European agriculture into the New World, Australia, and the islands of the Pacific introduced these Old World weeds with devastating effect.

Human-Caused Environmental Destruction

By late prehistoric times few of the Earth's terrestrial ecosystems had not felt the impacts of humankind. Not all impacts were of the same magnitude, however. Hunting-and-gathering peoples had a comparatively modest effect, whereas farmers radically changed natural conditions wherever they went. By clearing, burning, and killing wild predators and later by plowing and irrigating, they overrode local constraints and created new, relatively homogeneous environments. Agriculture represents an ecological simplification of human subsistence. It narrows human dependence to a limited range of plant and animal species largely controlled by the farmers themselves. When tended by humans, this array of domesticated species can adapt to a wide range of environments. The adaptability of their animals and plants, combined with their efforts at transforming the environment, meant that agriculturalists were less obliged to learn the ins and outs of their new ecologies and cared little for preserving wild food resources. By altering their environment and increasing the size of the human population supported by it, farmers made it difficult for hunting-and-gathering peoples to subsist. Along with agricultural peoples and their animals came deadly zoonoses (diseases communicable from animals to humans). As prehistory drew to a close, continued population growth generated by agriculture stimulated ever-more-intensive forms of cultivation and husbandry such as dairying, wool raising, irrigation agriculture, and its twin, fully nomadic pastoralism.

Inexorably, growth and intensification led to the rise of cities, states, and civilization. From then on, there was no going back.

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See also Agricultural Societies; Cereal Grains; Horses; Sheep and Goats

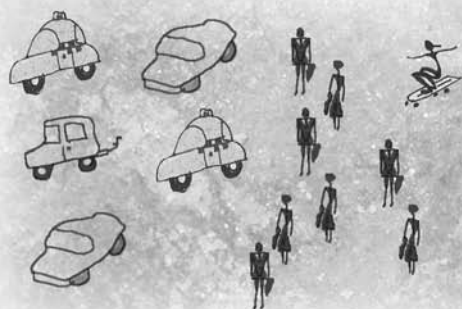
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Drugs, Psychoactive

Trade in drugs began to flourish in the late 1400s, when European coastal cities played a major role in determining whether a drug would become a global commodity. Drugs were ideal money makers, some with addictive effects that ensured constant demand. Taxes placed on such drugs often funded a nation's politics, and revulsion to this eventually led to nineteenth-century prohibitions and regulations.

Psychoactive drugs became global commodities with the expansion of oceanic trade from the late fifteenth century. In many ways the diffusion of drugs resembled that of germs: that which had been confined to one region, continent, or hemisphere spread around the world. The principal difference was that drug production and commerce were deliberate and profit motivated, while the introduction of germs was not. Only from the late nineteenth century onward did political elites reevaluate the lucrative international trade in drugs and begin selectively imposing restrictions.

The most important drug commodities produced and traded in both hemispheres were alcoholic and caffeinated beverages, tobacco, opiates, cannabis, and various coca products. Psychoactive exchanges occurred in both directions, from west to east and east to west. Tobacco, coca, and cacao originated in the New World and spread to the Old. Liquor, wine, opium, and cannabis originated in the Old World and spread to the New. Sugar cane, another important transplant from the Old World, was used to make rum. Sugar also sweetened bitter-tasting psychoactive products, among them chewing tobacco, coffee, tea, chocolate, and even opium.

Not all local or regional drugs became global products. For reasons that ranged from spoilage problems to cultural prejudice against their effects, use of khat, kava, betel, peyote, mescal beans, and many other substances remained confined to one hemisphere or the other. For a drug to become a global commodity, it first had to catch on in one or more of Europe's seafaring imperial nations: Portugal, Spain, the Netherlands, Great Britain, and France. Only their merchants, planters, and seamen had the means to ensure that the drugs they valued became worldwide trade goods and cash crops.

Tobacco as a Model

Tobacco offers the clearest example of European adoption and global dissemination of a novel psychoactive drug. Tobacco use and cultivation had originated in South America and spread northward, reaching the upper Mississippi valley by 160 CE. It also had taken root in the Caribbean, where in 1492 two of Columbus's crew observed Taino Indians smoking tobacco. Later explorers and missionaries often described native smoking rituals. But in Europe, early interest in tobacco centered on its possible medical uses. The Seville physician Nicolas Monardes (1493–1588) recommended that tobacco be applied topically to aches and wounds; swallowed to kill worms; or chewed to alleviate hunger and thirst. Others valued it as an antidote to epidemics. Tobacco was much in demand when plague visited Europe's cities.

Tobacco also caught on among soldiers, sailors, and courtiers, including England's Sir Walter Raleigh (1552–1618). Begun as a pastime and continued as an addiction, nonmedical tobacco use proved

In the course of history many more people have died for their drink and their dope than have died for their religion or their country. • **Aldous Huxley (1894–1963)**



The tobacco plant in flower. Tobacco offers the clearest example of European adoption and global dissemination of a novel psychoactive drug.

controversial. Critics said it sickened and impoverished its enslaved users. The practice nevertheless continued to spread in taverns and brothels, and in distant lands visited by pipe-smoking sailors. Demand grew, and so did profits for cultivators. The Spanish introduced tobacco to the Philippines, where it became a cash crop after 1575. About 1600 sailors and merchants from Fujian Province, in southeastern China, took the plant back with them from the Philippines. Between about 1590 and 1610 the Portuguese introduced tobacco to West Africa, India, Java, Japan, and Iran. Subsequent diffusion from these places made tobacco a truly global crop.

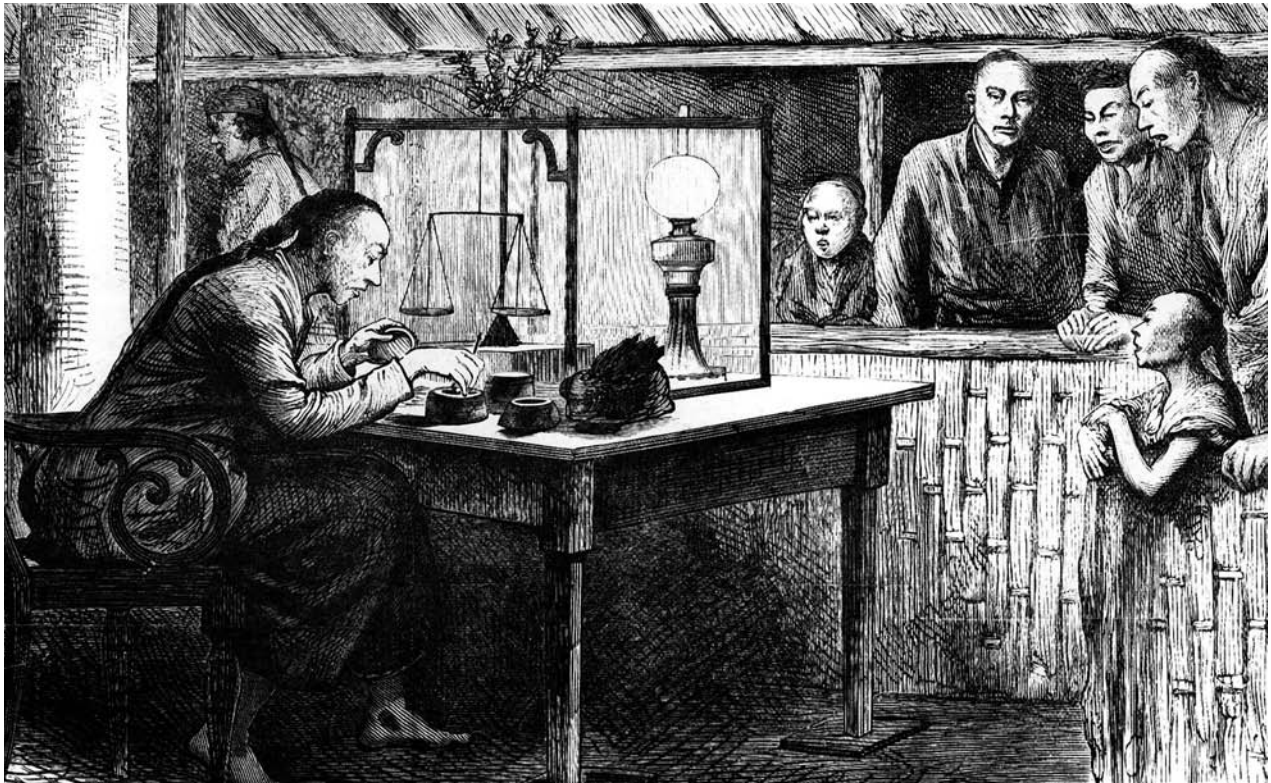
Seventeenth-century clerics, physicians, and monarchs in lands as far separated as Great Britain and

China condemned the nonmedical use of tobacco. But even public executions of recalcitrant smokers failed to check tobacco's progress. By the end of the seventeenth century, prohibition had given way to regulation and taxation, as tobacco settled into a long career as a lucrative nuisance. It became a major source of tax revenue and, for European overseas empires, a mainstay of colonial agriculture, expanding through the African slave trade. The more the American plantations produced, the more Europeans and their reexport customers consumed. As with sugar, plantation agriculture increased supply and drove down the price. Chesapeake tobacco that had sold for as much as sixteen English pennies a pound in the early 1620s was bringing only one penny by 1670. Practically everyone could afford to smoke, chew, or snuff the drug—the method of consumption varying by region, gender, class, and shifting fashion.

Advantages of Drug Commerce

The story of tobacco repeated itself, with variations, for all the major global drugs. When Europeans discovered a novel psychoactive substance (or learned to manufacture one, as in the case of distilled spirits) they always investigated possible medical uses. This aspect of drug dissemination—doctors debating indications, doses, and side effects—seldom caused public alarm. Several therapeutic breakthroughs, such as the 1884 discovery of cocaine's local anesthetic properties, won universal approval. Controversy arose only when a pattern of nonmedical use emerged, as in England's early eighteenth century gin-drinking epidemic, the "luxurious" use of opium by the idle rich, or, in the age of synthetic and semisynthetic drugs, self-intoxication with barbiturates, heroin, and amphetamines.

For most of eighteenth and nineteenth centuries, government officials tolerated drug abuse and poisoning as unfortunate by-products of a lucrative commerce. Drugs were, in many ways, ideal products. Because they were quickly consumed, regular users had to constantly replenish their supplies. Because they caused tolerance—larger and larger doses were



This nineteenth-century drawing titled *Selling the Deadly Drug* depicts Western attitudes toward both opium and China.

necessary to achieve the same effect—sales volume tended to increase over time. And because drugs addicted at least some users, demand was relatively inflexible. In the early days of the 1849 California Gold Rush, tobacco sold for close to its weight in gold. Entrepreneurs rushed supplies from Honolulu and other ports to San Francisco, whose warehouses soon bulged with tobacco.

Alcohol and tobacco were ideal barter goods. Merchants traded them for native labor and for such products as sandalwood, trepang (sea cucumbers), copra, and peltries (furs and skins). The early modern fur trade, a global enterprise that tied Europe's cities to the remotest backwoods of Siberia and the Americas, was in essence also a drug trade, with profits running as high as 400 percent on the watered spirits supplied to natives. Alcohol and tobacco proved just as useful in acquiring African slaves. Between 1700 and 1830 perhaps one in every four slaves imported from Luanda and Benguela to Brazil was paid for with rum. The slave/plantation/drug complex became a sort of economic perpetual-motion machine. Slaves grew tobacco and sugar; sugar was manufactured into rum;

tobacco and rum (as well as coffee and cacao) helped pay for more slaves, who raised more drug crops.

Political elites profited from the growing drug commerce through taxation. Imperial Russia, for example, essentially paid for its military by taxing alcohol. Colonial administrators in Africa and Asia depended on alcohol taxes, often supplemented by opium revenues. They periodically auctioned the exclusive right to sell opium (the "opium farm") to the highest bidder, usually a syndicate of Chinese merchants. During the nineteenth century Singapore derived half its revenue in this manner. The French profited from a similar commerce in Indochina. In 1945, when Ho Chi Minh (1890–1969) officially declared Vietnamese independence, he specified the opium and alcohol traffic as among the many imperialist crimes the French had committed against his people.

Restriction and Prohibition

Revulsion against imperial drug profiteering was one important reason for the worldwide movement to restrict or prohibit drug trafficking. The reformers



COCAINE
TOOTHACHE DROPS
 Instantaneous Cure!
 PRICE 15 CENTS.
 Prepared by the
LLOYD MANUFACTURING CO.
 219 HUDSON AVE., ALBANY, N. Y.
 For sale by all Druggists.
 (Registered March 1885.) See other side.

Universal approval of cocaine's local anesthetic properties warranted its use in soft drinks (Coca-Cola), cough medicine, and the "cocaine toothache drops" in this 1885 advertisement.

initially concentrated on China, where nationalists and Christian missionaries had long been concerned with opium smoking. The problem originated with opium imports from British India in the eighteenth and nineteenth centuries. Though forbidden by Chinese imperial edict, the import trade flourished, and acquired legal status after the British prevailed in the Opium Wars of 1839–1842 and 1856–1858. Chinese domestic production rose even faster than imports; by the early twentieth century the Chinese were growing most of their own opium in vast poppy fields. The traffic threatened the nation's health, morale, and productivity. Chinese officials wanted it stopped. So did Britain's reformist and temperance-minded Liberal government, which came to power in 1906. The following year, 1907, the British began to phase out Indian opium exports, conditional upon the Chinese eliminating domestic production at a similar rate. In 1913 the India-China opium trade officially came to an end. The initial (if imperfect) success of this joint effort set a precedent for supply control, which became the central object of drug diplomacy for the rest of the twentieth century.

By 1912 diplomats from Britain, the United States, and other nations had hammered out the Hague Opium Convention, a treaty aimed at limiting the manufacture and consumption of opium and coca-based drugs to the amount required for medical purposes. At first Germany, whose pharmaceutical industry could produce large amounts of narcotics, put off signing the agreement. But, after defeat in World

War I (1914–1918), Germany and its ally Turkey, a leading opium producer, were required to ratify the Hague Convention as part of the peace process. Over the next half century diplomats and drug-control bureaucrats negotiated further amendments and treaties, the upshot of which was tighter narcotic production and export regulations. The 1971 Psychotropic Substances Convention brought several new categories of drugs, including hallucinogens, amphetamines, and barbiturates, into the international control regime.

None of this diplomacy ended international drug trafficking, though it did reduce its volume and alter its character. Criminal syndicates and guerrilla armies played an increasingly important role in the clandestine manufacture and illegal distribution of regulated drugs. Illicit trafficking became concentrated in chaotic or weakly governed regions, such as China between the world wars or Colombia in the late twentieth century. Protracted civil war was good for the illicit drug business. Contending factions knew they could acquire cash for weapons by protecting local growers and smugglers, and appropriating a share of their profits.

The international movement to rein in the narcotic traffic was part of a larger campaign against the abuse of psychoactive substances. By the late nineteenth and early twentieth centuries the world was awash with manufactured drugs, including cheap spirits and mass-produced cigarettes. A growing body of medical evidence testified to the toxic effects of these substances, both for their users and for children exposed

in the womb. Urbanization and industrialization had made intoxication more wasteful and dangerous. No one wanted drunken operators around heavy machinery, or behind the wheels of the growing fleet of motor vehicles. The new industrial realities also gave rise to a cosmopolitan progressivism, a conviction that governments should restrain economic activity that generated inordinate social costs. To many progressive reformers, poisoning people for profit fell into the same category as rapacious monopoly, unrestrained industrial pollution, and adulterated food. All merited government suppression.

What made drug suppression tricky was that exceptions had to be made for legitimate medical use. Even in the United States during Prohibition (1920–1933), medicinal alcohol was exempted and widely available through prescription. By the last third of the twentieth century the problem of medical exemption was commonly resolved by a system of “scheduling.” That meant sorting drugs into legal categories according to their medical benefits, toxicity, and addiction potential. The most restrictive category, which included hallucinogens such as LSD or (in some nations) cannabis, amounted to prohibition. Other categories ranged from tight controls on manufacturing and distribution for drugs like methadone, a synthetic opiate, down to simple prescription requirements for drugs of lesser abuse potential. Unscheduled drugs such as caffeinated beverages, tobacco, and alcohol were regulated, if at all, through tax policy and restrictions on advertising or sales to minors.

The Double Standard

The most anomalous feature of the modern control system was that it privileged tobacco and, at least outside of Islamic lands, alcohol, despite the fact that tobacco and alcohol were as harmful as many of the drugs subject to stricter controls. As lung tumors became the world’s most common form of cancer, critics complained that it made no sense to outlaw marijuana while permitting worldwide sales to pass, in 2000, a record 15 billion cigarettes a day. In fact, given tobacco’s role as a “gateway” drug (those who smoked

tobacco were far more likely to experiment with other drugs), there wouldn’t have been as much marijuana use if cigarettes hadn’t been so readily available.

Though irrational in public health terms, tobacco and alcohol’s underregulation made sense in economic and sociological terms. The smaller and more deviant a drug-using population, the easier it was to impose and maintain restrictive legislation. The larger and less deviant, the harder it was. By the early twentieth century, nonmedical cocaine use was widely associated with prostitutes and, in North America, with renegade black men. The places that grew most of the world’s coca, Peru and Java, were poor and politically inconsequential. That simplified the task of international control. The same couldn’t be said of alcohol production, then an important industry on every continent except Antarctica. In the early twentieth century, one in every eight Frenchmen derived income from some aspect of the alcohol business. The scale of potential opposition was one important reason why politicians generally preferred alcohol taxation to stricter forms of control. That most of these politicians enjoyed alcohol themselves was another factor, elites being disinclined to outlaw their own vices.

The popularity of cigarettes conferred similar advantages on tobacco companies, at least until the late twentieth century, when the educated classes in Western societies began shunning their products. The tobacco companies’ wealth nevertheless permitted them to pursue a sophisticated strategy to save their business in the face of damning medical evidence. They hired public relations experts to obfuscate the health issue; deployed lobbyists to block, delay, or water down antismoking measures; advertised cigarettes as cool products to attract new teenage smokers; and aggressively expanded in developing nations, many of which lacked tobacco marketing regulations. In 1999 and 2000, World Health Organization (WHO) investigators found that 11 percent of Latin American and Caribbean school children between the ages of thirteen and fifteen had been offered free cigarettes by tobacco industry representatives. In Russia the figure was 17 percent, in Jordan 25 percent. Outrage

The voodoo priest and all his powders were as nothing compared to espresso, cappuccino, and mocha, which are stronger than all the religions of the world combined, and perhaps stronger than the human soul itself. • Mark Helprin (b. 1947)

at such tactics, coupled with alarm over the health consequences of the cigarette pandemic, prompted an international anti-tobacco movement, not unlike the narcotic control campaign of a century before. To date the principal diplomatic achievement of this movement has been the WHO's 2003 Framework Convention on Tobacco Control. This agreement commits signatories to such goals as advertising restrictions, smoke-free environments, and state-funded treatment for those trying to quit—an ambitious agenda in a world of 1.3 billion smokers.

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See also Alcoholic Beverages; Coffee; Tobacco

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The writings of W. E. B. Du Bois, including the first study of urban blacks in the United States, had a huge impact on African American communities during the 1900s. Du Bois believed in Pan-Africanism and played a major role in founding the NAACP. Although he left the United States for political reasons, he remained (and still does nearly fifty years after his death) an influential presence.

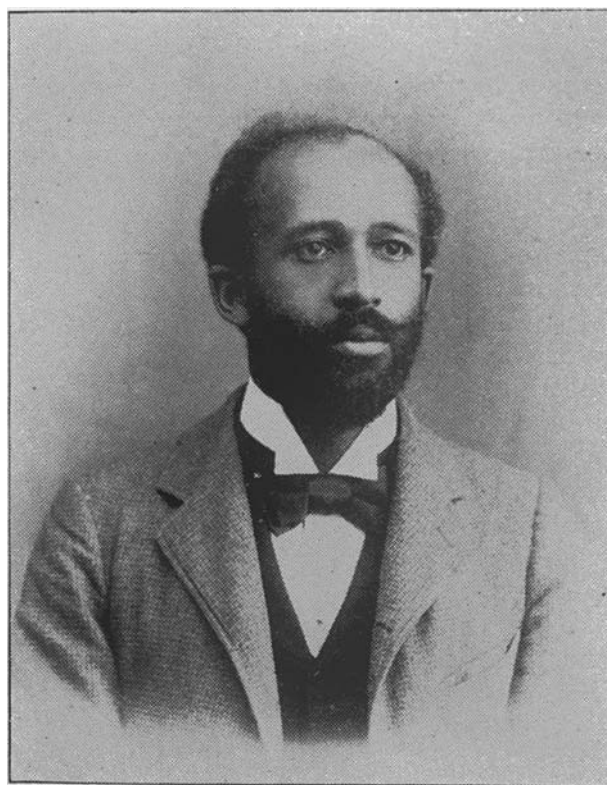
William Edward Burghardt Du Bois was one of the most important African American leaders in the United States in the first half of the twentieth century. He made significant contributions as a journalist, sociologist, historian, novelist, pamphleteer, civil rights leader, and teacher. Among his many publications are sociological studies as well as studies of the slave trade (1896), John Brown (1909), and Reconstruction (1935).

Du Bois was born on 23 February 1868, in Great Barrington, Massachusetts. In 1884, he graduated from Great Barrington High School as valedictorian of his class. In 1888, Du Bois graduated from Fisk College in Nashville, Tennessee. It was while in Tennessee that Du Bois first experienced overt racial discrimination. Du Bois earned a second bachelor's degree (1890) and a master of arts degree (1892) from Harvard University. From 1892 to 1893, he studied at the University of Berlin, where he was greatly influenced by the socialist scholar Eduard Bernstein (1850–1932). Du Bois remained sympathetic to Marxism for the rest of his life.

In 1895, W. E. B. Du Bois was awarded the first doctorate to be granted to an African American by Harvard. His doctoral dissertation, *The Suppression*

of the African Slave Trade to the United States of America, 1638–1870, was published in 1896. It constitutes a pioneering application of economic analysis to history. Previous studies of slavery had given little attention to slavery's indissoluble connection to the cotton market.

After receiving his doctorate from Harvard, Du Bois served as a professor at Wilberforce University (1894–1896) and as an assistant instructor of



Photograph of W. E. B. Du Bois, the U.S. sociologist and writer, taken in Atlanta, Georgia, in 1900. New York Public Library.



Du Bois in the office of *The Crisis*. His editorials brought about changes in public policy, including the creation of a federal work plan to benefit African American veterans.

sociology at the University of Pennsylvania (1896–1897). But he is best known for his long association with Atlanta University, where he was a professor of economics and history from 1897 to 1910 and served as the chair of the sociology department from 1934 to 1944.

Between 1897 and 1914, Du Bois completed multiple sociological investigations of African Americans, including *The Philadelphia Negro: A Social Study* (1899), which is the first case study of an urban African American community ever conducted in the United States.

Du Bois's views on civil rights clashed with those of another prominent African American leader, Booker T. Washington (1856–1915). Washington urged African Americans to accept discrimination for the time being and encouraged them to elevate themselves through hard work. At first, Du Bois agreed with Washington; he applauded the famous 1895 Atlanta speech in which Washington argued for “segregated equality.” But changes within African American communities militated against Washington's position as African American migration accelerated the growth of black ghettos. Du Bois addressed Washington's position in a chapter of his most widely known book, *The Souls of Black Folk* (1903), cogently arguing that

Washington's strategy could serve only to perpetuate the further oppression of African Americans.

The Souls of Black Folk also gave first expression to Du Bois's most abiding theoretical contribution to African American studies. He underscored the characteristic dualism of African Americans: “One ever feels his ‘two-ness’—an American, a Negro; two souls, two thoughts, two irreconcilable strivings; two warring ideals in one dark body, whose dogged strength alone keeps it from being torn asunder” (1996, 58).

In 1905, Du Bois founded the Niagara Movement. This small organization, which met annually until 1909, was seriously weakened by internal squabbles. Nevertheless, it is significant as the forerunner of the National Association for the Advancement of Colored People (NAACP).

Du Bois played a major role in founding the NAACP in 1909 and became the association's director of research. As founding editor of its magazine *The Crisis*, he wrote editorials that resulted in a number of changes to public policy: the admission of African Americans to officers' training schools, establishment of legal procedures against those accused of lynching African Americans, and the creation of a federal work plan to benefit African American veterans.

Herein lie buried many things which if read with patience may show the strange meaning of being black here in the dawning of the Twentieth Century. This meaning is not without interest to you, Gentle Reader; for the problem of the Twentieth Century is the problem of the color-line. • **W. E. B. Du Bois (1868–1963)**

Du Bois's nationalism took a variety of forms. He was a strong advocate of Pan-Africanism—a political ideology based on the belief that all people of African descent had common interests and should work together in a common struggle for freedom. In 1900, Du Bois served as an organizer of the first Pan-African Conference, which was held in London. He was also the architect of four subsequent congresses held between 1919 and 1927.

In addition, Du Bois was an advocate of economic nationalism. He asserted that African Americans needed to develop a separate “group economy” of producers and consumers. Others within the NAACP did not see it this way. Du Bois's ideas brought about an intense ideological split within the organization, and in 1934 Du Bois resigned from the NAACP.

After leaving the NAACP, Du Bois returned to Atlanta University, where he devoted the next ten years of his life to teaching and research. In 1940, he founded the magazine *Phylon: The Atlanta University's Review of Race and Culture*. He also produced two major books: *Black Reconstruction* (1935) and *Dusk of Dawn* (1940). *Black Reconstruction* provided an innovative and exhaustive treatment of a pivotal period in African American history. *Dusk of Dawn* was autobiographical and recounted Du Bois's role in the civil rights struggle.

Following a decade of teaching at Atlanta University, Du Bois returned to the NAACP, where he held a research position from 1944 to 1948, but this affiliation ended in yet another bitter debate.

In the 1890s, Du Bois had been an outspoken supporter of capitalism, publicly urging African Americans to support African American businesses. By 1905, however, he became thoroughly convinced of the advantages of socialism. He joined the Socialist Party in 1912 and remained sympathetic to socialist ideals for the rest of his life.

After 1948, Du Bois moved further leftward politically. He began to identify with pro-Russian causes and was indicted in 1951 as an “unregistered agent for a foreign power.” Although acquitted of all charges, Du Bois became increasingly disillusioned with the United States. In 1962, he renounced his American citizenship and moved to Ghana, where he was to serve as editor in chief of the *Encyclopedia Africana*. The encyclopedia was never completed.

W. E. B. Du Bois died on 27 August 1963, in Accra, Ghana. The majority of his personal papers are archived at the University of Massachusetts at Amherst.

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See also Pan-Africanism; Race and Racism

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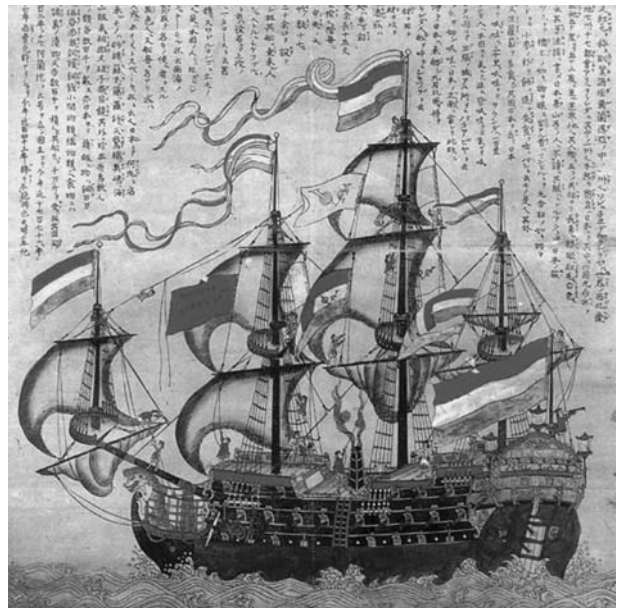
Dutch East India Company

The Dutch East India Company (VOC), founded in 1602, consisted of sixty companies aimed at monopolizing the spice trade, expanding Dutch colonial influence, and reducing competition from other commercial powers. The VOC did not merely monopolize world trade; it acted as the sole representative of Dutch political power in the East Indies for nearly two hundred years.

Historians have identified the Dutch Republic as the first modern economy, while the Dutch East India Company (or VOC, the acronym for *Verenigde Oost-Indische Compagnie*) has, deservedly or not, been styled the first modern corporation. In the context of the Eighty Years' War (1568–1648), the general expansion of trade and shipping, and, to a lesser extent, the missionary impulse of Calvinism, Dutch overseas expansion was spurred by a powerful combination of politico-economic, commercial, and religious motivations. The first shipping to Asia in 1595 was followed by the creation of “pre-companies” in various cities of the northern Netherlands trading to the East. To curb internal competition and forge a military-diplomatic tool against the Spanish and Portuguese colonial possessions, these pre-companies were merged into a United East India Company. On 20 March 1602, the States General issued a charter, which would be continuously renewed until 31 December 1799, when the possessions of the VOC were taken over by the Dutch government.

In the “age of mercantilism,” the VOC was given a monopoly on all shipping from Africa’s Cape of Good Hope through the Strait of Magellan at the tip of South America, effectively covering the entire

Indian Ocean basin. The board of directors, or *Gentlemen Seventeen*, consisted of eight representatives from Amsterdam, four from Zeeland (Middelburg), one from each of the four smaller chambers (Rotterdam, Delft, Hoorn, and Enkhuizen), and a final member selected by Zeeland or one of the smaller chambers. The charter also granted the company delegated sovereign powers, including the right to appoint governors, build forts, maintain armies and fleets, and conclude treaties with or wage war against indigenous rulers.



Merchant Ship of the Dutch East India Company (1782). Woodblock print of the Nagasaki School, published by Toshimaya. The Dutch East India Company was one of the earliest European companies to trade with Japan.



The emblem of the Dutch East India Company, possibly the first corporate logo, was used on company-issued items such as cannons, coins, and flags.

A central Asian rendezvous and trade emporium was established at Jakarta, renamed Batavia, on the island of Java in 1619. Batavia was the seat of the High Government, the Governor General, and the Council of the Indies, coordinating activities of the company settlements in the East. The VOC divided its trading operations in Asia into three categories, with their relative significance indicated by their respective designation. The core consisted of spice-producing areas or trade emporia, such as the “governments” of Ambon, Banda, Cape of Good Hope, Coromandel, Makassar, Northeast Coast of Java, Taiwan, and Ternate, where the company enjoyed trade as an outcome of its own conquest. A second category contained those regions, such as the “commandments” of Malabar and the West Coast of Sumatra, where the company conducted trade through exclusive contracts. The third category consisted of economically important establishments under a director, including Bengal, Surat, and Persia, parts of powerful indigenous realms such as Mughal India (1526–1857) or Safavid Persia (1501–1722/1736), and peripheral establishments under a resident, head, or chief, such as Banjarmasin, Ligor, or Tonkin, where trade was conducted alongside other merchants.

Before the Industrial Revolution, trade between Europe and Asia was characterized by a structural trade

imbalance, following a “bullion for goods” model. (See table 1.) Precious metals served as the lubricant of the early-modern world economy with important political, socioeconomic, demographic, and cultural ramifications, interacting with regional and local processes of state formation, social stratification, economic development, population movements, and intellectual-religious changes.

The economic history of the VOC can be divided into three distinct periods: a monopolistic phase (1600–1680), determined by the acquisition of monopolistic or monopsonistic (market situation in which the product or service of several sellers is sought by only one buyer) positions in various commodities (pepper and fine spices) and markets (Japan); a competitive phase (1680–1740), dominated by less profitable, nontraditional products, such as textiles, coffee, and tea, available on the relatively open markets of India, Arabia, and China; and disengagement and decline (1740–1800), marked by the commencement of the era of Franco-British global wars and a distinct decline in terms of the volume of Dutch trade and shipping. (See tables 2 and 3.)



The Dutch claim in North America began in 1609, when the Britain’s Henry Hudson, in service to the Dutch East India Company, entered New York Bay and ascended the river that now bears his name.

Table 1.

Sources of Precious Metals Available to the Dutch East India Company in Asia from 1602 to 1795

(ANNUAL AVERAGES, IN THOUSANDS OF GUILDERS)						
Years	Shipped from Europe	Assignaties*	From Japan	From Persia	From Gujarat	Total
1602–1609	521	N.A.	0	0	0	521
1610–1619	1,019	N.A.	0	0	0	1,019
1620–1629	1,236	N.A.	395	0	0	1,635
1630–1639	850	N.A.	2,338	0	0	3,188
1640–1649	920	377	1,519	427	0	3,243
1650–1659	840	451	1,315	661	120	3,387
1660–1669	1,210	249	1,455	400–700	211	3,400–3,800
1670–1679	1,130	430	1,154	400–700	637	3,700–4,000
1680–1689	1,972	802	298	400–700	358	3,800–4,100
1690–1699	2,861	756	229	400–700	170	4,400–4,700
1700–1709	3,928	639	0	c. 600	N.A.	5,100–5,200
1710–1719	3,883	1,122	0	>300	N.A.	5,300–5,400
1720–1729	6,603	796	0	>300	N.A.	7,700–7,800
1730–1739	4,012	1,680	0	N.A.	N.A.	N.A.
1740–1749	3,827	1,390	0	N.A.	N.A.	N.A.
1750–1759	5,839	2,360	0	N.A.	N.A.	N.A.
1760–1769	5,354	3,790	0	0	N.A.	9,200
1770–1779	4,831	3,590	0	0	N.A.	8,400
1780–1789	4,789	4,000	0	0	N.A.	8,800
1790–1795	1,697	1,340	0	0	N.A.	3,100

*Assignaties were bills of exchange issued in Asia upon deposit of gold or silver coin, payable at company offices in the Dutch Republic.

Sources: De Vries (2003, 76); (Data on Europe) Bruijn, Gaastra, and Schöffer (1987, Vol. 1, 187); (Assignaties) Gaastra (1976, 249–272); Nachod (1987, ccvii–ccviii); Glamann (1981, 58); (Data on Persia) Gaastra (1983, 474–475); (Data on Gujarat) Prakash (1998, 185).

Table 2.

Homeward Cargoes in the Euro-Asian Trade: Analysis of Imports and Sales of Various Commodities at the Amsterdam Chamber in Selected Triennial Periods

(INVOICE VALUE, IN PERCENTAGES)					
	1648–50	1668–70	1698–1700	1738–40	1778–80
<i>Fine spices and pepper</i>	59.3	57.4	38.1	35.0	35.4
<i>Textiles and raw silk</i>	17.5	23.8	43.4	28.3	32.7
<i>Tea and coffee</i>	0	0	4.1	24.9	22.9
<i>Sugar</i>	8.8	2.0	0.2	3.0	0.6
<i>Drugs, perfumery, dye stuffs</i>	7.3	5.9	6.6	2.7	2.3
<i>Saltpeter</i>	4.3	7.6	4.0	3.6	2.8
<i>Metals</i>	0.7	3.0	2.9	0.6	1.4
<i>Sundries</i>	2.1	0.3	0.7	1.9	1.9
<i>Total</i>	100.0	100.0	100.0	100.0	100.0

Sources: Bruijn, Gaastra, and Schöffer (1987, Vol. 1, 192); Glamann (1981, 12–14, 269–278).

Historians have pointed to a number of factors contributing to the eventual demise of the company. Previous scholarship criticized nontransparent

bookkeeping practices, the narrow financial basis of the VOC and the resulting dependency on outside capital, failing entrepreneurship and lesser quality of

**Table 3.**

Financial Results (Expenditures and Sales Revenues) of the Dutch East India Company from 1640 to 1795

Years	(IN MILLIONS OF GUILDERS)		Years	(IN MILLIONS OF GUILDERS)	
	Expenditures	Sale revenues		Expenditures	Sale revenues
1640–1650	42.7	78.4	1720–1730	172.9	185.6
1650–1660	71.1	84.2	1730–1740	159.0	167.0
1660–1670	80.4	92.3	1740–1750	148.7	159.7
1670–1680	77.0	91.3	1750–1760	184.9	188.0
1680–1690	87.6	103.4	1760–1770	198.9	213.6
1690–1700	106.9	127.2	1770–1780	186.5	199.6
1700–1710	122.6	139.5	1780–1790	212.3	145.9
1710–1720	135.2	163.7	1790–1795	86.7	61.2

Sources: Gaastra (2003, 148); De Korte (2000, Appendix 1).

company servants, lack of coordination between the various levels of administration, and increasing corruption among VOC officials in Asia. More recently, however, scholars have stressed changing consumption patterns for Asian products in Europe, declining profits from inter-Asiatic trade partly related to the decline of the Mughals (after 1707), the fall of the Safavids (1722), the increasingly restrictive policies of Tokugawa Japan after 1685, and the disruptions caused by the Fourth Anglo-Dutch War (1780–1784). Similar to the English East India Company some fifty years later, the VOC fell victim to the ongoing processes of territorialization, especially on Ceylon and Java, and subsequent rising administrative overhead costs, along with the growing competition of British country traders. In the nineteenth century merchant capitalism and chartered companies were superseded by the overseas projection of industrial capitalism and the nation-state.

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See also Dutch Empire; Mercantilism; Spices

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Dutch Empire

In 1602 the founding of the Dutch East India Company, which became the largest company in the world at the time, literally created an empire. The empire focused mostly on trade, however, and less on colonization; many Dutch colonial possessions fell to the British in the eighteenth and nineteenth centuries. Rebellion from Japanese-occupied Dutch East Indies during World War II ultimately brought the empire to its end.

Toward the end of the sixteenth century, Dutch ships started to explore the waters beyond Europe. Because of their rebellion against their Habsburg rulers, the Dutch no longer were able to operate as traders in the Portuguese and Spanish overseas empires or obtain non-European products in the Habsburg-controlled Iberian ports. In order to reduce the risks of conducting trade in Asia, the United East India Company (Vereenigde Oost-Indische Compagnie or VOC) was founded in 1602.

United East India Company (VOC)

The VOC was the first commercial venture in the world financed by anonymous shareholders with the aim of conducting business over a lengthy period of time, not just financing one trip or conducting business for one year. Within six months about 6 million guilders were collected. The company was made up of six local chambers, and according to its share in the capital outlay, each chamber was allowed to send representatives to the seventeen-member board of directors. The company received a monopoly from the government for trade and the right to declare war

and conclude treaties with individuals and states in the whole of Asia.

During the first two decades of its existence, the VOC needed government subsidies to stay afloat, but after 1620 its activities were increasingly more profitable. Trading between the various regions in Asia accounted for most of these profits. In 1619 the city of Batavia (now Jakarta) was founded as the pivot in the trade between the Dutch Republic and its trading partners in Asia. The governor general in Batavia concluded treaties with local rulers for the exclusive delivery of spices such as pepper, nutmeg, cinnamon, and cloves. In addition the company traded in opium, Chinese porcelain, tea, silk, and Indian cotton cloths. In order to obtain these goods, the company sent large amounts of cash to Asia.

Over time the VOC grew to become the largest company in the world, employing more than 40,000 persons at the height of its existence. Yearly, more than sixty East Indians left the Netherlands for a year-long journey to Batavia, using the Dutch colony at the Cape of Good Hope as a stopover. During the course of the eighteenth century, however, competition from the British East India Company, the French, and even the Danes took business away from the VOC. In order to keep its shareholders and bondholders happy, the company started to borrow money in order to pay dividends. In spite of regulations, most of the company's employees in Asia conducted trade on their own behalf, which was also detrimental to the company's well-being, forcing it into bankruptcy. In 1799 the Dutch state dissolved the VOC and assumed the sovereignty over the company's possessions in Asia and at the Cape of Good Hope.

The popular view that free trade is all very well so long as all nations are free-traders, but that when other nations erect tariffs we must erect tariffs too, is countered by the argument that it would be just as sensible to drop rocks into our own harbors because other nations have rocky coasts. • **Joan Robinson (1903–1983)**

West India Company (WIC)

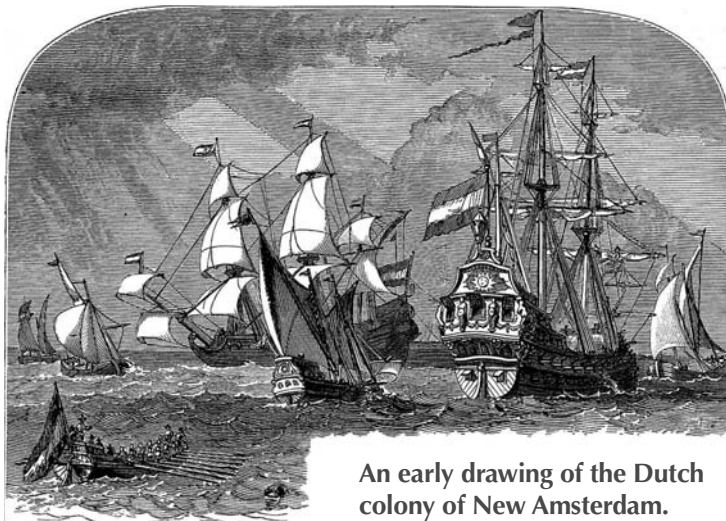
The early success of the Dutch East India Company was a strong stimulus to create a similar company for the trade and colonization in the Atlantic. In 1621 the West India Company (The West-Indische Compagnie or WIC) was founded. In contrast to the VOC, the WIC took a long time to collect sufficient operating capital. Most merchants did not invest as they felt that the company would be used by the Dutch state as an instrument of maritime warfare against Spain rather than as a profit-seeking venture. Like the VOC, the WIC was organized in chambers, but in the course of the company's history, its policies became more and more fragmented. The Zeeland chamber began to administer some parts of Guiana exclusively, whereas the Amsterdam chamber concentrated on New Netherlands in North America and the Dutch Antilles. In 1628 all chambers were allotted exclusive trading rights in separate areas along the coast of West Africa. This process of fragmentation was strengthened by the issuing of private freehold estates, called *patroonships*, in New Netherlands and in the Caribbean. A consortium, in which the WIC participated as only one of the shareholders, owned the Caribbean plantation colony of Suriname, conquered in 1667. Private merchants who received land grants within the company's territory were usually connected to, or even directors of, one specific WIC chamber.

At the beginning the WIC played an important role in the Dutch maritime trade. Around 1650, when the company still governed part of Brazil and New Netherlands, the total value of the imports into the Dutch Republic amounted to about 60 million guilders, of which nearly 18 million came from Brazil, Africa, the Caribbean, and North America. During the second half of the seventeenth century, the loss of Brazil and New Netherlands, the application of the Navigation Acts in the British colonies and similar protectionist legislation in the French colonies, and the declining opportunities for Dutch privateers reduced the volume and value of the Dutch Atlantic trade. Around 1650, estimates put the yearly number of Dutch ships operating in the Atlantic at around 250. During the eighteenth century that average had declined to about 140. In addition to the triangular slave trade from Europe to west Africa, then on to the New World and back again to Europe, the WIC ships traded in American and African produce such as Brazilian wood, hides, ivory, sugar, tobacco, and cacao.

The WIC concentrated on trade, not colonization. The total number of Europeans in the colonies and trading establishments of the company never surpassed 20,000 at any one time. That suggests that it must have been more profitable to send young men on a temporary basis to tropical Asia than to settle them as colonists in New Netherlands and the Cape colony.

The Dutch West India Company was not interested in exporting the Dutch language or the official brand of Dutch Protestantism. The governors of the various Dutch colonies and trading forts were well aware of the fact that only religious and cultural tolerance could prevent internal strife among the many non-Dutch nationals.

After 1734 the WIC became a "body without a soul." Private consortia governed the two most important Dutch plantation colonies, Suriname and Berbice (in present-day Guyana). The company was left with the administration of the Dutch possessions on the African coast, the Dutch



An early drawing of the Dutch colony of New Amsterdam.

A fleet of Dutch merchant ships in the sixteenth century. The empire focused more on trade than on colonization.



Antilles, and two small plantation colonies on the South American mainland, Essequibo and Demerara. Its top-heavy apparatus at home did not change: the national and local directorships had become part of the job circuit within the Dutch oligarchy. Private Dutch traders did increase the volume of the trade in slaves and tropical cash crops, but the Dutch were unable to profit from the explosive growth of the Atlantic economy after the War of American Independence. In 1791 the second WIC was abolished, and the Dutch Republic itself became a colonial power.

The Netherlands as a Colonial Power

During the period 1795–1816, virtually all the Dutch colonial possessions fell into the hands of the British. Eventually, the Dutch East Indies, Suriname, and the Dutch Antilles were handed back, but not the Cape colony, Ceylon, Demerara, Essequibo, and Berbice. In 1870 Britain bought the Dutch forts on the Gold Coast.

In the East the Dutch colonial government could not generate sufficient income to pay for the administration and defense. In order to increase the colonial revenue, a system of forced cropping was introduced in 1830, by which the Indonesian villagers would cultivate a part of their lands with coffee and sugar to be delivered to the colonial government as a tax in kind. This system was a financial success, and soon the island of Java produced so much revenue that the major part of this income could be transferred to the treasury in the Netherlands. In 1860 both the cultivation system in

the East as well as slavery in the West were abolished as the prevailing liberal ideology in the Netherlands had become opposed to forced or slave labor. After 1870 investment and private land ownership by European entrepreneurs increased, and Dutch control was extended to all of the islands of the Indonesian archipelago. In Aceh (North Sumatra) the Dutch met with fierce resistance, and it was not until 1913 that the region was brought fully under Dutch control.

In the Dutch Caribbean, slavery was not abolished until 1863. The belated emancipation of 40,000 colonial slaves was due to the fact that there was no strong abolitionist lobby in the Netherlands and that until 1860 the liberal ideology in economic matters did not have many adherents, nor was tax money readily available to compensate the slave owners. It was the revenue derived from the cultivation system in the Dutch East Indies that tipped the balance. After the ending of slavery, the Dutch instituted a ten-year period of apprenticeship (1863–1873) and then started to import 30,000 indentured laborers from British India (1873–1916) and a similar number from Java (1890–1939). As the Dutch Antilles housed no large-scale plantations, their freedmen were exempt from apprenticeship, and none of the islands imported indentured labor. At the beginning of the twentieth century, the economy of the islands received a strong boost from the construction of oil refineries. Similarly, Suriname experienced economic growth by allowing the American-owned SURALCO Company to mine its aluminum ore. During World War II, the

aluminum production in Suriname and the oil refineries on the Dutch Antilles were of such importance to the allied war effort that the United States and the United Kingdom took over the defense of these colonies with the consent of the London-based Dutch government in exile.

End of the “Empire”

In 1942 the Japanese occupied the Dutch East Indies and collaborated with those Indonesian politicians who were in favor of independence. Its 40,000 Dutch colonists were put in camps. After the Japanese had surrendered in 1945, the Indonesians promulgated the independent Republic of Indonesia, while the Dutch tried to restore their prewar colonial rule. In spite of severe shortages at home caused by the ravages of the German occupation, the Dutch drafted a considerable army to fight the Indonesian Republic. However, the U.S. government was in favor of Indonesian independence and threatened to cut off Marshall Plan aid to the Netherlands. The Dutch gave up their efforts to restore colonial rule, and on 17 August 1949, the Republic of Indonesia, with the exception of the eastern part of New Guinea, which was not transferred to Indonesia until 1963, became a sovereign state.

In the wake of the achievement of independence by Indonesia, Suriname and Dutch Antilles were given self-government in 1948. In 1954 a Dutch Commonwealth Statute stipulated that the Netherlands, the six Dutch Antilles (Curaçao, Aruba, Bonaire, Saint Martin, Saint Eustatius, and Saba), and Suriname would be equal partners, have internal self-government, and share their foreign relations and defense. Over time the disadvantages of this arrangement increased as about 30 percent of the population of the Dutch West Indies moved to the Netherlands, while at the same time the Dutch government spent large amounts in aid subsidizing the budget of these former colonies. In 1975 the Dutch succeeded in granting independence to Suriname by providing the 400,000 inhabitants of the former colony with 4 billion guilders in aid. The six Dutch Antillean islands refused a similar offer. The Dutch

Antilles prefer to continue their membership in the Kingdom of the Netherlands, but some of the islands prefer to have a direct link with The Hague rather than an indirect one through the common inter-island council in Willemstad on Curaçao. The Netherlands cannot change its relationship with the Dutch Antilles, such as instituting a barrier for immigrants, as the Commonwealth Statute demands that all constituent members of the Dutch Kingdom agree to its annulment.

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See also Dutch East India Company; Spices

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Early Modern World

The term *early modern world*, though often debated by historians, generally refers to the years between the fifteenth century and the late eighteenth century. This era saw a huge increase in human population, as well as the discovery and expansion of the world's global sea passages. This development facilitated analysis across national boundaries and recognized that time unites people as powerfully as place.

Historians sometimes refer to the era between the premodern (or medieval) and late modern eras as the “early modern world.” The word during this time was increasingly united by the projection of European power abroad, especially in the Americas. Although early modern Europeans still had little knowledge of, let alone influence over, the inland regions of Africa and Asia, the links engineered and dominated by Europeans made all the world a stage for fundamental historical processes.

Historians debate, or pass over in silence, the problem of determining the precise starting and ending dates of the early modern world and have produced only the vaguest consensus. Roughly, the era of the early modern world began during the fifteenth century with the Timurid (relating to the Turkic conqueror Timur) and Italian cultural renaissances. The year 1405 serves as a convenient starting date because it marks not only the death of Timur, the last great Central Asian conqueror to join farmers and nomads into a single empire, but also the first of the naval expeditions to the “Western oceans” by the Chinese admiral Zheng He (c. 1371–1435). The era might be taken to end in the late eighteenth century with the French and industrial revolutions, both European events of global consequence

in the late modern world. The uncertainty of this periodization derives in part from the concept of an early modern Europe, with its own uncertain chronological boundaries, and in part from the unconsidered way in which both phrases entered historical scholarship.

Origins of the Concept

Although conceptually the phrase *early modern world* is an extension of *early modern Europe*, the initial histories of both phrases have some surprises. The earliest known appearance of *early modern world* occurs in Willard Fisher’s “Money and Credit Paper in the Modern Market” from *The Journal of Political Economy* (1895). Although Fisher writes, “We all know that the system of bank credits and bank money, which was introduced into the great commercial centers of the early modern world, has now attained a quite marvelous development” (1895, 391), the geographical sense of his statement is strictly, if implicitly, European. On the other hand, the phrase *early modern Europe* first shows up twenty years later, in Dixon Ryan Fox’s “Foundations of West India Policy” in *Political Science Quarterly* (1915). Fox remarks, “It was now realized by students of colonial history that in the Caribbean [the “West India” of the article’s title] might best be traced the application of those principles which formed the working basis for the old empires of early modern Europe” (1915, 663). Ironically, the phrase *early modern Europe* first appeared in the Caribbean, in the global context of colonialism, in an article advocating trans-Atlantic history. In their debuts each phrase bore something of the other’s sense.

Fox’s usage was an anomaly, and when the phrase *early modern Europe* arrived in Europe, it had come



to stay. The phrase *early modern world*, however, for decades would imply *world* to mean, in an indefinite way, immediate rather than global surroundings; because this historical scholarship dealt with European subjects, the “early modern world” was in fact “early modern Europe.” The early modern world became global only with C. F. Strong’s grammar-school textbook *The Early Modern World* (1955) and S. Harrison Thomson’s 1964 review of J. H. Parry’s *The Age of Reconnaissance*, in which Thomson uses the phrase to describe the “story of the successive expansion of European venture, from Africa to the reaches of the Indian Ocean by Arabs and Portuguese by sea, the movement westward to the Americas and the early transition from discovery to fishing, trading, and exploitation” (1964, 188).

The first considered analysis of the early modern world came after the posthumous publication of Joseph Fletcher’s article “Integrative History” in 1985. Subsequent analysis has tended to adopt either a deductive or an inductive approach.

Deductive Approach

A deductive approach to the early modern world compares premodernity and late modernity, imagines the characteristics necessary to bridge the two stages, and only then seeks confirmation of them in the historical record. This approach assumes the existence of a modernizing trajectory, which the early modern world shared with (and perhaps inherited from) early modern Europe.

Informed by a Marxist perspective, the essentials of the early modern world would highlight transitions from feudal to bourgeois, from serfdom to wage-earning proletariat, and from local subsistence to regional market economies. A functionalist understanding of modernity, of the sort theorized by the German sociologist Max Weber (1864–1920), the U.S. sociologist Talcott Parsons (1902–1979), or the French sociologist Emile Durkheim (1858–1917), explains social phenomena in terms of their ability to fulfill social needs and broadens this base beyond the mode of production. Here the critical shifts would

be from belief in miracles to belief in science, from household-based craft production powered by muscle, dung, water, and wood to factory-based mass production powered by electricity and fossil fuels, and from government justified by tradition to government consciously invented.

Even in the context of early modern Europe critics challenge the effectiveness of a deductive approach by condemning its implication of an inevitable progress from premodernity to modernity. A deductive approach takes little cognizance of the possibilities of various starting points, different destinations, and particular paths. In some twentieth-century cases the transition to modernity was less a progression than a violently dramatic change. When expanded to a global context this approach becomes not only teleological (assuming a design or purpose in history), but also artificially Eurocentric.

Inductive Approach

Rather than specify theoretical factors to be sought in the time period, an inductive approach examines what happened in different places and extracts from what happened a set of common features. Although such an approach removes the theoretical obstacle of a modernizing trajectory, the historian is left with the Herculean task of specifying processes that united all, most, or many of the world’s peoples. Such an approach need not focus on Europe, nor need it measure the success of various regions in terms of their progress along Europe’s path.

How closely do the rough chronological parameters suggested here match the conventional historiographies (the writings of history) of the various regions outside Europe? Traditional periodizations in African and American history are directly linked to European expansion. Marked by a European presence that could not yet dominate the continent, an early modern Africa might last from the Portuguese capture of Ceuta, a port on the Moroccan side of the Strait of Gibraltar (1415), until the development of quinine and steamships in the nineteenth century. The first Niger steamship expedition returned



In 2005 Lui Gang, a Chinese collector, discovered this 1763 Chinese map of the world. Its unidentified author claimed to have copied it from a 1418 map used by Admiral Zheng He.

without casualties in 1854. An early modern America might stretch from the encounters of 1492 until the period of independence movements, from 1776 to the independence of Brazil in 1822.

An early modern India could begin with the fifth-generation descendant of Timur, Zahir-ud-Din Muhammad Babur, whose ancestry inspired him to conquer northern India. The Mughal Empire (1526–1857) he founded would rule effectively for two centuries; the British would take charge of its Delhi nucleus in 1803. An early modern Japan stretches from the unification efforts of Oda Nobunaga (1534–1582) to the end of the Tokugawa shogunate (the dictatorship of a Japanese military governor) in 1868. Other regional historiographies fit less naturally. Although the Ottomans' 1453 conquest of Constantinople (modern Istanbul, Turkey) was timely, the Chinese Ming dynasty (1368–1644) began too early and ended inconveniently in the middle of our early modern period. Worse, key modernizing

revolutions came late relative to the western European timetable—the Chinese revolution in 1911/12, the Russian Bolshevik revolution in 1917, and the Kemalist (relating to the Turkish soldier and statesman Kemal Atatürk) revolution in Turkey in 1923.

The actual use of the phrase *early modern* in the periodization of regional histories varies. Outside of Europe, it is most commonly used in Asia, especially in works on China, Japan, and, to a lesser extent, India. Historians of China sometimes extend the period into the twentieth century. Far fewer historians write of an *early modern Africa* or an *early modern Brazil*. This fact is due in part to the power of the word *colonial* to identify these time periods. Latin American periodization is so consistently divided into pre-Columbian, colonial, and national periods that there is no need for the phrase *early modern*, which should correspond to the middle, colonial period. In fact, the *early modern Mexico*

sometimes refers to the period immediately after independence.

The divergence of these traditional periodizations of regional histories, so often linked to high-level political history, should not surprise. The global historian in search of an early modern world can look beyond these periodizations to seek processes that enveloped wide swaths of the planet.

Development of Global Sea Passages

Nothing is more characteristic of the early modern world than the creation of truly global sea passages. Before 1492 the Americas remained essentially isolated from Eurasia. In 1788 the last key sea passage was completed by the first permanent settlement of Europeans in Australia. This passage also concluded the integration of the Pacific Ocean as a geographical concept, a process that began when the Spanish explorer Vasco Nuñez de Balboa became the first European to see the Pacific from America in 1513.

During the early fifteenth century the Europeans were unlikely candidates to fill the key role in this process of exploration. Portuguese exploration of the African coast was declining, and mariners were reluctant to sail out of sight of land. Even the overland excursions undertaken by Europeans had become more modest. Muslims still controlled southern Iberia, and in 1453 the Ottomans conquered Constantinople. Smart money would have looked rather at the Chinese admiral Zheng He, whose seven expeditions between 1405 and 1433 reached even the shores of eastern Africa. A change in Chinese imperial policy halted these expeditions, and the voyages that finally connected the world were directed by Europeans. In 1522 the survivors of the expedition of the Portuguese navigator Ferdinand Magellan completed the first circumnavigation of the globe, or perhaps that distinction goes to his Malay slave Panglima Awang, who may have reached his original home halfway through the voyage. During the following centuries a skilled captain and crew could navigate a ship from any port to any port and reasonably expect to arrive. In 1570 the Flemish cartographer Ortelius published

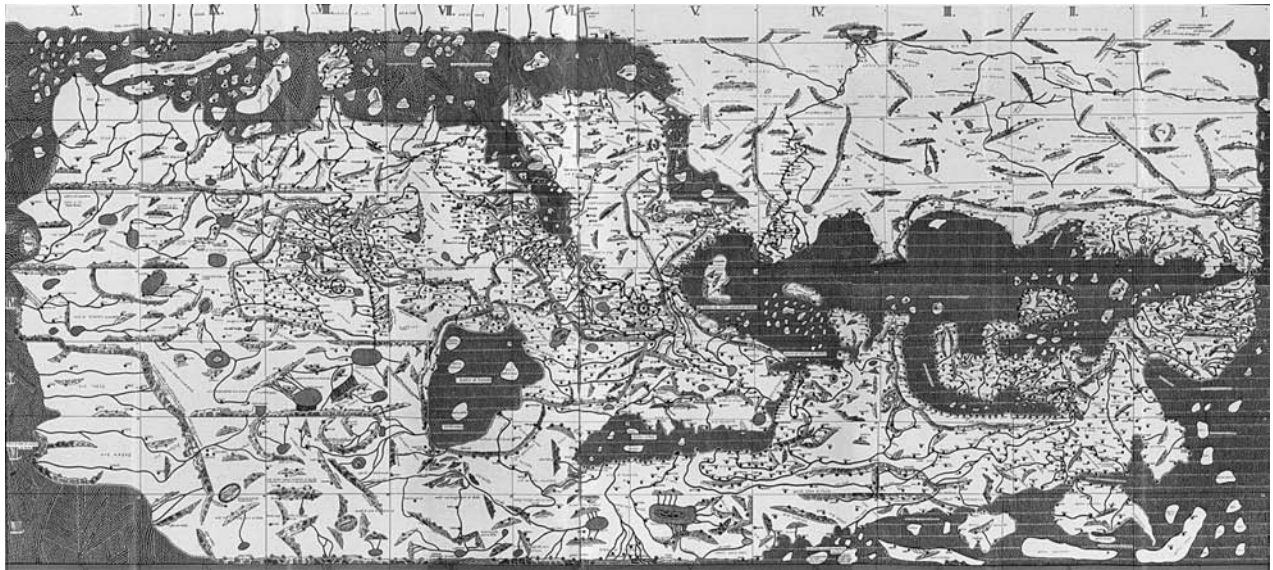
what has been described as the first modern atlas, the *Theatrum orbis terrarum* (Theater of the World); this comprehensive yet handy and inexpensive work enjoyed immediate success. By the end of the period the best-mapped region of the world would be China.

Global Demographic Interconnections

The world's population doubled during the early modern period, from approximately 374 million (1400) to 968 million people (1800). Although demographic data are limited, some patterns emerge. Rapid growth was punctuated by a seventeenth-century decline in Europe, Russia, Iran, Central Asia, China, and Korea—and recovery from this decline occurred globally, even in the Americas. The more populous regions tended to grow more rapidly.

The new global sea passages set the stage for a transatlantic “Columbian exchange” (the biological and cultural exchange between the New World and the Old World that began with the 1492 voyage of Christopher Columbus) and for a transpacific “Magellan exchange” of crops and disease pathogens that put the peoples of the world in a more direct demographic relationship than ever before. The arrival of American maize and potatoes in Eurasia, and later in Africa, facilitated an intensive agricultural, and thus demographic, growth, and the appearance of tomatoes in Italy and chili peppers in India had important dietary and culinary consequences.

Disease also became a global phenomenon. First appearing in Europe in 1494, venereal syphilis reached India four years later, and by 1505 it had outraced the Portuguese to China. The New World's isolation and limited biodiversity (biological diversity as indicated by numbers of species of plants and animals) did not afford its indigenous peoples the same immunities enjoyed by Europeans, who as children were exposed to a multiplicity of infections. Measles, smallpox, and other diseases brought by Europeans triggered a long-term demographic catastrophe. The indigenous population of central Mexico declined from 30 million in 1518 to 1.6 million in 1620—a



In 1154, the Muslim geographer Muhammad al-Idrisi created a map of the world called the “Tabula Rogeriana” for King Roger II of Sicily. The most accurate of its time, it was said to have been the basis for the map used by Christopher Columbus. Bibliotheque Nationale de France.

genocide unintended, misunderstood, and undesired by the Spanish who sought souls for salvation and laborers for their mines. Contact with the wider world wrought similar demographic calamities on other isolated peoples, including Pacific Islanders, Siberian tribes, and the Khoikhoi of southern Africa. Increased contacts distributed pathogens more evenly throughout the world and generally reduced susceptibility to epidemic disease.

Development of a Global Economy

The development of global sea passages integrated America into a truly global economy. Rapidly growing long-distance commerce linked expanding economies on every continent. Dutch merchants in Amsterdam could purchase commodities anywhere in the world, bring them to Amsterdam, store them safely, add value through processing and packaging, and sell them for profit. Intensive production fueled by the commercialism of an increasingly global market gave new importance to cash crops and sparked an unprecedented expansion in the slave trade.

The movement of manufactured goods from eastern Asia toward Europe and America created a chain of balance-of-trade deficits, which funneled silver from American mines to China. Regular transpacific trade developed during the decades after the founding

of Manila in the Philippines in 1571 and followed the same pattern: exports of porcelain and silks from China created a trade imbalance that sucked silver from the Americas and from Japan. Through military-commercial giants such as the Dutch East India Company (founded in 1602), European merchants disrupted traditional trading conditions in Africa and Asia to muscle into regional “country trade.” The expansion of settled populations, as well as the new ocean trade route alternatives to the Silk Roads that linked China to the West, contributed to the decline of nomadism. The agriculture of settled peoples supported large populations and tax bases that an efficient state could translate into continuing military strength.

Development of Large and Efficient States

The global trade in firearms and similar weapons contributed to the growth of large and efficient states, known as “gunpowder empires.” Expensive and complex, the most advanced weapons became a monopoly of centralized states, which employed them to weaken local opposition. During the mid-fifteenth century the king of France used artillery to reduce some sixty castles annually. Administrative procedures also became increasingly routinized and efficient. Ever

more abstract notions of state authority accompanied the evolution of new sources of legitimacy. From the Irrawaddy River in Asia to the Seine River in Europe, religious uniformity served to reinforce and confirm centralized rule. The ideal of universal empire was native to America, Africa, and Eurasia.

The early modern unification of England with Scotland and Ireland was paralleled throughout Europe. If in 1450 Europe contained six hundred independent political units (or more, depending on the criteria), in the nineteenth century it contained around twenty-five. About thirty independent city-states, khanates (state governed by a ruler with the Mongol title “khan”), and princedoms were absorbed into the Russian Empire. By 1600/1603 the Tokugawa shogunate had unified Japan. Fourteenth-century southeastern Asia had two dozen independent states that evolved into Vietnam, Siam (Thailand), and Burma (Myanmar) by 1825. The Mughals unified India north of the Deccan Plateau for the first time since the Maurya Empire (c. 324–c. 200 BCE). Unification was also an overture to expansion. In addition to an increasing European presence worldwide, Qing China (1644–1911/12) invaded Xinjiang, Mongolia, Nepal, Burma, and Formosa,

and during the seventeenth century Romanov Russia stretched out to the Pacific.

The new unities led relentlessly to new fragmentations and hierarchies, and resistance to such centralizing political forces was equally universal. During the century between 1575 and 1675, for example, uprisings occurred in China, Japan, India, Armenia, Georgia, Kurdistan, Ukraine, the Balkans, the German lands, Switzerland, France, Catalonia, Portugal, England, Ireland, and Mexico. At the end of the period, the French Revolution (1789) would enjoy global influence as the first revolution modern in its progressive, absolute, and sudden nature.

Intensification of Land Use

The concurrence of population growth, global markets, and aggressive states led to wider and more intensive use of land. Displacing or subordinating indigenous peoples, pioneers backed by aggressive states drained wetlands and cleared forests to create new lands for intensive commercial, agricultural, and pastoral regimes. (Similarly, commercial hunters pursued various species of flora and fauna to extinction for sale on a global market.) Oblivious to any land

The mid-sixteenth-century *Theatrum orbis terrarum* (Theater of the world) of Abraham Ortelius, a Flemish engraver and businessman, reflected an age of exploration, broadened commercial connections, and scientific inquiry. His map of Ireland, shown here, exemplifies the most modern mapmaking techniques of the period: precise geographic detail, beautifully rendered topographical symbols, and an abundance of place names.





claims held by indigenous peoples, states would offer pioneers low taxes in exchange for settlement and land rights. For example, the Mughal Empire provided land grants, Hindu merchants provided capital, and Sufi (Muslim mystic) brotherhoods provided leadership for the communities of Muslim pioneers who transformed the Bengal wetlands into a key rice-producing region. These efforts compensated for the extended disobliging weather patterns that plagued temperate zones throughout the Northern Hemisphere—a “little ice age” affecting climate throughout the early modern world.

Religious Revival

The most distinctive religious characteristic of this era was the global expansion of Christianity. Indeed, the impetus driving the creation of global sea passages was religious as well as commercial. The efforts of Catholic religious orders predominated—the great Protestant missionary societies would be founded only in the 1790s. Sufi brotherhoods such as the Naqshibandiyah expanded Islam in Africa, India, China, and south-eastern Asia. Tibetan Buddhism pushed into north-western China, Manchuria, Mongolia, Buryatia, and to Kalmikya, on the shore of the Caspian Sea, which remains today the only Buddhist republic in Europe.

The increased emphasis on orthodox and textual conventions of Latin Christendom’s Reformation had a parallel in the Raskol schism of the Russian Orthodox Church during the 1650s. Elsewhere, Muhammad ibn Abd al Wahhab (1703–1792) founded the Wahabbi movement to reform Sunni Islam under strict Qur’anic interpretation.

Many people believed that the era that historians call “early modern” would be the last. Franciscan apocalyptic thought inspired Columbus, and the belief that the god Quetzalcoatl would return from the East in a One Reed year may have led the Aztec sovereign Montezuma II to regard the Spanish conqueror Hernán Cortés and his comrades as divine envoys. A Jesuit at the court of Akbar in 1581 found the Mughal ruler open to the idea of the imminent end because that year was eleven years from the

thousandth anniversary of the Hijra, which was the journey the Prophet Muhammad took from Mecca to Medina in 622 CE. The Jewish Sabbatian movement expected the end of the world in 1666 and influenced apocalyptic thought even in Christian England. In late eighteenth-century central China the White Lotus Society awaited the return of the Buddha to put an end to suffering. All these developments might best be understood in the context of notions of history in which significant change was either absent—or sudden and awesome.

Outlook

Neither a deductive nor an inductive approach to the early modern world is entirely satisfactory. A deductive approach expects to see the entire world following a Eurocentric roadmap to modernization (one that Europe itself might not have followed). Indeed, renaming the period the *late traditional world*, the exact inversion of *early modern*, avoids both the teleology and the Eurocentrism. On the other hand, an inductive approach respects the diversity of historical experience, but this diversity itself can frustrate attempts to delineate a discrete list of unifying features.

If historians can tolerate the inconveniences of regional exceptions to every “global” process, the idea of an early modern world has its attractions. Although a perspective that twists the world around a European center is unproductive, the regions of the early modern world were increasingly named (in America) and mapped (as in China) by Europeans, even as they exploited, served, or collaborated with local peoples. Nevertheless, in its application beyond Europe the idea of an early modern world redresses the distortions of the Orientalist assumption of parochial, timeless, and conservative inertias unaltered by European expansion. It recognizes that peoples of the early modern era in some ways had more in common with each other than with their own ancestors and descendents—that time unites just as powerfully as place. It facilitates comparative analysis and abets inquiry that trespasses across national boundaries. It sees the entire world as a stage, not only for

comparative study, but also for the broadest possible analysis for a historian's scrutiny.

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See also Cartography; Geographic Constructions of the World; Renaissance

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Earthquakes

Earthquakes are experienced as shockwaves or intense vibrations on the Earth's surface. They are usually caused by ruptures along geological fault lines in the Earth's crust, resulting in the sudden release of energy in the form of seismic waves. They can also be triggered by volcanic activity or human actions, such as industrial or military explosions.

Earthquakes can occur almost anywhere in the world, but most take place along particularly active belts ranging from tens to hundreds of miles wide. An earthquake's epicenter is the point on the Earth's surface directly above the source or focus of the earthquake. Most earthquakes are small and cause little or no damage, but very large earthquakes, followed by a series of smaller aftershocks, can be devastating. Depending on the location of the epicenter, these earthquakes can have particularly disastrous effects on densely populated areas as well as the infrastructure that supports them, such as bridges, highways, apartment buildings, skyscrapers, and single-family homes.

Earthquakes can destroy our built-up environments and the essential systems we rely on for our lives and livelihoods. They also have the potential to cause landslides and tsunamis (giant ocean waves that can flood and destroy coastal regions), both of which can have devastating effects on people and communities. The social and economic consequences of earthquakes can be vast, and recovering from them can take many years.

Early Explanations

Humans have come a long way in their understanding of the causes of earthquakes. At first, myths and

legends explained processes beneath the Earth's surface. Thinkers from the time of the Greek philosopher Anaxagoras (500–428 BCE) to the German canon and councillor Konrad von Megenberg (1309–1374) in the late Middle Ages believed, with slight variations, that air vapors caught in Earth's cavities were the cause of earthquakes: thus, Thales of Miletus (c. 625–547 BCE), the founder of Ionian natural philosophy, was among the first to attribute earthquakes to the rocking of the Earth on water. The Greek philosopher Anaximenes of Miletus (585–526 BCE) thought that periods of dryness and wetness were responsible for earthquakes. Aristotle (384–322 BCE) described earthquakes as the consequence of compressed air captured in caves; his ideas were used to explain meteorological phenomena and earthquakes until the Middle Ages. Moved by the devastating earthquake at Pompeii and Herculaneum on 5 February 62 (or 63) CE, the Roman statesman and philosopher Seneca (4 BCE–65 CE) backed Aristotle's thinking. Plinius (23–79 CE), the Roman historian and author of *Historia naturalis*, considered earthquakes to be underground thunderstorms.

When classical antiquity was rediscovered by the Christian Occident around 1200, significant parts of Greek ideology were merged with Christian ideas. Albertus Magnus (1193–1280), a German scientist and philosopher, supported the study of the writings of Aristotle and Arabic and Jewish commentators. His own works made an outstanding contribution to the development of the sciences. Georgius Agricola (1494–1555), a German humanist, physician, and mineralogist, believed that earthquakes were the consequence of a subterranean fire ignited by the sun. The long-lasting hypothesis of a central subterranean



fire, proposed by the Greek philosopher Pythagoras (570–500 BCE), was revived in the book *Mundus Subterraneus* by German scholar Athanasius Kircher (1601–1680).

During the eighteenth century scientists became increasingly convinced that no natural phenomenon was unexplainable, thus an explanation for earthquakes became a challenge for scientists of the Enlightenment. The English physician William Stukeley (1687–1765) wrote in his *Philosophy of Earthquakes* that earthquakes were caused by electrostatic discharge between sky and Earth, like lightning.

The most catastrophic earthquake of the eighteenth century occurred in 1755, destroying Lisbon, Portugal, killing about sixty thousand people, and initiating great debate about the cause of earthquakes. The following year the German philosopher Immanuel Kant (1724–1804) proposed chemical causes for earthquakes. He rejected mystical and religious explanations and held that the cause is below our feet.

Important Discoveries

The Englishmen John Winthrop (1606–1676) and John Michell (1724–1793) began to reflect not only on the causes but also the effects of earthquakes. Winthrop, a mathematician and natural philosopher, made the important discovery that earthquakes were waves; this discovery would be revived a hundred years later. In 1760, Michell published a study in which he recognized wavelike motions of the ground. With that he anticipated the perception that would lead to an understanding of the cause of earthquakes.

Another significant step was taken by the Irish engineer Robert Mallet (1810–1881) when he began documenting worldwide earthquake occurrences. He compiled a catalog of six thousand earthquakes from which he was able to draw the most complete earthquake map of the world in 1857. The cause of earthquakes was still unknown, but Mallet's research, which led to the understanding of the

origin of mountains and continents, supplied the basic approach to answering the question. In 1912, the German meteorologist and geophysicist Alfred Wegener (1880–1930) presented his theory of continental drift, which states that parts of the Earth's crust slowly drift atop a liquid core. Wegener hypothesized that there was a single gigantic continent (Pangaea) 200 million years ago.

Causes

Earthquakes are classified as either natural or induced. Natural earthquakes are further classified as tectonic—the most common (more than 90 percent of all earthquakes are tectonic)—volcanic (occurring in conjunction with volcanic activity), and collapse (for example, occurring in regions with caverns). Induced earthquakes are vibrations of the ground caused by human activities, such as construction of dams, mining, and nuclear explosions. For example, filling a reservoir in Koyna, India, induced a catastrophic earthquake in December 1967 that caused 177 deaths.

Most earthquakes are caused by the movement of tectonic plates, as explained by the continental drift theory of Wegener. Tectonic plates are large segments of the Earth's lithosphere (the outer, rigid shell of the Earth that contains the crust, continents, and plates). The Earth's surface consists of nine major plates: six continental plates (the North American, South American, Eurasian, African, Indo-Australian, and Antarctic plates) and three oceanic plates (the Pacific, Nazca, and Cocos plates). Tectonic plates move in relation to each other and along faults over the deeper interior. Faults are fractures in rock along which the two sides have been displaced relative to each other. An example is the well-known San Andreas Fault in California, which separates the Pacific plate (on which San Francisco and Los Angeles lie) from the North American plate.

When lava is upwelling at midoceanic (mid-Pacific, mid-Atlantic) ridges, rock moves slowly on either side of the ridges across the Earth's surface. New plates are constantly created, while other plates must be

“The Earthquake House”
at White City, London.
Theories proposed a century
apart by the Englishmen
John Winthrop and John
Mitchell anticipated the
modern understanding of
the cause of earthquakes.
Photo by J. J. Shaw.



absorbed at subduction zones (where the edge of one plate descends below the edge of another).

Earthquakes, volcanoes, mountain building, and subduction zones are generally explained as consequences of steady, large, horizontal surface motions. Most tectonic plates contain both dry land and ocean floor. At present, those plates containing Africa, Antarctica, North America, and South America are growing, whereas the Pacific plate is shrinking. When plates collide, mountain chains such as the Alps and Himalayas arise, accompanied by persistent earthquake activity.

Seismographs and the Richter Scale

Earthquakes are recorded by sensitive instruments called seismographs. Today's seismographs record ground shaking over a band of frequencies and seismic amplitudes. A seismogram (the record created by a seismograph) shows the motions of the Earth's surface caused by seismic waves across time. Earthquakes generate different kinds of seismic waves: P (primary) waves alternately compress and dilate the rock, whereas S (secondary) waves move in a

shear motion, perpendicular to the direction the wave is traveling. From a seismogram, the distance and energy of an earthquake can be determined. At least three seismograms are needed to locate where an earthquake occurred. The place at which rupture commences is the focus, or hypocenter, while the point on the Earth's surface directly above the focus of an earthquake is the epicenter. The distance between the focus and the epicenter is the focal depth of an earthquake.

The amount of energy released by an earthquake is measured and represented by its magnitude. One common type of magnitude measurement is the Richter scale, named after the U.S. seismologist Charles Francis Richter (1900–1985). The Richter scale is logarithmic, meaning the seismic energy of a magnitude 7 earthquake is one thousand times greater than that of a magnitude 5 earthquake.

Earthquake Catastrophes

The following examples from different regions provide vivid examples of the kind of devastation earthquakes can inflict on human populations.

1906: San Francisco, California

The 18 April 1906 San Francisco earthquake, with a magnitude of 7.8, remains one of the most cataclysmic in Californian history. The damaged region extended over 600 square kilometers (about 232 square miles). The earthquake was felt in most of California and parts of western Nevada and southern Oregon. The earthquake caused the longest rupture of a fault that has been observed in the contiguous United States. The displacement of the San Andreas Fault was observed over a distance of 300 kilometers (about 186 miles). The maximum intensity of XI, measured on the Modified Mercalli Intensity Scale ratings of I–XII, was based on geologic effects.

The earthquake and resulting fires took an estimated three thousand lives and caused about \$524 million in property loss. The earthquake damaged buildings and structures in all parts of the city and county of San Francisco. Brick and frame houses of ordinary construction were damaged considerably or completely destroyed, and sewers and water mains were broken, including a pipeline that carried water from San Andreas Lake to San Francisco, interrupting the water supply to the city. This made it impossible to control the fires that ignited soon after the earthquake occurred, and subsequently those fires destroyed a large part of San Francisco. It was not until 1908 that San Francisco was well on the way to recovery.

1995: Hanshin-Awaji; Kobe, Japan

On 17 January 1995, the Great Hanshin-Awaji earthquake with a magnitude of 6.9 occurred directly under the industrialized urban area of Kobe, Japan, a city of about 1.5 million people. The shock occurred at a shallow depth on a fault running from Awaji Island through Kobe. Strong ground shaking lasted for about twenty seconds and caused severe damage over a large area. More than five thousand people were killed; the total cost of damage and destruction exceeded \$100 billion, or

about 2 percent of Japan's gross national product. More than 150,000 buildings were ruined; highways, bridges, railroads, and subways failed; water, sewage, gas, electric power, and telephone systems were extensively damaged.

The city of Kobe—then one of the six largest container cargo ports in the world and Japan's largest—was devastated. Its relative importance as a major hub in Asia declined over the following years, with significant enormous economic consequences. With Japan's having invested heavily in earthquake research, people believed they would be ready for the next earthquake, but their faith was shattered deeply by the Kobe catastrophe.

2003: Bam, Iran

On 26 December 2003, an earthquake occurred below the city of Bam in the southeast of Iran, illustrating again the tragic connection between poor building quality and large numbers of victims. The earthquake had a magnitude of 6.5, and the hypocenter was only 8 kilometers (about 5 miles) below the city. The people of Bam were still sleeping when the earthquake struck. The death toll was estimated at 43,200, with more than 30,000 injured and 100,000 left homeless. The main reason for the large number of fatalities was the generally poor construction quality of buildings, 85 percent of which were damaged. Even though experts had classified the region as a highly exposed zone prior to the earthquake, many of the residences were traditional houses of mud-brick construction, with heavy roofs. Unreinforced masonry holds almost no resistance against the ground motion generated by strong earthquakes.

Preparing for Earthquakes

Increasing population density magnifies the potential damaging effects of earthquakes, especially in urban areas with high seismic activity—for example, San Francisco. For this reason, anti-seismic building codes

We learn geology the morning after the earthquake. • **Ralph Waldo Emerson (1803–1882)**

are important. Appropriate planning and regulation of new buildings and seismic upgrading of existing buildings can safeguard most types of buildings against earthquake shocks. One obstacle to adhering to anti-seismic building codes is high cost; this is true particularly in poorer cities in the developing world, and the effects can be particularly devastating.

Mexico City; Sichuan Province, China; Haiti

The 19 September 1985 Mexico City earthquake, occurred 200 kilometers (about 124 miles) from Mexico City, but the shaking of loose sediments in the city was much stronger than at the epicenter. Nearly ten thousand people died, and the city was heavily damaged as poorly constructed buildings collapsed. The earthquake destroyed as many as 100,000 housing units and countless public buildings.

Hundreds of millions of people live in buildings that would collapse in a strong earthquake, as happened in the mountainous Sichuan Province of China in 2008, when as many as 90,000 people were killed or remain missing, with another 374,000 injured and at least 15 million displaced.

On the afternoon of 12 January 2010, an earthquake with a magnitude of 7.0 devastated parts of Haiti, a nation on the island of Hispaniola in the Caribbean; it was the strongest in the region in over two hundred years. The earthquake occurred at a fault that runs right through Haiti and is situated along the boundary between the Caribbean and North American plates; the epicenter was just 16 kilometers (10 miles) south of the capital, Port-au-Prince, whose population at the time was over 2 million. Aftershocks continued for days, including one a week later registering a magnitude of 5.9. As of late January 2010 the projected death toll ranged from 70,000 to 200,000. The severity of the earthquake

was exacerbated by two factors: the depth of the quake was shallow, meaning that energy released was closer to the Earth's surface and less able to be absorbed by the Earth's crust; and nearly all of the buildings in Haiti were substandard construction, many cinderblock and mortar.

It is anticipated that, in the future, more catastrophes with high death tolls will occur. Owing to the rapid growth of many developing-world metropolises in highly exposed regions, such scenarios are distinctly more probable, despite the possibilities provided by modern earthquake engineering.

As of 2010, the time, location, and magnitude of earthquakes cannot be accurately predicted. Damage and casualties can be minimized, however, if builders adhere to building codes based on the seismic hazards particular to their areas.

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See also Climate Change

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Ecological Imperialism

Ecological imperialism is the process by which colonizers carried the plants, animals, and diseases of their homeland to new lands, albeit sometimes unintentionally. Changing a new environment to more closely resemble a familiar one was often critical to the establishment and success of the imperialists, most prominently Europeans in the Americas, Africa, and Oceania.

Imperialism is usually considered to be a political and sometimes an economic or religious phenomenon. But it also has an ecological side: imperialists have intentionally, more often unintentionally, and always inevitably carried with them plants, animals, and microlife from their lands of origin to their new lands. Where imperialists have been successful not simply in conquest but also in settlement, they have done so with the indispensable assistance of the life forms they brought with them. The most successful imperialists have been those who have, as much by chance as intention, changed the flora and fauna, macro and micro, of their new environments to be much like their old environments.

Immigrant life forms often have done poorly in their new homes: for instance, attempts to permanently establish the European nightingale in North America have never succeeded. But these immigrants, moving into environments where organisms were not preadapted to prey on or effectively resist them, have often done well indeed.

Examples of Ecological Imperialism

Ecological imperialism is as old as human migration. For example, the ancestors of the Australian

aborigines arrived in Australia from the Malay Archipelago fifty or so thousand years ago and some millennia afterward imported their dog, the dingo—the continent's first domesticated animal—which figured importantly in their success there.

The best examples pertain to European expansion because the Europeans were the first to habitually cross oceans, that is to say, to travel between continents with sharply contrasting biotas (flora and fauna). The human invaders' attendant organisms spearheaded alterations in local ecosystems essential for the biological and economic success of the humans. This can be considered under three headings: crops, animals, and diseases.

Crops

Europeans learned to eat the foods of America and Oceania (lands of the Pacific Ocean) but generally preferred their own food, planting wheat, barley, rice, turnips, peas, bananas, and so forth in their colonies wherever they would grow and as soon as was practical after arrival. These crops were often particularly important in enabling the imperialists to live in numbers in areas where indigenous crops did not grow well. A good example of a successful European crop is wheat, which prospers where Native American cereals do not and provided the nutritional and economic foundation for large populations in the temperate-zone grasslands of North and South America and Australia.

Animals

European imperialists were most successful where there were few domesticated animals prior to their



Roundup on the Sherman Ranch, Geneseo, Kansas. The horses and cattle were brought to North America from Europe. New York Public Library.

arrival. In America imported pigs fed on a great variety of locally available substances propagated wildly, and pigs generously provided proteins and fats for the imperialists. Imported cattle turned what humans cannot eat—grasses and forbs (nongrass herbs)—into what they can eat—meat and milk—and were running in vast feral herds in northern Mexico and Argentina within a century or so of their arrival. Old World sheep also thrived in many of the colonies, and their numbers exploded in Australia and New Zealand. Where these and like quadrupeds—goats, for instance—did well, so did the Europeans.

Horses were slower than most imported quadrupeds to have population explosions, but they did so in time. They made supermen of the invaders in battle with native foot soldiers, most of whom had never seen such large animals before and none of whom had ever seen an animal carry a human and obey human will.

The biological revolutions underlying these successes were much more complicated than simply bringing crops and animals ashore. Whole ecosystems or at least several of their components had to be imported, too. For example, in the thirteen colonies and then the early states of the United

States one of the problems of establishing large herds of domesticated animals from Europe was the fact that native grasses and forbs, products of millennia free from the tread and teeth of domesticated herds, did not tolerate heavy grazing pressure well. The importation and then often-rapid expansion of European forage plants—for instance, white clover and what Americans inaccurately call Kentucky bluegrass—unrolled a carpet of food for immigrant quadrupeds. Much the same thing happened in the humid zones of Argentina, Australia, and Argentina.

Diseases

In the first stage of European imperialism in the Americas and Oceania the triumph of the invaders over the natives seemed unlikely. The newcomers were always outnumbered. They were isolated by whole oceans from their home bases and were inexperienced in even how to survive in the new and alien environments. They were in need of powerful allies, such as the animals cited earlier and the germs they and their animals brought in their blood and breath. The Old World invaders' advantage was that their microorganic evolution and human history were different than those of the natives of the New World.

Heavy populations dependent on agriculture appeared earlier in the Old World than elsewhere, most significantly in crowded and filthy cities, providing the pathogens with food, habitat, and opportunity for transmission. Heavy populations of domesticated animals first appeared there likewise, providing more habitats for pathogens and opportunities for jumping from one species to another, including humans. The possibilities for epidemiological disasters were multiplied by the penchant of Old World peoples for long-range commerce.

When European imperialists crossed the oceans they brought with them infections unknown to American and Oceanic peoples, whose general density of population was low or relatively new, as were their cities. Large herds of domesticated animals were rare or



nonexistent, and the tempo of long-range commerce was relatively low. Thus native peoples were unfamiliar with such infections as smallpox, measles, typhus, influenza, yellow fever, and malaria.

The most important or at least most spectacular of these infections in ecological imperialism was smallpox. It first arrived in the West Indies at the end of 1518, spread rapidly through the Greater Antilles and then on to Mexico, where Hernán Cortes and his conquistadors had just been driven out of the Aztec capital. All or nearly all of the Spaniards had already had the disease on the other side of the Atlantic and were immune. The peoples of Mexico were universally susceptible and died in droves.

Similar sequences of events occurred elsewhere in the Americas and Oceania. For example, the way was cleared for the Pilgrims who arrived in Plymouth, Massachusetts, in 1620 by some sort of devastating epidemic in 1616. For another example, smallpox raced through the aborigines of New South Wales in 1789 soon after the arrival of the Botany Bay colonists.

Failure of Ecological Imperialism

Where the Europeans' attendant organisms, macro and micro, triumphed, as in temperate zone regions of America and the southwest Pacific, the Europeans took over demographically. Where the triumph was mixed, as in tropical America and South Africa, the Europeans conquered militarily but not demographically. Where the attendant organisms had only minor effect, as in tropical Africa and Asia, the Europeans failed to found

colonies of settlement and were ejected in the twentieth century.

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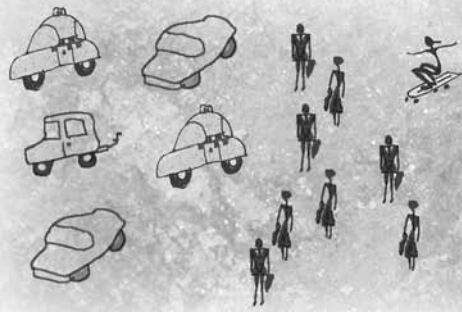
See also Biological Exchanges; British Empire; Diseases—Overview; Green Revolution

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Ecology, Cultural

The anthropological field of cultural ecology asserts that societies develop on paths related to their environmental circumstances: culture is often a mode of adaptation. Since the mid-twentieth century when it emerged, cultural ecology has developed varying foci and assumed several different varieties. Whether nature influences culture, or culture effects the environment, is a debatable topic among cultural anthropologists.

Cultural ecology in a wide sense denotes a concern with the relationship between human culture and the natural environment, and in a narrow sense a particular perspective on this relationship that was first developed by anthropologists such as Julian Steward (1902–1972) and Leslie White (1900–1975) in the late 1940s and the 1950s. Steward and White were both critical of the historical particularism that dominated American anthropology in the early decades of the twentieth century through the influence of Franz Boas (1858–1942), Alfred Kroeber (1876–1960), and their students, who rejected any attempt to explain cultural phenomena by reference to noncultural factors such as evolution or environment. Although the differences between Steward and White were considerable, they converged in the ambition to revive an evolutionist and comparative perspective on culture, and in seeking explanations of cultural forms in technological and environmental factors. Both had a materialist orientation, influenced by Marxism, and tended to regard the social and ideational aspects of culture as accommodations to its technoenvironmental aspects.

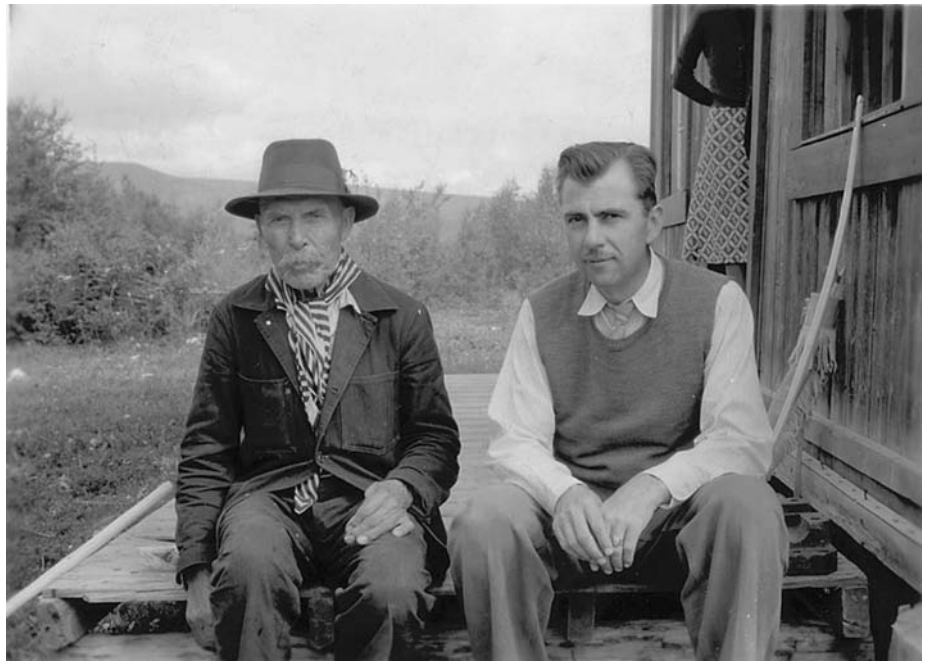
Steward emphasized what he called the culture core, that is, those features of a society most closely

associated with subsistence, as an adaptation to specific environmental conditions. He then classified societies with similar cultural cores into categories that he called culture types. Finally, he sorted these culture types into a series of stages based on their complexity or level of sociocultural integration, which later provided the foundation for his student Elman Service's (1915–1996) influential evolutionary sequence: bands, tribes, chiefdoms, and states. Steward offered a theory of multilineal evolution, distinct from nineteenth-century unilinear evolutionism. By this he meant that societies could develop along different paths depending on their environmental circumstances.

White also argued for an evolutionary perspective on culture as a mode of adaptation, but focused on technological advances in the harnessing of energy as the standard by which to measure evolutionary progress. Whereas Steward's evolutionism was specific and relativistic, White's was thus general and universalistic.

Steward's and White's cultural ecologies prepared the ground for the emergence, in the 1960s and 1970s, of an ecological anthropology influenced by cybernetics, general systems theory, and the rapidly developing science of ecology. Much of the research conducted under this label has been concerned with the relation between local populations and their natural habitats, interpreted in terms of human adaptation to an ecological niche and the maintenance of sustainable energy flows in local ecosystems. Most faithful to the Marxist roots was Marvin Harris's (1927–2001) cultural materialism, a perspective that viewed seemingly arbitrary cultural phenomena (e.g., the sacredness of India's cattle) as reflections of an underlying material rationality (in this case, the productive importance of

Anthropologist Julian Steward, right, sits next to a man thought to be Chief Louis Billy Prince, a Carrier Indian who was a source for Steward's research (c. 1940). The National Anthropological Archives, Smithsonian Institution.



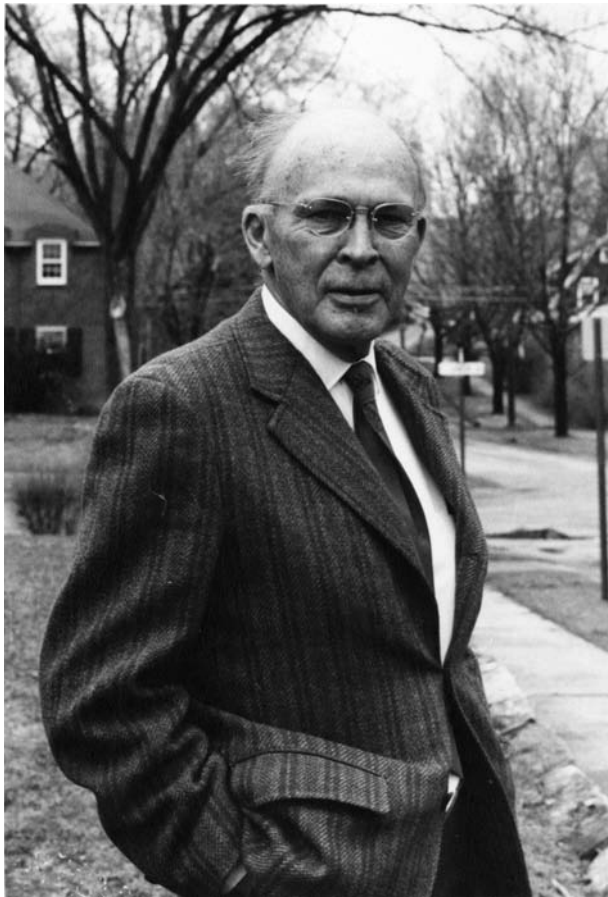
cattle in India), thus representing an extreme version of cultural ecology's ambition to explain culture by reference to nature. A more sophisticated version was Roy Rappaport's (1926–1997) account of ritual pig slaughter in highland New Guinea as a cybernetic feedback mechanism that maintained ecological equilibrium and cultural stability. In synthesizing influences from materialist cultural ecology, on one hand, and the cybernetics and communication theory informing Gregory Bateson's (1904–1980) ecology of mind, on the other, Rappaport pioneered a more holistic ecological anthropology that sought to address both material and ideational aspects of human–environmental relations. Another school of ecological anthropology, represented by neoevolutionists such as Morton Fried (1923–1986), Elman Service, and Kent Flannery (b. 1934), maintained a focus on tracing long-term processes of sociocultural development to explain the origins of increasing social complexity.

Critiques

A number of criticisms have been directed at these various versions of cultural ecology, the most general of which are their inclination toward environmental determinism and their neofunctionalist assumptions of adaptation. It has often been observed that to demonstrate the ecological consequences of a cultural

institution is not to explain its existence. Marxist critics also point out that an emphasis on the ecological functions of culture neglects the crucial role of conflict, power, and contradiction in sociocultural processes. White's Marxist-inspired technological optimism, on the other hand, is difficult to reconcile with world developments since the 1950s. His law of cultural evolution, which ambiguously refers to both the *amount* of energy harnessed per capita and the *efficiency* of energy use, did not reckon with the possibility that quantity and efficiency (what his students Marshall Sahlins and Elman Service later distinguished as thermodynamic *achievement* versus thermodynamic *efficiency*) may in fact be inversely related in world history. The simpler and less energy-intensive a society is, the more efficient its energy use is likely to be. Nor did White consider the possibility that the expanded levels of thermodynamic achievement (technological development) that he visualized as the foundation of an egalitarian future world might be dependent on an unequal exchange of energy and other resources in global society. In their inclination to focus on local populations and ecosystems, and on technology as a local phenomenon, cultural ecology and subsequent proponents of ecological anthropology have generally underestimated the role of global or even regional systems and processes in shaping local economy and culture. The recently expanding field of

The Law of Cultural Development: culture advances as the amount of energy harnessed per capita per year increases, or as the efficiency or economy of the means of controlling energy is increased, or both. • **Leslie White (1900–1975)**



Anthropologist Leslie A. White (c. 1960s). Bentley Historical Library, University of Michigan.

political ecology, however, is a promising antidote to such parochialism and political naivety. In addition to exploring applied environmental issues such as sustainable development, environmental justice, ecological economics, and the tragedy of the commons (i.e., the overuse of common property resources by people pursuing their individual interests), political ecology has generated new theoretical frameworks for understanding how environmental issues, power, and inequality are intermeshed.

In recent years, the label *environmental anthropology* has been used in a general sense for anthropological studies of human–environmental relations, including those whose concerns transcend the questions traditionally asked by cultural ecology and ecological anthropology. This more inclusive label

should arguably be extended to the ethnoecology pioneered in the 1950s by the cognitive anthropologist Harold Conklin (b. 1926). A subfield of ethnoscience, this method uses linguistic analysis of native (emic) categories to map a group’s own view or knowledge of their natural environment.

Environmental anthropology would also include the symbolic ecology launched in the 1990s by Philippe Descola (b. 1949), building on the structuralist perspectives of Claude Lévi-Strauss (1908–2009). Apparently sharing Lévi-Strauss’s position that nature and culture are universal cognitive categories, Descola has redefined animism and totemism as mirror images of each other, metaphorically transferring meanings from society to nature and from nature to society, respectively. Symbolic ecology shares with ethnoecology a focus on the cultural construction of the environment, rather than on how the environment shapes culture. Finally, also in the 1990s, Tim Ingold (b. 1948) has developed an approach to human–environmental relations, inspired by, for example, phenomenology, ecological psychology, and Gregory Bateson, that he calls relational-ecological-developmental. Ingold rejects the universality of the distinction between nature and culture by showing that such categories are generally alien to hunter-gatherers. He also rejects the view that knowledge of the environment is either a representation or a construction of reality, in favor of Bateson’s view that knowledge is a relation that shapes both the knower and the known, both subject and object. Ingold challenges all notions of cultural or biological inheritance, arguing instead that humans are constituted (as indissolubly persons *and* organisms) through practical enskilment and engagement in specific environments. As for Bateson and Rappaport, the thrust of this effort is to transcend the conventional dualism in Western thought that separates material and ideational aspects of human–environmental relations.

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See also Anthropology



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Economic Cycles

From the beginning of the widespread use of money in China, circa the year 1000, to the trade and budget deficits of the twenty-first century, economic cycles have plagued most of the world. Economists have argued endlessly and inconclusively about exactly what caused these booms and busts, and which governmental policies might counteract their troubling effect on human lives.

In recent centuries, economic cycles—years of boom leading up to a sudden bust followed by a period of hard times—began to prevail in most of the world. Why that irregular rhythm exists remains a matter of debate among economists and politicians. In the deeper past other disasters—crop failure, epidemics, and the ravages of war—often afflicted our ancestors, and years of plenty and years of hunger affected almost everybody in course of a lifetime. But the modern pattern of boom and bust arose only when the use of money became widespread and introduced a powerful new variable into human behavior.

From Crops to Coins

The widespread use of money first occurred in China about the year 1000, after the government decided to collect taxes from peasants in coin instead of demanding a share of the harvest, as they had before. Paying in coin required millions of ordinary persons to find something to sell, and the effect at first was to launch a sustained boom since buying and selling among scores of millions and across hundreds of miles along China's two principal rivers rewarded efficiency and increased specialization of production.

Wealth multiplied accordingly, and Chinese officials soon resorted to printing paper money to supplement coinage and make large-scale payments easy. Surviving records do not show whether anything like modern patterns of boom and bust developed in China, but we do know that when Mongol conquerors invaded and eventually founded the Yuan dynasty (1279–1368), paper currency ceased to circulate, since prolonged warfare provoked reckless printing of paper money and made it worthless. That bought on so big a bust that the Chinese relied entirely on coins for centuries thereafter.

As far as historians can tell, ancient Greece and Rome never experienced modern forms of boom and bust, though when Alexander of Macedon (Alexander the Great, 356–323 BCE) captured the Persian treasury and began to spend its contents lavishly, he provoked a boom of sorts. It was prolonged by his Greek and Macedonian soldiers who founded scores of cities throughout the empire and put a vastly increased amount of money into circulation. During the early Roman Empire (30 BCE to 180 CE) money payments sustained the circulation of wine, olive oil, and grain throughout the empire, but neither boom nor bust can be clearly detected before epidemics and invasion impoverished everyone. Thereafter, widespread return to local self-sufficiency made money marginal in most of Europe again during the early Middle Ages.

After about 1000, however, long-distance trade began to flourish anew in Europe and money again financed it. That provoked a long-term boom as warm weather brought improved harvests, population grew, and extensive new fields were carved from the forests. Money circulated more and more freely, and the first unmistakable bust came in 1343–1344, when Florentine banks went bankrupt



after King Edward III of England repudiated his debts, and bank-financed export of raw wool from England to Flanders and Italy suffered interruption. Sheep farmers in England, spinners and weavers in Flanders and Italy, and the merchants who distributed woolen cloth throughout Europe and the Mediterranean coastlands all suffered severe losses of income.

Plague and Tulip Mania

Before full recovery, a far greater disaster came in 1346 when the Black Death (almost surely bubonic plague) arrived in the Crimea and in the next three years spread almost everywhere across Europe, killing about one third of the entire population. The enormity of that disaster was never forgotten and made the financial crisis that had temporarily paralyzed the wool trade seem trivial. In spite of efforts at quarantine, plague continued to break out in Europe at irregular intervals for the next few centuries, and population continued to decline until about 1450. Whenever plague raged all ordinary business was suspended and recovery often came slowly. But alternating boom and bust, if it existed apart from epidemics and warfare, was not conspicuous until the seventeenth century, by which time private financial deals had attained a greater scale than before.

The so-called tulip mania in Holland was an unusually bizarre example. Tulips reached Europe from Turkey only in 1550, and their vivid and varied colors attracted much attention from the start. Prices for rare varieties began to rise in northwestern Europe. The boom reached its climax in Holland between 1633 and 1637 when thousands of persons invested in bulbs, hoping to sell them almost immediately at a higher price. Sometimes an especially precious bulb remained safely in the ground and was sold and resold at higher and higher prices until the bubble broke early in 1637. Many Dutch families suffered financial disaster because they had tried to get rich quickly by mortgaging homes and other valuables to enter the tulip market. Consequently the bust affected the whole

economy. Foreigners had also rushed to buy, so the bust extended more faintly to other parts of Europe.

The tulip mania differed from earlier boom and bust cycles by depending on widespread hope and the expectation of making a fortune almost overnight by speculating on the rising price of tulip bulbs—an object no one needed for anything but luxury display. Initial instances of attaining sudden wealth provoked a crowd reaction as thousands rushed into the market to get their share of the bonanza, pushing prices to ridiculous and unsustainable extremes. At the time, the Dutch were busy building an empire in the Indian Ocean, the Caribbean, and Brazil; Dutch trade flourished and the country's general prosperity may have been what allowed so many to invest so foolishly in tulips.

But this was not the only time that similar crowd behavior, seeking sudden monetary wealth, provoked comparable booms and busts. One of the most notable of these centered in France when a Scottish economic theorist and adventurer named John Law persuaded the government in 1716 to allow him to found a bank that would sell its stock to the public, have the right to issue paper money, and use its resources to develop the potential wealth of the territory of Louisiana in the Mississippi valley of North America. Law's bank prospered for a while when a rush to invest raised the price of its stock, as well as stock in several subordinated companies, very high. One of them took over tax collection in France itself and promised to pay off the entire royal debt. But there were doubters from the start, and when enough investors lost faith in Law's "system" for making money, the whole scheme suddenly collapsed in 1720. Law fled to Venice, leaving a host of angry and impoverished private investors, together with burdensome and disordered government debts, behind.

In 1718 a similar but less massive boom got underway in England when the South Sea Company, chartered to sell African slaves to the Spanish Empire in America, took a leaf from Law's book and persuaded Parliament to let it take over the national debt. For the next two years the two booms ran parallel. The price of South Sea Company shares multiplied almost

800 percent in the first months of 1720; in France shares in Law's companies rose by twice as much, and then both collapsed in just a few days. Subsequent investigation in England showed that government ministers had been bribed. They and the company's directors were disgraced, but the company itself survived until 1853, long after Great Britain had abolished the slave trade. Unlike the situation in France, government debt, managed by the Bank of England since 1694, was not much disturbed.

Industrial Revolution—Wars and Peace

Gains and losses from short-lived, get-rich schemes like these remained comparatively superficial as long as most of the population remained on the land, where they prospered or suffered from variations in the harvest but were little affected by financial shenanigans in the cities. Wars and the expansion of industry in parts of Europe changed, so that by 1815 a crisis of confidence among bankers, whose loans were needed to keep both factories and governments in operation, became capable of diminishing a whole nation's welfare.

This vulnerability started with the so-called Industrial Revolution in Great Britain. It was achieved between 1750 and 1815 very largely through a series of booms and busts driven by government borrowing for war expenditures in the periods from 1754 to 1763, 1776 to 1783, and 1792 to 1815. Borrowed money equipped the country's army and navy with vast quantities of cloth, guns, cannon, and other supplies. Accordingly, factories, forges, and mines rapidly expanded their capacity to supply the necessary materials, and faced hard times whenever government orders were suddenly cut back in peacetime. But the net effect of these long wars was to expand industrial production and employment, as first water power and then steam engines put new machines into motion, inaugurating cheap mass production of cloth and other commodities.

Warfare diminished after 1815, and peacetime rhythms of boom and bust began to manifest themselves

more insistently. Government expenditures ceased to dominate the business cycle; instead privately financed new technologies—railroads above all—took primacy. In 1825, the first steam-powered railroad demonstrated how dramatically even rickety rails and a tiny steam engine could lower overland transport costs. Almost at once private companies and then governments began to build railroads around the world. Initial costs for shaping a smooth and stable road bed were high and required large loans. Moreover, in the United States and Canada transcontinental railroad construction soon outstripped frontiers of settlement. This in turn provoked intensive land speculation wherever people thought a new town might arise along the track.

As a result, some profited and others lost from speculative investments, and alternating booms and busts became frequent. They often spread from country to country wherever railroading, land speculation, and related new technologies—steamships, telegraphs, Bessemer steel furnaces, and literally thousands of other novelties—kept on altering everyday lives.

In the 1850s a Frenchman named Clement Juglar was the first to suggest that a business cycle of eight to ten years had become normal. An unusually severe depression occurred in 1873, followed by another in 1893, and World War I (1914–1918) suddenly transformed peacetime economic behavior more drastically than ever before. In the light of this experience, in the 1920s a Russian economist, Nikolai Kondratieff, proposed a fifty-year cycle of expansion and contraction behind and underlying the shorter, more superficial ups and downs of market prices.

Since then economists have argued endlessly and inconclusively about exactly what caused booms and busts, and which governmental policies might counteract their troubling effect on human lives. After World War I, booms and busts became more damaging than before as farming ceased to employ the majority of the total population in more and more countries, and variations in harvest yields lost most of their former importance.

In most of the world, World War I was followed by a short depression, then a boom that lasted

until 1929; then came what is often called the Great Depression of 1929 to 1938. But Communists who had come to power in Russia in 1917 experienced a different cycle—destructive civil war, a brief return to small-scale private buying and selling, then forcible collectivization of agriculture and ambitious five-year plans for industrial construction. Resulting industrial expansion coincided with the Great Depression and seemed to show that Communists had solved the problem of boom and bust by resorting to official command and deliberate planning.

The onset of World War II (1939–1945) abruptly ended the Great Depression, and brought something resembling Communist-style command economies to all the principal belligerents. But in non-Communist countries, postwar return to free markets worked better than ever when efforts by central bankers to move interest rates up and down seemed for a while to have softened the impact of boom and bust, while the Russians and a new Communist regime in China struggled to repair wartime damages. Until about 1970, the Cold War between Communist countries and the self-styled “free world” was in stalemate by a balance of atomic terror. But by the 1990s a long-sustained economic boom, punctuated only by slender and short-lived busts in America and western Europe, began to outstrip the Russia’s achievements, where wasteful use of manpower and other resources hampered the command economy.

Chinese Communists forestalled comparable difficulties in 1981 by relaxing state controls and inviting peasants and other entrepreneurs to seek private profit by relying on market prices for whatever they produced. Thereupon, China launched itself on a sustained boom and soon far outstripped the rate of growth in the rest of the world. Russian Communists tried to follow suit in 1987 and 1988, but, unlike the Chinese, they provoked widespread impoverishment as inefficient factories shut down and political discontents boiled to the surface. The upshot was a surprisingly peaceable disruption of the Soviet Union in 1991. A diminished Russian republic emerged, which is still in pursuit of a satisfactory balance

between political and private management of economic affairs.

An Uncertain Future

A strange partnership spanned the Pacific as the Chinese boom became manifest. Americans started to buy cheap Chinese goods and outsourced manufacture to China on an unprecedented scale, while the Chinese government bought billions of dollars of U.S. bonds to keep their boom, and American prosperity, going. American national prosperity itself began to take on a feverish quality. Government expenses for war in Iraq and Afghanistan increased while tax rates for the wealthy were reduced, so budget deficits ballooned at the same time that cheap goods from China increased the trade deficit while also restraining some prices. But not all prices. When American bankers began to sell mortgages to marginal borrowers and then bundled thousands of them into a new kind of security called “collateralized mortgage obligations,” the price of housing rose even faster than the stock market. Irresponsible boom set in when more and more home buyers signed mortgages hoping to get rich quick by selling again at a higher price, just like those who had bought tulip bulbs in Holland 375 years before.

Thus the American and the global financial system headed for another bust. It arrived in August 2007, and has yet to be resolved in 2009. Initial efforts by the U.S. government to save banks and insurance companies from bankruptcy by loaning them billions of dollars have not forestalled rapidly mounting unemployment, and the world’s economic future remains profoundly uncertain. Even the Chinese feel threatened. Moreover, behind the financial bust loom problems of diminishing oil supplies, mounting environmental pollution, global warming, and other foreseeable difficulties. Most urgent of all, no one knows how, when, or even if, financial recovery will come.

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See also Currency; Famine

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Economic Growth

The term *economic growth* is used to indicate the increase of gross domestic or national product of a society; it can be divided into two categories. *Extensive growth* refers to increases that result from mobilizing more of the basic factors of production: land, labor, and capital. *Intensive growth* refers to growth that results from using the same factors more efficiently.

Economic growth is an increase in the total value of goods and services produced by a given society. There is little common agreement, however, on how best to measure this value. Many distortions are possible even in societies where most goods and services are provided by specialists and exchanged for money—so that prices provide some standard of measure of the relative value people assign, for instance, to a sack of rice, an hour of child care, an automobile, or a concert ticket. Measuring economic growth is still more difficult where economic activity is carried on outside the market, and thus not given a price that makes it comparable to other products. (For example, if hired cooks are paid enough each hour to buy five square meters of cloth, then we know something about how to add cooking and cloth making together in an index of total value produced; but if all families cook for themselves, it becomes much harder to know how to do that addition.)

Definitions

Despite these difficulties, it is widely agreed in principle that one can arrive at a total value for a society's economic production, and that an increase in this number—economic growth—indicates an increase

in material abundance in that society. Therefore, economic growth can have a significant influence on human welfare, though it does not automatically indicate material betterment; growth that is mostly directed toward building weapons, for instance, or growth that is so unevenly distributed that the number of very poor people is increasing would not do much to improve overall material welfare. Still, there is enough correspondence between economic growth and the capacity to meet material goals, whatever they may be, that in the twentieth century, measures of economic growth probably became the most widely used indicator for trends in aggregate human material welfare, both in the present and the past. Even those who are very skeptical of equating output with welfare usually agree that *something* important about a society is being measured when we measure the level and rate of change of its economic output.

Economic growth is usually further divided into extensive and intensive economic growth. This distinction is clear in theory but messy in practice. *Extensive growth* refers to an increase in economic production that results from mobilizing more of the three basic factors of production: land, labor, and capital. If a farmer who used to work 50 days a year sowing 20 pounds of seed on 10 acres of land begins to work 100 days a year and sow 40 pounds of seed on 20 acres, thereby doubling his crop, this is pure extensive growth. *Intensive growth*, on the other hand, refers to growth that does not require more factor inputs, but results from using these inputs more efficiently; this could result from new technology, a more efficient social organization of production, or increases in knowledge that make workers more efficient. If

Quiringh Gerritsz van Brekelenkam, *The Tailor's Workshop* (1661). Oil on canvas. During the “industrious” revolution, ordinary people worked more hours for the market—not just to get essentials but to acquire luxuries.



two people who used to each need a week to build a shelter start working together so they can build three shelters in that time—increasing their output without using any more materials or labor time—that is intensive growth.

Extensive growth comes with obvious costs and is presumably finite; on the other hand it is extremely common in world history, since it is an option open to any society with unused land, free labor hours, and so on. By contrast intensive growth can be nearly free, (though not entirely so, since considerable resources for research and development might be invested in figuring out how to do things better); in principle it is also infinite, since it requires no additional material resources. On the other hand, it is not obvious that every society at every time can experience very much

intensive growth. Consequently economic historians have devoted considerable attention to trying to identify which times and places have seen important bursts or sustained periods of intensive growth, and social and economic theorists have devoted just as much attention to trying to extract from these cases a general set of conditions conducive to intensive growth.

In practice intensive and extensive growth often occur together. If a new kind of plow makes it possible to grow grain on land that would not previously support it, the innovation represents intensive growth; but the extra labor, seed, tools, and so on needed to maximize the benefit of the innovation represents an extensive component. Many technical or social changes also result in a switch from using one kind of



input to another (from horses and hay to cars and oil, or from 50 hours of labor and a very cheap spinning wheel to a few minutes of labor and a huge machine); this may cause large changes in the relative value of these inputs. An hour of a handloom weaver's labor bought three or four days worth of food in parts of eighteenth-century China; today that labor is worth very little. It can be very hard, therefore, to decide how much of a given episode of growth to assign to the intensive or extensive category. Still any understanding of the changing material life of humans requires trying to sort this out.

Three Eras of Growth

Though it is hard to prove, most growth prior to the nineteenth century is regarded as having been extensive, resulting from more people expending labor on more of the Earth and its products. On the other hand, most growth in the nineteenth and twentieth centuries has been intensive. Systematic science has increased the speed with which new ways of doing things are discovered and disseminated, and supposedly more-efficient forms of economic organization have diffused around the world under the increased competitive pressure wrought by improved transportation and increased trade.

As a very rough approximation, this is probably correct, but any full story would be much more complicated. A fuller analysis shows that three critical eras account for most of the economic growth in human history, and that the combination of intensive and extensive growth is different in each case.

Neolithic Revolution

Through the millennia during which people were hunter-gatherers, there were many examples of unrecorded intensive growth: gradual improvements in hunting techniques, expanding knowledge of what plants were edible and how to find them, and so on. Studies indicate, however, that these did not lead to substantial increases in per-capita income, because people who were often on the move had no incentive to accumulate possessions, unless these possessions

could walk, and the only animal that seems to have been widely domesticated well in advance of the emergence of settled farming was the dog (used in hunting). Thus whatever economic growth there was in the long period from the first emergence of humans until about ten thousand years ago was mostly reflected in population growth, as people spread out of Africa and gradually covered all the habitable portions of the Earth, probably by roughly thirty thousand years ago.

The efficiency gains from learning to do things better also enabled particular bands of humans to feed themselves with fewer hours of labor—an important improvement in human welfare, but one that does not show up as economic growth. Studies of modern hunter-gatherers suggest that they eat reasonably well with a work week of fewer than thirty hours per adult. Thousands of years ago, before agricultural and industrial societies pushed them onto marginal lands, these people could probably feed themselves with less work.

The first concentrated burst of intensive and extensive growth, then, was probably the so-called Neolithic revolution: our name for a cluster of innovations that includes settled farming, the domestication of animals, and the construction of permanent settlements. Controversy continues about how and why this process occurred—and it seems to have occurred independently in at least six places in the world. In the short run, these developments did not make life easier for individuals. Early farmers lived no longer than their nomadic ancestors, and they almost certainly worked much harder. Skeletal remains suggest they were shorter (which usually means less well nourished) and suffered more injuries of various sorts. They certainly suffered more from contagious diseases, as people occupied large-enough settlements for various diseases to become endemic, and as they stayed for long periods in proximity to their own waste, and to animals that hosted diseases.

On the other hand, settled societies could achieve far-higher population densities, because each acre of land in settled areas was now devoted only to plants

useful to humans, and human activity—such as weeding and watering—increased the yields of these favored species. Staying in one place also made it easier for women to have more children, since children did not need to be carried as much as they did in migratory bands. For the same reason, settling down also facilitated the accumulation of material possessions. The overall result was substantial economic growth: more people and more output per person resulted from both an increase in inputs (more laborers, each working more hours on average) and eventually from greater efficiency. Permanent settlement also facilitated the storage of food and thus the feeding of people who themselves might not produce food. This made greater occupational specialization possible, which in turn facilitated the discovery and diffusion of knowledge, manifested in the rise of advanced construction, metalworking, cloth making, and many other skills.

Thus intensive growth encouraged extensive growth, and vice versa. Within a few thousand years of the first agricultural settlements there grew cities, governments, and writing—as well as far greater human inequality, which both reflected the accumulation of goods and served as a spur to further accumulation. While no good numbers for economic growth exist for this period, estimates of human energy consumption are a useful (though very inexact) proxy. A very rough estimate is that in the era of hunter-gatherers, perhaps 6 million humans each directly or indirectly used about 5,000 calories per day, for a total of 30 billion calories per day worldwide; by 5,000 years ago, perhaps 50 million people burned an average of 12,000 calories per day, for a total of 600 billion calories. Including improvements in the efficiency with which energy inputs were turned into output of human goods, economic growth in this period exceeds 2,000 percent; but since this was achieved over perhaps 5,000 years, the annual growth rate was still minuscule.

From perhaps 5,000 years ago to roughly 500 years ago, economic growth was primarily a matter of slow extensive growth—mostly clearing forest or jungle to create more farmland and accompanying

population growth. The global population reached perhaps 500 million by 1500 CE, for a growth rate of less than 0.1 percent per year. Technical and institutional innovations also continued, but slowly. Not only was the rate of invention slow compared to the last century or two, but the rate at which new techniques spread across the world was very slow, due to limited communications. Iron plows, paper, and other very useful innovations took centuries to spread from China, where they were invented, to the other end of Eurasia, not to mention to the Americas or Australia; the manufacture of paper, for instance, is noted in China in about 100 CE but not in Europe until after 1200. Productivity-enhancing institutional innovations, such as the growth of markets in land and labor, were often even slower to spread, since they threatened the vested interests of those who controlled these resources by force. It was also probably common for useful innovations to be lost periodically, since small societies were easily disrupted and much of their knowledge was never written down.

Innovations occasionally came in clusters, as in Song China (960–1279), when breakthroughs in water control, rice growing, silk reeling and weaving, navigation, and time keeping were all invented in a relatively short time. Whether coincidentally or otherwise, Song China also saw a marked institutional shift away from self-reliant estates that made heavy use of compulsory labor; instead people at all levels of society began to rely more on markets and to specialize in a few goods or services they could sell in exchange for others. The growth of markets was certainly not new or unique to Song China, but that appears to be where it first reached the critical level at which the process became self-sustaining. This pattern of commercialization spread outward from China and a few other centers, though the degree to which it prevailed in any particular society remains controversial among historians.

Migrations and conquests could also suddenly spread a great many innovations all at once. Muslim conquerors spread rice, sugar, oranges, cotton, and other crops westward, having earlier obtained these

London, Liverpool Street Station (c. 1910). During the industrial age, railways enabled goods, materials, and people to travel great distances in a short time, spurring economic growth.



plants via trade with India; they also played a very important role in spreading Persian irrigation techniques and medical techniques derived from India, the ancient Mediterranean, and the Arab world. But more often, centuries separated major inventions, and they spread rather slowly. By Roman times, agricultural yields in parts of Italy had reached levels that would not be exceeded until 1800 (though the number of places in Europe achieving those yields increased as efficient practices slowly spread). The same was true of the most productive farms in eastern China, which by 1200 (at the latest) had reached yields not reliably exceeded until well into the twentieth century. Even within the small space of England, the top wheat yields on medieval manors set a standard that did not become common until roughly 1800. Every piece of land is subtly different from others in soil chemistry, drainage, sun and shade, and so on, and before the advent of modern chemistry, adopting what worked on somebody else's farm was a laborious trial-and-error exercise for even the best-informed and most diligent farmers.

By the fifteenth century, however, a new phase of growth was beginning to appear in various parts of the world, composed of three loosely related elements: more rapid population growth and land clearance (extensive growth); an "industrious revolution," in which people began to work longer and harder (extensive growth) but also more efficiently (intensive growth); and technological change, which increased

slowly before accelerating sharply in the Industrial Revolution of the nineteenth century.

The Industrious Revolution

Populations across Eurasia recovered from the fourteenth-century plague during the following century, eventually reaching previous peak levels; but this time, they didn't stop: for reasons that are unclear, world population had reached almost 1 billion by 1800, roughly twice its previous peak. Land under cultivation also increased, though not as fast as population: frontiers were pushed back in eastern Europe, southwest China, the interior of India, the Americas, and many other places. In many cases, the advance of cultivation went along with small but significant technical improvements: new seeds better suited to harsh conditions, better water pumps for irrigation, improved knowledge of crop rotation. At the same time, yields per acre rose, though often painfully slowly. For instance, the practice of double-cropping—squeezing in a second crop on the same piece of land in one year—became much more common, especially in east and south Asia. This helped support more people, but the second crop often yielded less output for each day of work than the primary crop. In nonagricultural occupations as well, output rose, but hours worked seem to have risen even faster.

In Europe, where the best data exists, the number of hours of work required to earn a day's food



soared during the fifteenth and early sixteenth centuries, and then took a very long time (in some cases into the 1930s) to return to early fifteenth-century levels. Consequently, families worked more hours per year to make ends meet: men worked longer, more women worked for pay, and more children worked as well. One study suggests that the average work year for adult males rose over 20 percent in England just between 1760 and 1800. Though evidence elsewhere is spottier, a similar “industrious revolution” appears to have occurred in other parts of Europe, China, Japan, colonial North America, and perhaps parts of India. Meanwhile, slaves in the New World, particularly on sugar plantations, were being worked as hard as any labor force in history.

The slaves had no choice, but why did so many free or semifree people begin to work much harder? Some of them had no choice either: as birth rates rose there were more mouths to feed, and the availability of more laborers also tended to drive down workers’ earnings per day. But a cultural shift was at work, too.

With more days of work required just to earn the family’s food, people might have been expected to buy fewer nonessentials, or at least not more of them. But instead, ordinary people in various parts of the world appear to have purchased considerably more clothing, specialty and processed foods, and household goods and services in 1800 than in 1500. (Again, the evidence is most detailed for western Europe, but it points the same way for various parts of east Asia, North America, and perhaps elsewhere.) In other words, people worked more hours for the market, not just to get essentials, but to acquire various little luxuries: sugar, tobacco, silver jewelry, tableware, and more. This was mostly a matter of extensive growth, but it also relied in part on improvements in technology (more efficient shipping that facilitated trade, for instance) and changes in social organization, especially greater labor specialization. For instance, many people gave up making their own candles and began buying them instead, while putting the hours saved into making more of whatever they in turn specialized in (say, cloth) and selling it.

The resulting gains in efficiency from increased interdependence, though hard to measure, were considerable. And once again, extensive growth (more land and labor inputs) and intensive growth (social and cultural changes that created more efficient marketplaces with more attractive goods available, perhaps acting as incentives for people to work harder to get them) were so sufficiently intertwined that they are hard to separate. In fact more efficient labor markets may even have helped create the population growth that increased the labor supply. The gradual freeing of people in various places from forced labor obligations and restrictions on migration, improvements in the availability in labor markets of information about opportunities elsewhere, and greater opportunities for commoners to acquire land all meant it was easier for young people to start their own lives and families without waiting for their parents to give them land, or a shop, or some other productive asset. The result frequently was earlier marriage and higher birth rates. At the same time, denser population increased the possibilities for specialization—only a community of a certain size will support a full-time carpenter or weaver—and set the stage for intensive growth.

The increased long-distance trade that resulted from advances in navigation and shipping also fueled growth during the industrious revolution. Exotic new goods, mostly from the tropics, proliferated, and they were often at least mildly addictive: sugar, cocoa, tea, coffee, and tobacco. These fueled the emerging consumerism of people in Europe, China, and elsewhere, and generally had to be obtained through the market: of the crops listed above, only tobacco could be grown in the temperate zones where the largest and wealthiest collections of consumers were found. Meanwhile, potatoes, corn, and other new crops made food production possible in places where no known crop had grown before, especially at high elevations. Enormous new fisheries off the North American coast provided cheap protein. And the knowledge of strange new worlds—which was collected above all in Europe—did more than just provide practical new ideas; it also shattered old systems of knowledge,

intensifying the search for new ways to understand the natural world. The new thinking that emerged did not produce the modern sciences and science-based technologies until the nineteenth century; but when they did, they transformed almost every branch of economic activity.

This “industrious revolution,” however, could not go on forever, and it also did not yield vast increases in output per person. While global population doubled from 1500 to 1800, output perhaps tripled, so that output per person rose about 50 percent in three hundred years. The critical constraints were in the area of agroforestry and energy. Broadly speaking, all the basics of human life—food, construction materials, clothing fiber, and energy—came either from vegetative growth (grain, lumber, cotton or flax, firewood) or from plant-eating animals (meat, leather, animal locomotion), which meant from the combination of land, fresh water, and sun. Supplies of these could not be increased on demand, creating difficult trade-offs: more farmland, for instance, meant less forest, and thus less lumber and firewood. The result, in several of the most productive places in the world, was a serious energy shortage, which placed limits on economic growth.

The Industrial Revolution

The solution to this energy shortage was the development of fossil fuels: first coal (and to a lesser extent peat) and later oil and natural gas. While coal, in particular, had been used to some extent in many places over the centuries, Great Britain was the first society to use it on a truly massive scale for its everyday needs. A number of factors contributed to this. First of all, Britain had lots of coal, much of it very conveniently located. Second, it was badly deforested relatively early, making the switch to coal (and to stone for building) imperative. Third, technological developments, especially in metallurgy and precision boring, facilitated the development in England of the world’s first economically viable steam engines, which were essential to pumping water out of the coal mines. Without steam power, it has been estimated, British coal mining could not have expanded beyond its



An impoverished woman breastfeeds her baby in Tijuana, Mexico. A great disparity in wealth exists between the world’s poorest and richest citizens.
Photo by Kevin Connors (www.morguefile.com).

level in 1700; instead it multiplied sevenfold by 1815, and almost 100-fold by 1900. Coal mining elsewhere grew even faster in the late nineteenth century, albeit from a smaller base. And in the twentieth century, the increased use of oil and natural gas—fuels barely used at all before modern times—has made possible even more staggering increases. The average human uses ten to twenty times as much energy today as before the Industrial Revolution, and in rich countries, the figure is higher still.

The staggering quantities of energy thus made available, combined with a wave of other technological innovations, ushered in by far the greatest surge of intensive growth in human history—one that has continued for roughly two hundred years thus far, gradually spreading from a few pockets in Britain and elsewhere in northwestern Europe to much (though not all) of the world. While global population has risen a bit over 500 percent since 1800, economic output has risen over 4,000 percent; industrial

Commerce is the great civilizer. • Robert G. Ingersoll (1833–1899)

production may have risen 10,000 percent since 1750. About half of all economic growth in human history, as best as it can be measured, has occurred since 1950. Since that growth far exceeds the growth in land and labor inputs, most of it is a combination of additional capital inputs and intensive growth: technological and institutional changes that make labor, capital, and land use more efficient. It is very hard to measure the effects of capital apart from technology, since so much capital enters the economy in the form of new machines, but there is no doubt that much of this prodigious growth is intensive. The development of far more systematic natural sciences has led to a steady stream of new productivity-enhancing technologies. In earlier eras, by contrast, technological change usually came in the form of single innovations or small clusters, and exhausted itself when a boom in the innovative industry created a shortage of some particular material. (Improvements in metallurgy, for instance, often led to such massive deforestation that the metal works ran out of fuel.) And the advantages in military and political power that were conferred by industrialization were so great that governments everywhere tried to change their institutions to facilitate economic growth. Indeed, gross national product per person is probably the single most widely used index of the success or failure of societies in today's world—even though this measurement was invented only in the twentieth century, and most economists would agree it is only a very rough measure of human welfare. The United Nations' Human Development Index is an increasingly used alternative that seeks to measure human development factors beyond the realm of economics.

For all the diversity of technological changes involved, much of the story of post-1800 growth is that of the fossil fuel revolution in its many applications. It surfaces as transportation that has transformed the global division of labor (making it possible to a greater extent than ever before for people to depend on very distant places even for essentials), as chemical fertilizer and pesticides that have raised yields per acre to unheard-of levels (greatly reducing the extent to which the finite supply of land constrains

production), as plastics and other new materials that substitute for other resources, and as machinery that substitutes for the muscles of billions of people and animals. Thus labor supply does not currently limit production very much, either; the problem, on the contrary, is a surplus of workers, or workers who are not in the places where they are most needed.

Growth in the Contemporary World

While global wealth is very unequally distributed, and poverty remains a huge problem in much of the world, the modern economic era is unparalleled in at least two ways. First, the world economy has grown to the point where everybody could theoretically have more material goods than even the privileged had in most societies until quite recently. Second, the major constraints on even further growth are probably not so much the old ones of limited land, labor, and capital, as they are the environmental damage that may result from continued extension of our energy-intensive production methods. At the moment, the threat of global climate change from continued production of greenhouse gases (a by-product of all fossil-fuel burning) is probably the most widely discussed, but the long-term effects of making, burning, using, and dumping many other chemicals invented in the last two centuries—most of them, in one way or another, derivatives of coal or oil—pose a number of other poorly understood threats.

In the last few decades, major economies have become less fossil-fuel intensive, meaning they burn fewer fossil fuels per dollar of economic activity. Decreasing the energy intensity of the economy is also a high priority for China and India, two of the world's largest developing economies. But because the total amount of economic activity continues to grow, so do worldwide fossil fuel consumption, global warming, and various other kinds of environmental damage. It remains to be seen whether less-damaging energy sources can become a significant part of the world's power. None of this means we are likely to see an end to economic growth any time soon, but it does mean that how we think about growth and its costs may change. Even

intensive growth may no longer be the “free lunch” it has sometimes seemed to be. In combination with the global economic and financial crises that emerged out of the United States in 2007 and severely impacted economic growth throughout much of the world, the effects of climate change, such as resource scarcity, have raised some serious questions about sustainability and the pursuit of economic growth at any cost.

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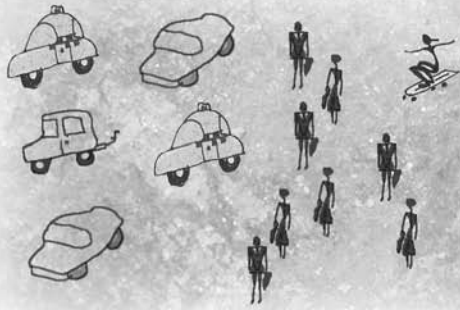
See also Industrial Revolution; Trade Cycles

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Ecumenicism

Generally, ecumenicism is associated with the Christian tendency to promote religious unity, but the term more loosely refers to a desire for global cooperation among all religions. Ecumenicism dates back as far as the split between Rome and Byzantium in 1054. In modern times, ecumenicism was seen during European colonial expansion and again as those colonies gained independence and began their search for religious freedom.

Ecumenicism refers to the striving for reconciliation and unity across the diversity of Christian denominations. To a lesser extent, it can also mean a looser goal of harmony among religions, both Christian and non-Christian. The term *ecumenicism* comes from the Greek word *oikoumene*, designating the entirety of the inhabited Earth (in the scope of Greek knowledge, roughly the lands from the western Mediterranean to India). It is one among many modes of universalistic thinking in world history.

Premodern Ecumenicism

The first wave of Christian ecumenicism occurred in the centuries after the split between Rome and Byzantium. The fairly short-lived unity of early Christendom had rested on the success of the Council of Nicaea (325 CE) and Constantinople (381 CE) in stamping out heretical sects, and of the far-reaching rule of the Roman Empire, which had adopted Christianity as its official religion in the fourth century. The division between the Latin West, centered on Rome, and the Orthodox East, centered on Byzantium, came to involve differences deeper than mere

politics: a divergence of ideas about state–church relations, the relative strength of Roman and Greek cultural legacies, and so on. When the crusades brought more intense contact between western and eastern Christendom, the greater visibility of contrasts only worsened the state of ill will. Ecumenical thinking in these centuries revolved around the perceived need to restore the unity of Christendom as one expanding community of believers defined by correct doctrine and loyalty to one organized church (in practice, given the greater Western interest in ecumenicism, the Catholic Church with its pontiff at Rome).

To a lesser extent, the same kind of thinking appeared in sixteenth- and seventeenth-century western Europe. The Protestant Reformation had put an end even to the unity of western Christendom, which had rested on the cultural-religious-intellectual syntheses of Aquinas, Dante, and the like. Despite these multiplying political and doctrinal divisions, the ideal of a single universe of believers lingered throughout Christianity's second millennium. Much as in the other major Eurasian civilizations, a fragmented reality was being measured against the standard of a unified golden age. It was believed that cleavages of nation, race, and class should properly yield to the ultimate solidarity of the faithful.

Of course, broader ecumenical patterns of thinking had long allowed intellectuals to imagine unity, or at least convergence, across the boundaries of sect and rite. Mystics within the world religions have often believed that ultimate spiritual truth, being higher than any doctrine or practice, cuts across the world religions. The most ecumenically



The Indian religious leader Swami Vivekananda played a leading role in bringing Hinduism to the attention of the Western world in the early 1900s.

minded groups have included world renouncers like the gnostics, the Sufis, and the Upanishadic forest dwellers. But even more mainstream theologians in each of the world religions have found ways to justify interreligious openness. For medieval Catholics, there was the idea that other religions, even if they lacked the crucial centrality of Jesus as savior, at least reflected natural law and an innate human tendency to seek the divine. Islam had a framework of respecting other religions, such as Judaism, Christianity, and Zoroastrianism, as legacies of earlier divine revelations that had become distorted over time. And the various branches of Hinduism tended to imagine all religions as alternative paths to the same goal. This kind of ecumenical openness has been a recurring theme in those world-historical encounters that go beyond trade and migration into the more challenging realm of intellectual dialogue. Religious cosmopolitans have always tried to step back from superficial differences of practice and

symbolism, to find common ground in divine or human nature. Examples include the interreligious councils of Akbar and Abu'l Fazl in Mughal India, and the entry of Jesuit missionaries to Confucian China in the 1500s.

Ecumenicism in Modernity

The twentieth century saw a second major wave of Christian ecumenicism. At first the need for a common front in European colonial missionary activity drove the search for unity, especially across the Protestant denominations. The 1910 World Missionary Conference at Edinburgh is often seen as the start of this ecumenicism. Later, the broadening of ecumenicism to encompass Protestant, Catholic, and Orthodox branches of Christianity responded to other pressures, like the crisis of secularization in the West. Many Christians saw fragmentation as due to petty squabbles, and as an obstacle in counteracting the broader decline of religious belief among the peoples of the developed world. Social and geographic mobility also increased many believers' desire to cross-denominational boundaries and do such things as take communion together.

In the later twentieth century, ecumenicism often took on a more leftist cast. The rise of national Christian churches in newly independent African and Asian countries broadened the base of transnational ecumenical bodies like the World Council of Churches. Issues of human rights, nuclear disarmament, and social equality figured more prominently in ecumenical circles from the 1960s onward. Efforts have aimed mainly at enhancing practical cooperation, moving toward mutual recognition of baptisms and marriages, and overcoming thorny debates over the historical roots of priestly authority. Ecumenicism has tended to draw support mainly from high-culture establishment versions of Christianity like Anglicanism and Catholicism, and from the more liberal currents like Unitarianism. Opposition has remained strong among Evangelicals and others who consider it misguided to downplay core doctrinal commitments, or who for

I love you when you bow in your mosque, kneel in your temple, pray in your church. For you and I are sons of one religion, and it is the spirit. • Kahlil Gibran (1883–1931)



Thomas S. Sinclair, *Christian Union* (c. 1845). Lithograph. Protestant clergymen officiate at the altar of the New World flanked by the lion and lamb, iconic symbols of Christianity, while a Native American man and an African slave gesture toward a dove, symbol of peace.

various reasons dislike the political agendas that ecumenicism has embraced. Often the strongest voices of present-day religious resurgence, such as born-again Christians, have affirmed their identities in a way that leaves little room for ecumenical bridge-building.

Broadening Horizons in World Religions

In the last few decades, the scope of ecumenicism has also expanded to include openness to non-Christian religions. Theological dialogues with Jews and

Muslims, who share many of the same historical and metaphysical reference points, are one example. The broadening of ecumenicism also reflects a growing Western interest, especially since midcentury, in Asian religious traditions such as Buddhism. Ecumenically minded clergy and laypersons alike often look beyond Christianity for sources of meaning in a disenchanted modern world, and for potential allies in an era of growing secularization. This interest in the non-Christian traditions is loosely analogous to the way the study of world history itself has been broadened, and the effort to overcome earlier Eurocentrism



in how Westerners made sense of their place in the world.

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See also Religious Freedom; Religious Synchronicity

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Education

Education—the process of learning and teaching—has taken many forms over millennia, from storytelling, oral instruction, and imitation in hunter-gatherer societies to the formal, specialized, and (often) lengthy schooling afforded students in today’s industrialized world. Although the history of education is traditionally told nation by nation, rather than from a global perspective, passing our collective knowledge to future generations is central to the human experience.

Education is a word used in many ways. Its Latin roots, *e* (“out”) and *ducere* (“to lead or draw”), suggest the meaning “to lead out or draw forth.” Education can be defined as learning and teaching, both informal (in daily life) and formal (schooling). Learning from experience and observation can occur without teaching, and, of course, teaching can occur without learning. Education can also mean the study of learning and teaching.

The Uniqueness of Humans

Learning, defined as modification in response to specific experience, certainly occurs in other animals; how far back hasn’t yet been determined. Other animal learning can be classical conditioning, as in Pavlov’s experiments, or operant conditioning, in which an animal is rewarded for chance behavior. It can be observational learning, or modeling, as birds learn their songs or wolves learn hunting behavior. A third kind of other animal learning, called insight learning, occurs when some animals

like chimpanzees, ravens, and other birds are able to solve problems the first time they encounter them. In every species the balance between genetically determined and learned behavior varies; humans are unique in the large portion of their behavior that is learned.

Humans are unique in other ways. Our capacity for language and communication far exceeds anything in the rest of the animal world. Our talent for syntactical, symbolic language permits us to exchange and pass on our knowledge so precisely that over time it accumulates. This talent, combined with the long dependency of juveniles on adults, has meant that humans accumulate collective learning in ways strikingly different from other animals. Since this is so, education lies at the heart of human life, in ways unlike those of any other animal, changing over time as human culture has evolved.

The Foraging (Paleolithic) Era

More than 95 percent of human history took place during the foraging (Paleolithic) era of hunter-gatherers, even if almost as many humans are alive now as during that entire period. Archeologists have found little to indicate how education took place in that society; we can only surmise based on knowledge of current hunter-gatherers.

Direct observation and imitation surely occurred during the foraging era. Given the human gift with language, however, storytelling and oral instruction must have played increasing roles in the education of the young as culture evolved. In the earliest years, when humans lived in small bands of twenty



Members of a Bushmen tribe keep alive the ancient tradition of handing down history through stories and song. Photo by Urša.

to sixty, young humans learned from their parents, extended family, and kin. As human societies expanded into tribes and chiefdoms, the young, as they reached puberty, must have experienced more structured social experiences, such as rituals and initiations.

Hunter-gatherers accomplished amazing feats: they migrated out of Africa into new environments around the world and survived harsh ice ages. To do this, they had to develop increasingly complex skills and to pass them on to their offspring. These skills included developing new tools and techniques, chipping stone tools, hunting large animals, creating sophisticated art, sewing furs into warm clothing, building shelters, cooking, and navigating terrain.

Two examples suggest the collective learning passed down by hunter-gatherers. The San bushmen of the Kalahari Desert in South Africa have survived for millennia. The women use a blanket and smaller carry bags, a hide sling, and an all-purpose wooden digging stick. The men use a bow and poison-tipped arrows, plus a small spear, to hunt small animals. They have named some 260 species of wild animals and collect more than 100 species of plants. The Inuit of Alaska and northern Canada have survived for millennia with fur clothing, canoes, and hunting equipment all made from stone, bone, tusk, and antlers. The techniques of San and Inuit adults, plus immense knowledge of their environment, are successfully passed to their children by means of imitation and direct oral instruction.

Education in Early Agricultural Societies

When people began domesticating plants and animals about ten thousand years ago, they also domesticated themselves to live in settled communities and tend their flocks and fields. Settling down into a village, and later into town life, constitutes the most significant change in human ways of life, the first step toward the high density and complexity of current human culture.

With village life people began manipulating nature, rather than simply relying on it. They increased their interaction with certain plants and animals, learning enough to take over their care and their genetic development. Collective learning began to accelerate; new tools (spades, scythes, mortar and pestle, hand axes, plows) and new techniques (carpentry, weaving, pottery, and religious practices) appeared. With settled life, people could support more children, and they needed them for labor. The human population began a steeper increase, estimated from less than 10 million to 50 million in the five thousand years from 8000 to 3000 BCE.

Yet no formal schooling emerged, as far as we know, nor any need for systems of writing. Everything known could still be passed down through observation and imitation, oral instruction, rituals, and storytelling. Gender roles were becoming more specialized, but otherwise people were still generalists; they had to learn at least most of skills assigned to their gender, which mostly took place within the household.

These assertions about learning and teaching during agricultural time are difficult to substantiate. Archeologists do not find evidence of how education took place before written records and substantial buildings. We can only surmise based on what is known from the archeological record about life in agricultural times and from current examples of agricultural societies, none of which is entirely free of the influence of modern life.

Education in Early Civilizations

As populations increased in density and towns grew into cities, some human societies began to take on



A section of the Diamond Sutra scroll (c. 868 CE), the oldest known printed and dated book in the world, was discovered in China's Dunhuang caves in the early twentieth century.

a constellation of new characteristics. These societies are technically called civilizations, or agrarian civilizations to emphasize their dependence on their surrounding agriculture. This happened all over the world, largely independently. Early agrarian civilizations include Sumer (about 3200 BCE), Egypt (about 3100 BCE), the Indus Valley (about 2300 BCE), northern China about 1700 BCE, the Classic Maya (250–800 CE), the Aztecs (late fifteenth century to early sixteenth century CE), and the Inca in the Andes (early sixteenth century CE).

Not all of these early agrarian civilizations shared exactly the same characteristics, but all had a high density of population concentrated in cities, a surplus of food, ranked social stratification, specialized occupations, and coercive forms of taxation. Most developed a system of writing and notation. With this transformation of human society came a transformation of education: formal schooling emerged as apprenticeships developed for learning specialized occupations, and schooling was organized for the tiny elite fraction of the population who learn to read and write.

Schooling often began by being attached to the royal court; sons of nobles joined the kings' sons in

learning law and administration. For example, in Egypt the only school in the Old Kingdom (c. 2575–2150 BCE) was attached to the royal court. As the need for scribes and administration increased, other small schools appeared where boys studied from age five to ten, and then were apprenticed in administration. From the mid-third millennia BCE to the mid-second millennia BCE the number of literate Egyptians probably would not have exceeded 1 percent.

For an early civilization, the Aztecs were unusual in having mandatory schooling for all—girls as well as boys. Every *calpolli*, or ward of related families, had its own schools, of which there were two kinds. Young commoner women attended *cuicacalli*, or houses of song, to learn songs, dances, domestic crafts, and childrearing. Young commoner men were trained to be warriors. Every *calpolli* had to provide four hundred soldiers under command of its own officers, trained at a school called a *telpochcalli*. Boys started school at puberty and attended until their midtwenties, when they withdrew to marry. Students ate with their families, but slept at the school, to avoid drunkenness and sexual license. They first entered battle at age twenty. Sons of nobles attended different



schools (*calmecac*) attached to temples, where they received more intensive administrative and religious education in addition to military training. Sons of gold workers and feather workers learned the details of Aztec religious iconography by attending schools for nobles or their own version of such schools.

Education in Developed Civilizations

As civilizations developed around the world, many schools and learning centers still depended on state or imperial governments and on religious institutions, but a few were independent entities; free public schools sprang up in China in the late thirteenth century under one Mongol ruler of the Yuan dynasty who believed it would improve everyone's lives.

India

As agrarian civilizations developed in Afro-Eurasia, large-scale religion also developed with the spread of literacy beyond the royal courts—Hinduism, Buddhism, Confucianism, Judaism, Christianity, and Islam. These religions set up centers of learning, as exemplified by Taxila, a Hindu and Buddhist center near the present city of Islamabad, established in the sixth century BCE. The greatest Indian center of learning, Nalanda, in eastern India near Nepal, was founded as a Buddhist monastery in the fifth century CE and grew to house up to ten thousand students, flourishing until the twelfth century CE. It attracted students from Turkey to Korea, with a nine-story library housing hundreds of thousands of volumes.

Greece and Rome

In the classical Greek city-states of Athens and Sparta, strikingly different modes of education were available. In Athens the state provided two years of military training. Other education was private; anyone could open schools and charge tuition. Girls rarely received any education. Schools of higher education developed—the Platonic Academy by Plato and the Lyceum founded by Aristotle. In Sparta girls did receive a formal state education and boys were taken

at age seven to school dormitories and taught little other than sports and fighting. Literacy in classical Greece is estimated at no more than 5 percent. Rome had many private schools charging admission by the second century BCE; there literacy rose to probably not more than 10 percent.

China

During the Zhou dynasty (1045–256 BCE) China had five “national” schools for aristocrats and nobility. Confucius formulated his ideas in the early fifth century BCE, and by 124 BCE the Emperor Han Wudi set up an Imperial Academy based on a curriculum of the Five Classics of Confucius. A civil service nomination system, set up during the third century CE, developed during three more centuries into an imperial examination system, which gave rise to schools that taught the Chinese classics. This system was used until 1905, except when interrupted under Mongol rule of China. Khubilai Khan (reigned 1260–1294) believed that free public education for all children could improve everyone's quality of life. His government created many public schools, which used colloquial rather than classical Chinese to help students learn faster.

Two Chinese innovations—papermaking and printing—had implications of global dimensions for the exchange of information, mass literacy, administration, and scholarship. A court official, Cai Lun, developed paper production in the early second century CE. Experiments in woodblock printing began about 600 CE, and by the eleventh century the Chinese printed some texts with movable ceramic types that were affixed to a metal plate and rubbed by hand on paper—but they did not put this technique into general use. Papermaking spread to Korea and Vietnam by the fourth century, to Japan and India by the seventh, to the Islamic world by the eighth, to Muslim Spain by 1150, to France and Germany in the 1300s, and to England in the 1490s. Printing reached Korea (where types were sometimes made of bronze) and Japan, but it was resisted by the Islamic world, which valued handwritten calligraphy, and was delayed in Europe because of the absence of paper until the



Students and their teacher in India. Our capacity for language and communication, combined with the long dependency of juveniles on adults, has meant that humans accumulate collective learning in ways strikingly different from other animals.

Photo by Ajay Singh.

fourteenth century. Johannes Gutenberg developed movable type from metal alloy in the fifteenth century; it is not clear whether he was aware of Chinese and Korean precedents.

Islamic World

By the sixth century CE Persia had a flourishing Academy in the city of Gundishapur, the intellectual center of the Sasanid dynasty (224/228–651 CE). It included Zoroastrian, Persian, Greek, and Indian learning, especially in medicine. For the ninth through thirteenth centuries the intellectual center moved to Baghdad, built in the 760s just as the process of papermaking was learned from Chinese prisoners of war. Cultured Muslims were devoted to books, substituting linen rags, beaten to pulp, for the hemp or mulberry bark used in China. In early Islamic days mosques carried out schooling, but by the ninth century schools became separate from mosques. Called *madrasas*, these schools granted academic degrees at various levels and are sometimes called the first universities, though they were more like colleges. Probably Arab scholars carried out the most advanced science in the world from about 800 to 1400 CE.

In the fifteenth and sixteenth centuries Timbuktu (now often spelled Timbuctou), in the current West Africa nation of Mali, became an Islamic center of learning. It was home to Sankore University and other *madrasas*, whose primary focus was on the Qur'an

but also included logic, astronomy, and history. More than 100,000 manuscripts were held in libraries in Timbuktu.

Europe

After the disappearance of the Roman Empire, monasteries of the Catholic Church were centers of learning in Europe. The first emperor who united most of Europe after the Romans, Charlemagne, king of Franks (reigned 768–814 CE), provided for monastic schools and centers for book copying. Monasteries in the twelfth and thirteenth centuries, particularly in Spain, provided a large number of Greek and Arabic translations, especially in medicine and science. Universities emerged in Europe from the early second millennium. They enjoyed unusual autonomy from both church and state as separate corporations in charge of themselves, in contrast to Chinese and Islamic centers of higher learning. In the early twelfth century the Catholic Church mandated that every cathedral provide free education for poor boys. Gradually by the sixteenth to eighteenth centuries, education became more widespread.

Education in Modern Industrial Nations

When the explorations of Spanish and Portuguese sailors joined the world's two hemispheres, a new era of world history began. It produced another turning point in world history, the Industrial Revolution, characterized by the burning of fossil fuels and the surplus of resource extraction beyond even rapid population growth. Unlike the agricultural revolution, the Industrial Revolution emerged independently in only one place (Britain) and spread first to nearby or related places in western Europe and the United States, with a resulting domination of the world by Western nations through the twentieth century.

The Industrial Revolution fostered the development of the modern nation-state, with its increased bureaucracy and involvement in the daily life of its citizens, upon whose support the state increasingly depended. Education for political participation became a vital

part of industrialization. In Europe and the United States, as industrialization spread in the nineteenth century and child labor laws were enacted, most governments began to provide free compulsory primary education for all their citizens, giving the state power to remove children from the tutelage of their parents for part of the time. In Japan, under the Tokugawa shogunate (1600/1603–1868), samurai leaders provided sufficient schools to achieve a literacy rate of about 40 percent by 1848, a condition that helped Japan begin rapid industrialization. In Russia, with a literacy rate less than 30 percent at the beginning of the twentieth century, the new Communist government in 1919 focused on universal compulsory education for children and literacy for adults, achieving about 70 percent literacy by 1936.

The demand for formal education in industrial societies has not ceased. By the late nineteenth and early twentieth century industrializing governments began to add compulsory secondary education and to develop their universities into larger institutions with much more research capacity. Oral traditions and teaching by example continue to be used, of course, although they are often not even considered to be education.

Trends for the Future

As can be seen in this brief account, the complexity of the educational enterprise has increased over time. The length of childhood and of initial learning, notably long in humans to begin with, has been extended in industrial societies and now may last longer than the entire average lifespan two hundred years ago. Lifelong learning is a growing trend. Education has become in modern times central to industrialization and the human effort at productivity, as it has always been central to human survival.

This article constitutes a most preliminary sketch of the history of education, which has yet to be told from a global perspective, rather than nation by nation. Yet even this brief sketch reveals the cooperative behavior required to pass on collective learning to succeeding generations and the centrality of education to the human experience.

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See also Adolescence; Childhood; Dictionaries and Encyclopedias; Initiation and Rites of Passage; Libraries; Missionaries; Universities

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Egypt

Africa's Nile River allowed Egypt to emerge, beginning from the sixth millennia BCE, as one of the world's first hydraulic civilizations. Building canals and dikes, Egypt developed a redistributive economy and a complexly ordered, unified society under one king by 2950 BCE. Even as a part of other empires in other eras, Egypt became an icon of Western civilization, with a distinctive artistic canon recognizable today by the general public

Egypt has long been accorded a paramount place in world history. This is particularly true of ancient Egypt, which has exerted a powerful influence on both popular and scholarly imaginations to the point that it has been incorporated into the standard view of Western civilization. Other epochs in Egyptian history were also of great importance, however, and not only to Egypt but also to the history of the world.

The Gift of the Nile

As the climate of northeastern Africa dried out during the Holocene period, the peoples of the region had to move to wetter areas, either to the south or to the east to the Nile Valley. By the sixth millennium BCE, most of Egypt's population had migrated to the valley of the Nile, a remarkable river that was the material basis for Egyptian civilization. Besides providing almost all of Egypt's water, the Nile annually inundated the fertile land along its banks, leaving behind pools, depositing new soil, and washing away excess minerals, thereby avoiding the salinization that was the bane of other hydraulic civilizations such as ancient Mesopotamia. The river was continuously

navigable throughout Egypt, from the broad delta in the north to the first cataract at Aswan, 900 kilometers (559 miles) to the south, providing ready communication and the means to convey heavy loads over long distances. (A cataract, of which the entire Nile has six, is a place where boulders break the water's surface or where rapids flow; boats pass them only with difficulty.) The river was ideal for sailing craft: the steady current carried vessels north while the prevailing north wind propelled them south. Even today 95 percent of Egypt's population lives within a few kilometers of the river.

This was the matrix from which one of the world's first hydraulic civilizations emerged. During Predynastic times (c. 5300–2950 BCE) increasingly complex social and political organizations developed to manage and maximize the river's gift through construction of canals, dikes, and artificial pools, and through water-raising devices. Control of the resulting agricultural surpluses enabled an exploitative elite to establish a redistributive economy with increasing social stratification and differentiation of labor. A series of kingdoms developed along the Nile, growing ever larger and inevitably coming into conflict with each other and consolidating into still larger kingdoms. Little is known about the process apart from what can be interpreted from enigmatic artistic representations on items such as ceremonial palettes and maces, although it is fairly clear that the unifying impulse came from the south. By 2950 BCE at the latest, Egypt was united under one king, providing one of the earliest models of state formation, and one unmatched in scale by any of its preceding or contemporary societies.

From the intensely innovative and creative experiences of Late Predynastic and early pharaonic



times emerged fixed forms of social usage, religion, and artistic expression so suitable to the Egyptians that they remained fixed for thousands of years. At the apex of society was the king, or pharaoh, who ruled with the status of a god. Monumental accomplishments such as the vast pyramid fields of Giza, Saqqara, and Dahshur demonstrated his command of the kingdom's people and resources. Highly complex systems of religion and magic connected people with the universe and assigned them a place in this life and the next, for which they made elaborate preparation through mummification and tomb construction. Ethical values such as *ma'at*, which might be loosely translated as *justice* or *truth*, guided personal and official conduct. Prodigious artistic production was regulated by an artistic canon that produced works so distinctive that they are readily recognizable today as ancient Egyptian, even by the general public. Stimulated by the need to keep royal records, the art of writing appeared early in Egypt and was expressed in stately hieroglyphic script by a privileged group of learned scribes. Through its monuments, art, and literature, ancient Egypt communicated a compelling impression of itself to succeeding ages.

During the Old Kingdom and Middle Kingdom periods (c. 2613–1640 BCE), Egypt functioned largely as a cultural oasis, separated from the rest of the world by deserts, restricted land approaches, and lack of a natural seaport. The ancient Egyptians probably felt little need for external contact, but cultural self-sufficiency can lead to complacency and technological backwardness, as was made apparent by the invasion and domination of Egypt by the foreign Hyksos during the Second Intermediate Period (c. 1640–1550 BCE). That humiliating episode prompted the Egyptians to import innovations such as the horse-drawn chariot, the curved sword, the compound bow, and body armor, as well as improved looms and potters' wheels, and superior strains of plants and animals.

With the resurgent New Kingdom (c. 1550–1069 BCE), whose monumental remains are so abundant at ancient Thebes (present-day Luxor), Egypt developed closer outside ties as it acquired imperial possessions in Syria through the campaigns of monarchs such

as Thutmose III and Ramses II. The emergence of other powers in the Near East required maintenance of diplomatic contacts, as is shown by the archives of the heretic king Akhenaten. Diplomacy became even more important during the Third Intermediate and Late Periods (c. 1069–332 BCE) when Egypt was often internally divided and occasionally subjected by foreign entities such as the Nubians, the Assyrians, and the Persians. A Greek merchant presence penetrated into the delta, and Greek mercenaries served in Egypt. Greek scholars and travelers were drawn to Egypt, including the fifth century BCE historian Herodotus who famously observed that "Egypt is the gift of the Nile." Egyptian influences on Greek art are obvious in sculpture and architecture.

Alexandria, the Ptolemies, and Rome

Egypt had fallen under Persian domination when Alexander of Macedon (Alexander the Great) arrived in 332 BCE. Alexander soon departed to complete his conquest of the Persian Empire, but not before establishing a new city, Alexandria, which provided a major seaport to a country that previously had none and firmly connected Egypt to the Mediterranean world. Out of the struggle for power following Alexander's death in 323 BCE, one of his Macedonian generals, Ptolemy, son of Lagus, secured Egypt for himself and his descendants, establishing a dynasty that lasted three centuries. Although the Ptolemies presented and justified their rule through traditional pharaonic trappings to the masses of Egyptians, they superimposed a Greek-speaking elite class and its foreign culture on Egypt.

The Ptolemies ruled the most powerful state in the eastern Mediterranean, an empire that extended far beyond Egypt, and that was usually able to hold its own and more with its chief rival, Seleucid Syria, another product of the breakup of Alexander's ephemeral empire. The immense, ever-renewed resources of Egypt enabled the Ptolemies not only to maintain their military power but also to sustain magnificent achievements in material culture and intellectual life. Alexandria became by far the greatest city of the eastern Mediterranean. Its two harbors, guarded by the

Lighthouse, teemed with commercial and military vessels. The city was filled with thousands of sumptuous palaces, temples, and public buildings. The Museum became the intellectual center of the Mediterranean world, attracting the greatest scholars and the best collection of books to its incomparable Library.

Under its first three kings—Ptolemy I Soter, Ptolemy II Philadelphus, and Ptolemy III Euergetes—who reigned from 306 to 221 BCE, the Ptolemaic dynasty retained its preeminence, but later rulers were often less capable, and at times the dynasty fell into unscrupulous hands. Rome emerged from the Second Punic War (218–202 BCE) as the strongest power in the Mediterranean and progressively extended its sway eastward, interfering increasingly in Egypt's affairs throughout the second century BCE. By the following century Egypt was virtually a Roman puppet state. Cleopatra VII (r. 51–30 BCE) attempted to exploit internal Roman competition for power to reassert the independence of her kingdom, hence her liaisons with Julius Caesar and Marcus Antonius. In the end, however, the faction led by Octavian, later styled Augustus, prevailed. Egypt became a Roman province in 30 BCE.

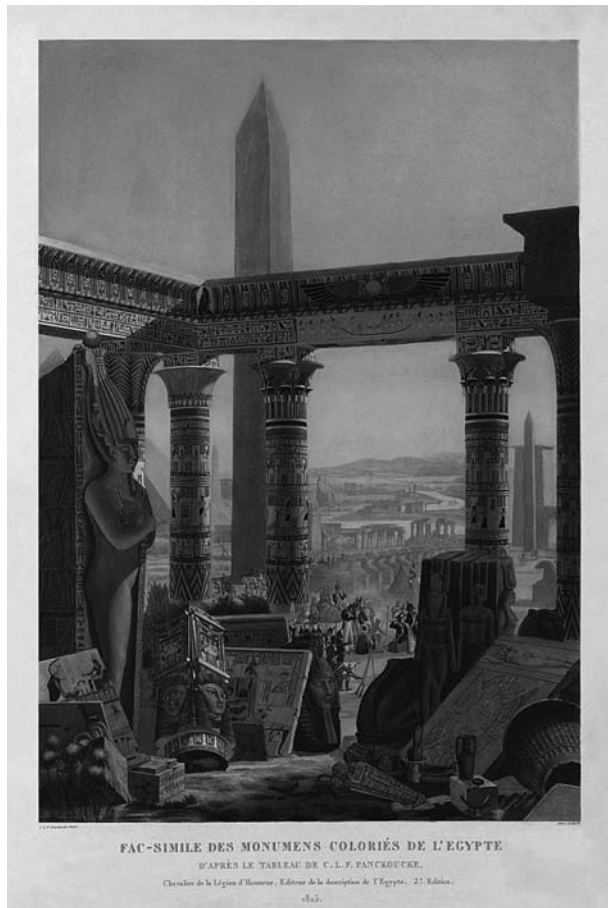
If anything, the Roman Empire exploited Egypt more ruthlessly than had the Ptolemies. Besides substantial taxes, Egypt regularly shipped vast quantities of grain to Rome, the first of several times that Egypt served as the breadbasket of a

foreign power. By the second century CE the Egyptian economy was experiencing severe stress from the burdens imposed on it. But Egypt also exerted a strong allure on the Roman Empire. The several Egyptian obelisks that were transported to Italy served as reminders of the ancient land through the centuries. Egyptian religious cults such as that of Serapis and Isis spread through the empire. Alexandria remained supreme in intellectual life. Ideas in geography, astronomy, and medicine that were nurtured there circulated in both the West and the Middle East as late as the nineteenth century. Alexandria was foremost in philosophy, being especially notable in the development of Neoplatonism. Another cultural product of Roman Egypt, Hermeticism—a mix of philosophy, metaphysics, alchemy, and astrology that was based on the mythical Hermes Trismegistus—was particularly influential during the European Renaissance. But when the Roman Empire entered a period of extended crisis during the third century CE, probably no province suffered as much as Egypt, weakening old certainties and institutions while opening the way for new ones.

Though usually underappreciated by Christians in general, Egypt played a central role in the establishment and spread of Christianity. Much of Christian orthodoxy was initially hammered out in Egypt; the Nicene Creed, for example—“I believe in one God, the Father Almighty, Maker of all things both visible and invisible, and in one Lord Jesus Christ, the Word of God”—was formulated by Egyptian churchmen; the New Testament in its canonical form was first compiled in Egypt; and Egypt contributed greatly to



Wall inscriptions from the Memnonium [Temple] of Seti I, at Abydos, one of Egypt's most ancient cities.
Brooklyn Museum Archives.



Description: The page here comes from the “Royal edition” (1821–1829) of a series of color plates, essays, and maps published by the French Commission on the Sciences and Arts of Egypt. Collection of Bibliotheca Alexandrina.

the development of many of the church’s most important institutions such as monasticism. Traditionally brought to Egypt by Saint Mark, the early development of Christianity in Egypt is obscure, but there can be no doubt that the new religion found fertile soil along the banks of the Nile. The vicissitudes of the third century only made it grow stronger as people turned to it for comfort and support. By the late fourth century, through a combination of conversion, aggressively antipagan measures, and imperial favor, the religion had triumphed. Egypt became almost monolithically Christian.

Byzantines, Persians, and Muslims

With the collapse of the Western Roman Empire at the end of the fifth century, Egypt remained a province

of the Eastern or Byzantine Empire. As before, it was regarded as an imperial breadbasket, although the grain shipments went to Constantinople (later called Istanbul), not Rome. Relations between Constantinople and Egypt were far from smooth as irreconcilable areas of conflict developed. Alexandria, the preeminent city of the eastern Mediterranean for more than six centuries, resented its displacement by the upstart capital of Constantinople. Worse, the imperial capital began to assert theological as well political supremacy. Egyptian resentment was exacerbated by the emergence of serious doctrinal differences that found expression during the great church councils of the first half of the fifth century in disputes over matters such as monophysitism, the belief that Christ’s humanity is absorbed by his deity; thus he has only one nature, not two. Imperial attempts to impose its ideas of orthodoxy were vigorously resisted in Egypt.

At the beginning of the seventh century, the Byzantine Empire fell into a bloody civil war that devastated Egypt. Hardly had that conflict been resolved when the Byzantine and Persian empires began a prolonged struggle during which Egypt endured a sustained Persian occupation before the Byzantines finally prevailed. The Byzantine Empire was badly shaken by its conflict, however, and had difficulty in reimposing its rule in Egypt or even in protecting its borders against a new and totally unexpected force. United under the banner of Islam, Arab armies emerged from the Arabian Peninsula and drove the Byzantines from Syria in 636 CE, isolating Egypt from the imperial center. In 639, a small Arab force marched south from Syria to Egypt. An incompetent Byzantine defense and the welcoming attitude of the Egyptian people, who saw the Arabs as liberators from their hated oppressors, quickly delivered the province to the Arabs.

The consequences of the Muslim conquest of Egypt were momentous. One consequence, of course, was the establishment of Islam in Egypt, which became a predominantly Muslim land, although Egypt retains to this day a substantial Christian minority. Another consequence was Egypt’s adoption of the Arabic language. And an entirely new capital, Fustat, was established near the apex of the Nile Delta, displacing



Alexandria as the center of government and beginning the long decline of the latter city until its resurgence in the nineteenth century.

Thus Egypt became part of a new world empire, governed first from Arabia, then from Damascus under the Umayyad dynasty (661–750 CE). When the Umayyads were overthrown by the Abbasids in 750, the last Umayyad caliph, Marwan II, made his final stand in Egypt. After the Abbasids established a new imperial capital at Baghdad, Egypt became more peripheral and was usually loosely governed, especially as the authority of the Abbasid caliphate steadily diminished. That made Egypt vulnerable to the ambitions of a rival Shi'a Fatimid caliphate that had established itself in present-day Tunisia and was determined to wrest control of the Islamic world from the Sunni Abbasid caliphate in Baghdad. Egypt was the logical first step.

Fatimids, Mamluks, and Ottomans

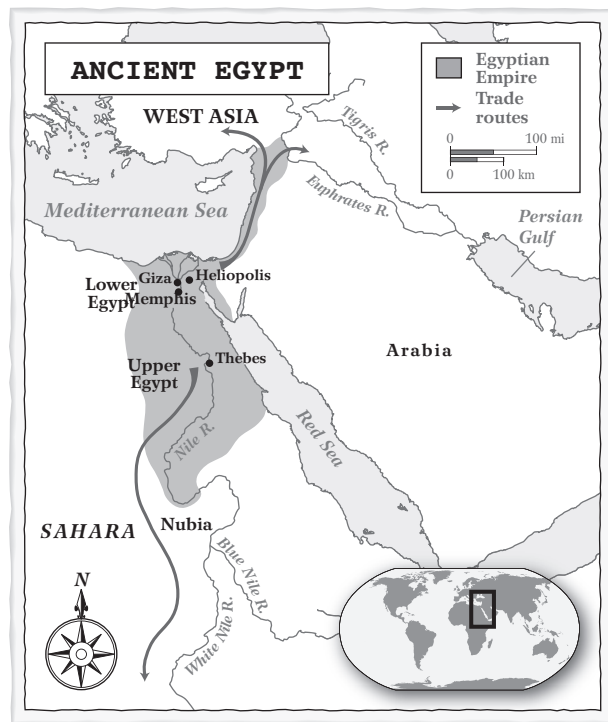
Through a combination of effective propaganda and Abbasid weakness, at a moment when Egypt was riven with internal divisions, the Fatimids took Egypt almost without opposition in 969. The new dynasty immediately founded a new city a short distance north of Fustat, which became known as Cairo, although Fustat remained of major importance until it was destroyed during a crusader invasion in 1168. Once again Egypt was the center of a major empire, well led and capably administered, and strong both militarily and economically. Fatimid gold coinage, which retained its value almost to the end of the dynasty, set the monetary standard in the eastern Mediterranean and the Middle East. But the Fatimids never achieved their ambition of destroying the Abbasid caliphate, and less able rulers in less favorable times were hard pressed to meet a new and unexpected challenge in the Middle East.

Egypt does not come readily to mind when thinking of the crusades, which were ostensibly aimed at the Holy Land, but it was involved in them from beginning to end. An Egyptian Fatimid garrison lost Jerusalem to the First Crusade in 1099, and an Egyptian Mamluk army expelled the crusaders from the Asian

mainland at the end of the thirteenth century. Several major crusading efforts were primarily directed not at the Holy Land but at Egypt, and on more than one occasion the crusaders came close to success. At such a moment of crisis Salah al-Din, known in the West as Saladin, displaced the enfeebled Fatimid dynasty. Salah al-Din turned back the crusader threat to Egypt and recaptured Jerusalem in 1197. His rivalry with Richard the Lionheart during the subsequent Third Crusade became the stuff of chivalric legend. In Egypt he returned the land to the Sunni fold and established the Citadel, one of Cairo's major features. He ruled as sultan, paying lip service to the authority of the Abbasid caliph in Baghdad. The dynasty that he established, with extensive holdings in Syria as well as Egypt, is called the Ayyubid.

The Ayyubid realms were never functionally integrated, however, and they often failed to support each other effectively. When the French king Louis IX invaded Egypt in 1249 at the head of a strong army, it appeared almost certain that he would succeed. What saved Egypt was a new force of slave soldiers, the Mamluks (literally "owned men"). These formidable warriors met the French at the deltan town of Mansura, defeated them, took Louis IX captive, and turned back the last major crusader threat to Egypt. Within a few years the Mamluks again proved their mettle when the Mongols were about to invade Egypt having recently devastated Baghdad and killed the caliph. After dealing similar destruction to Damascus, the Mongols demanded that Egypt surrender or suffer a similar fate. Not waiting for invasion, the Mamluks rode north into Palestine and engaged the hitherto invincible Mongols at Ain Julut in 1260, defeating them utterly and chasing them out of the region. Within a few decades more the Mamluks had also conquered the last crusader stronghold on the Asian mainland. A crusader or Mongol conquest of Egypt would have had incalculable consequences not only for Egypt but also for world history.

Slave soldiers had long been a factor in Islamic governments. In Egypt the Mamluks institutionalized themselves as the dominant force with one of their



number ruling as sultan. Their ranks were replenished by fresh supplies of slave youths from beyond the Muslim world who were brought to Egypt and raised in the arts of war and instructed in Islam from childhood. From slavery they could rise high in the Mamluk hierarchy, commanding groups of Mamluk soldiers, even becoming the sultan. But the system was not hereditary. The only way to become a Mamluk was to enter the system as a slave. Full-fledged warriors and their military establishments were supported by the revenues from extensive grants of land. Yet, for all their warlike orientation, the Mamluks were great patrons of the arts, especially architecture. Many splendid Mamluk buildings still adorn Cairo.

In its heyday, the Mamluk Empire was the mightiest state in the Middle East, but a number of factors attenuated their strength over time. The Black Death, the horrific outbreak of bubonic plague that appeared in 1347, hit Egypt especially hard, destroying perhaps a third of the population, dealing a devastating blow to the economic foundations of the Mamluk system and depleting Mamluk numbers. Plague reappeared with such regularity in Egypt over the next five centuries that Egypt became intimately associated with the disease in the Western imagination. But the Mamluk system also deteriorated

from within as its unique training system lost its rigor. New innovations in tactics and military technology were ignored. The Mamluks never successfully adopted artillery, and they despised handguns as unworthy of mounted warriors. This made them vulnerable to the expanding Ottoman Turks who eagerly embraced new military techniques and weapons. After the decisive battle at Marj Dabiq in 1516, Egypt became a province of the Ottoman Empire and remained so in one form or another for four centuries.

Once again Egypt was relegated to the periphery as imperial policy was directed from Istanbul, as Constantinople was now called, and administered within Egypt by a long series of Ottoman governors. Relatively little is known about the first two centuries of Ottoman Egypt because of a dearth of historical sources, but it is clear that Egypt derived some benefit from being part of the extensive Ottoman imperial and commercial systems. Egypt particularly profited from becoming a transshipment point in the coffee trade as that new beverage gained avid markets throughout the Mediterranean and in Europe. Ottoman rule was light in Egypt, allowing the resurgence of the Mamluks as a privileged economic and military power. Eventually these neo-Mamluks became so powerful that they, not the Ottoman governors, were paramount within the land. It was in the wake of a failed attempt to reassert effective imperial authority at the end of the eighteenth century that another disruptive force intruded into Egyptian affairs.

French and British Intervention

At the direction of the revolutionary government of France, General Napoleon Bonaparte invaded Egypt in 1798. The intentions were to sever Britain's overland ties with India and secure Egypt and its agricultural riches for France. The ambitious young general may also have dreamed of winning an eastern empire for himself. But after some early but superficial successes, the situation became hopeless; Napoleon abandoned his army to seek greater things in Paris, and the French were expelled from Egypt by British



Zangaki, *Sphinx et la grande pyramide* (c. 1870s). Albumen print. The Sphinx in Jizah, Egypt, is a powerful symbol of the Egyptian state, past and present.

and Ottoman forces in 1801. The British evacuated soon after. But Egypt had become firmly fixed in Europe's political and diplomatic sights.

Another consequence of Napoleon's Egyptian expedition was the European rediscovery of ancient Egypt. This was initiated to a large degree by the scholars who accompanied the French expedition but was quickly taken up by droves of scholars and travelers, intently followed by a growing reading public in Europe that was fascinated by the resulting flood of publications and the intriguing objects from Egypt that were filling Western museums. By the end of the nineteenth century, Egyptology was becoming a highly institutionalized discipline, one with appeal far beyond the scholarly community. The impact of ancient Egypt on the popular imagination is difficult to overstate. Probably no other vanished civilization has exerted so powerful an allure.

It was reasonably assumed that Ottoman authority would be reestablished in Egypt in the wake of the Napoleonic expedition, but the unexpected again intruded. Muhammad Ali (1769–1849), an Albanian officer in command of one of the Ottoman contingents sent to Egypt, exploited the chaotic situation to establish a personal ascendancy and compel a reluctant Ottoman sultan to grant him the office of pasha, or governor, of Egypt in 1805, which he held until his death in 1849. Steadily consolidating his power, Muhammad Ali exterminated the odious Mamluks and imposed a degree of order on Egypt unknown for centuries. Through ruthless measures he greatly

increased the productivity of the country, built a powerful army and navy, and established industries in Egypt. Though nominally loyal to his master, the Ottoman sultan in Istanbul, Muhammad Ali was in fact much more powerful than the sultan with whom he fought two successful wars. So successful was he that the Western powers intervened to prevent the dissolution of the Ottoman Empire—and because of resentment that a non-Western polity could accomplish so much. Muhammad Ali was compelled to dismantle most of his military and industrial establishments, but in return he was granted the hereditary right of rule in Egypt for himself and his family, who retained it until 1952.

But Muhammad Ali's successors fell increasingly under the sway of the West. Ismail, who ruled with the exalted title of khedive from 1863 to 1879, pursued an especially ruinous policy of borrowing from Western bankers at usurious terms. Debts mounted to unsustainable levels to finance grandiose projects. The most expensive was the Suez Canal, which opened in 1869, but only brought more debt to Egypt while greatly enhancing the importance of the country to covetous imperialist eyes. When debts mounted to levels where the Egyptian government could no longer pay, European governments intervened to take control of the country's finances. That provoked a nationalist rising which Britain crushed militarily in 1882.

British intervention in Egypt was initially intended to be temporary, but it lasted more than seventy years. Withdrawal would mean the return of unacceptable conditions in Egypt—and leave Egypt and the Suez Canal, which had become Britain's lifeline to India, vulnerable to other predatory imperialist powers—so the British occupation became institutionalized. Although Britain maintained the diplomatic fiction that it ruled Egypt in the interests of the Ottoman Empire, Egypt was very much part of the British Empire.

The British accomplished much in Egypt in the area of administrative reform, and they thoroughly overhauled the vital irrigation system, with highly beneficial results. But they largely deprived Egyptian officials of administrative responsibility and



An illustration of an Egyptian tomb painting shows Ramses II and his sons attacking a mountaintop fort.

experience, while discouraging industrialization in favor of agriculture, causing Egypt to fall ever further behind. Education stagnated as the British refused to devote substantial resources to it at any level. Not until 1908 was a national university established in Egypt. Lord Cromer, the British consul-general and de facto ruler of Egypt, calculated that the Egyptians would be so grateful for the efficiency of British control that they would acquiesce in it indefinitely. When that calculation proved mistaken during the first decade of the twentieth century, reluctant steps were taken towards the establishment of a representative parliamentary democracy. But just as that promising process was being implemented, World War I broke out, and Britain found itself at war not only with the German Empire but with the Ottoman Empire as well.

The British were more firmly in control than ever as they suspended Egyptian political activity and imposed a state of emergency. Since they could no longer maintain the fiction of governing in the interests of the Ottoman Empire, they established a formal protectorate in Egypt. The Ottoman menace to the Suez Canal required large numbers of British soldiers to be stationed in Egypt. The country was compelled to make heavy contributions of produce, money, and manpower to the war effort—although Egyptians were not conscripted into the army in large numbers because the British did not want to create a large cadre of trained Egyptian fighting men.

At the conclusion of World War I, to which Egypt had so heavily contributed, and inspired by talk of

national self-determination, Egyptians expected their national concerns to be taken seriously. When they learned that their case was not even being considered and that the British intended to continue the protectorate, the country exploded. Realizing that Egypt had become ungovernable, Britain granted independence to Egypt in 1922, but with reservations. These included continued military presence in the canal zone and deferment of the final disposition of Sudan, which the Egyptians considered theirs by right of conquest but which had effectively functioned as a separate British colony since 1899. Britain also reserved the right to intervene to defend Egypt. The result might be better described as autonomy rather than full independence.

Constitutional Monarchy

The constitutional monarchy that was established in 1923 confronted serious problems from the outset. The new king, Fouad I, a descendent of Muhammad Ali, inclined towards autocracy whereas the parliamentary leaders wanted to exert genuine authority. Given time, political realities would probably have produced a working relationship between the two, but a third factor, repeated British interference, prevented the emergence of equilibrium. Even so, modest advances were made in areas such as education and the economy, although lack of investment capital inhibited development, as did the Great Depression. Intellectual and cultural life flourished. Nor was the political scene



altogether devoid of accomplishment. A treaty was negotiated in 1936 that provided for full Egyptian sovereignty and British withdrawal from Egypt, albeit after twenty years.

But with the outbreak of World War II in 1939, the British presence returned full force, for Egypt was of immense strategic importance. Threats from neighboring Italian colonies were turned back early on, but two German offensives in North Africa presented much more serious dangers, especially the second, which was stopped at al-Alamein, just one hundred kilometers (about 62 miles) from Alexandria. The British victory there narrowly prevented the Germans from capturing the Suez Canal and breaking into the Middle East and beyond. Egypt bore less of a burden in this war than in the previous one, but the Egyptians bitterly resented the way their government was coerced into cooperation by the British.

The postwar political situation in Egypt was dismal. King Farouk, who succeeded his father in 1936, degenerated into a caricature of depravity. Parliamentary politics were tarred by corruption, and the political spectrum became increasingly fragmented. Military intervention against the new nation of Israel resulted in a humiliating disaster, further discrediting a government that was increasingly out of control. Attempts at reform came too little and too late. The monarchy was overthrown by a military coup in the summer of 1952.

The figure that emerged supreme was an officer named Gamal Abdel Nasser, who held the office of president until his death in 1970. Determined to make a clean break with the past, the new regime extensively and repeatedly reorganized Egypt's political and economic systems, introducing a system of state socialism and an outwardly democratic system, but one in which the president was supreme. The British finally withdrew from Egypt in 1956 but returned later that year in an ill-advised joint British-French-Israeli invasion when Nasser nationalized the Suez Canal to pay for construction of the High Dam at Aswan. Britain's failure in the Suez crisis underscored that nation's decline as a world power. The

British were, however, able to prevent the union of Sudan with Egypt, a point of departure with enormous consequences for both nations. Enhanced in prestige after Suez, Egypt played a prominent role on the world stage during the 1950s and 1960s, with implications for the Cold War, the nonaligned movement, and especially for the Arab world where Egypt asserted a prominent leadership position. But that and Nasser's espousal of the Palestinian cause led to Egypt's disastrous defeat when Israel attacked in June 1967.

Under its next two presidents, Egypt gradually changed course in a number of significant ways. Anwar Sadat's surprise attack on Israeli forces along the canal zone in October 1973 achieved some initial successes and recovered sufficient prestige to enable Egypt to make a peace treaty with Israel that recovered territories lost in 1967, but at the price of alienation from other Arab countries who resented Egypt's abandonment of a united front against Israel. Sadat also began the process of moving away from a closed system of state socialism toward economic reengagement with the rest of the world. But he alienated many conservative elements within his own country, leading to his assassination in October 1981. Sadat's successor, Hosni Mubarak, continued Sadat's move toward more open economic policies and, with some reluctance, toward privatization and free markets. He also restored Egypt's relations with other Arab countries. Despite some further tentative steps toward democratization, the country remains firmly under presidential control.

The challenges that confront Egypt in the early twenty-first century involve many of the most pressing issues confronting the world today. Egypt has serious demographic concerns. Cairo is the largest city on the African continent, with a population of more than 16 million people, and the entire country contains over 80 million inhabitants with a high rate of increase. Like many other countries, Egypt must also worry about energy, although it has some oil and extensive natural gas fields. Water may prove to be the worst problem of all, as demands upon the Nile approach the river's maximum capacity. Egypt,

which contributes nothing to the river's supply, yet uses most of the water, will have to share with increasingly water-hungry nations upstream. Also, in a break with millennia of historical precedent, Egypt ceased to be a net food exporter in the mid-twentieth century and became a net food importer. The country can no longer feed itself, much less serve as a breadbasket to other nations. But the extraordinarily strong fabric of Egyptian society, which has withstood many stresses during the long millennia of its existence, will likely prove equal to these challenges as well as others that arise. Meanwhile the complex tapestries of its varied past, which have so often been interwoven with those of world events, will continue to enrich the human imagination.

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See also Hatshepsut; Ramses II

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Einstein, Albert

(1879–1955)

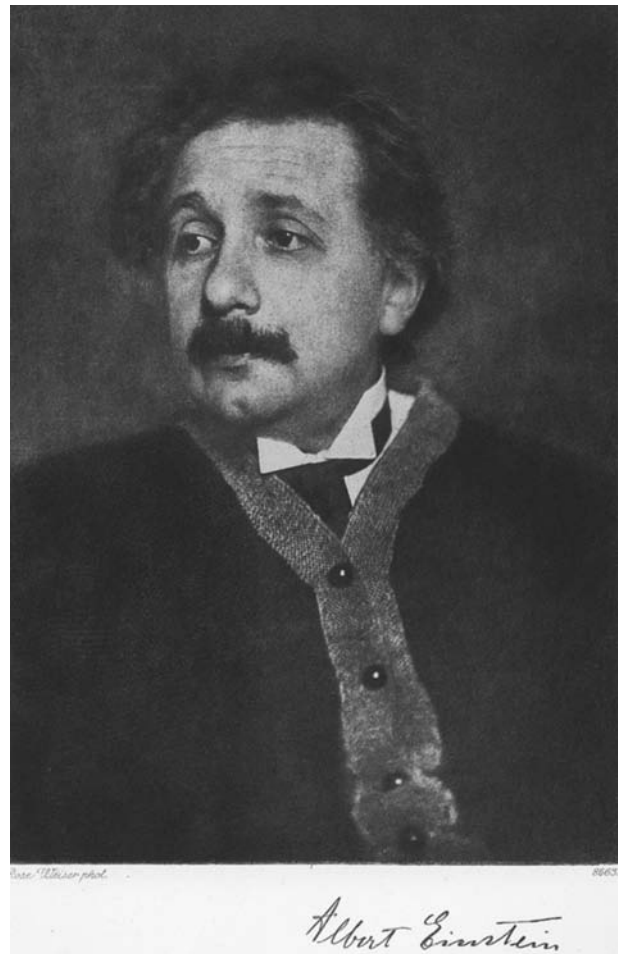
GERMAN-BORN SWISS-AMERICAN PHYSICIST

Albert Einstein remains one of the most influential people in the fields of science and mathematics. The Nobel Prize-winning physicist contributed theories on relativity and the photoelectric effect that are still upheld today. Though German born, Einstein lived out the last portion of his life in the United States and even urged President Roosevelt to act against Nazi Germany.

Albert Einstein contributed more than any other scientist to the twentieth-century vision of physical reality with his special and general theories of relativity, and he won the Nobel Prize for Physics in 1921 for his explanation of the photoelectric effect. Recognized in his own lifetime as one of the most brilliant minds in human history, he advanced a series of theories that proposed entirely new ways of thinking about space, time, and gravitation. His theories profoundly advanced the field of physics and revolutionized scientific and philosophical inquiry.

Born 14 March 1879, in Ulm, Germany, Einstein and his family moved a year later to Munich to establish a small electrical engineering firm as the family business. Einstein showed little interest or ability in school. Two of his uncles who were involved with the family business, however, stimulated his interest in mathematics and science. When the business failed in 1894, the family moved to Milan, Italy, and Einstein soon followed and then resumed his education in Switzerland. He graduated from the Zurich Polytechnic school in 1900 as a secondary school teacher of mathematics and physics, also becoming a Swiss citizen.

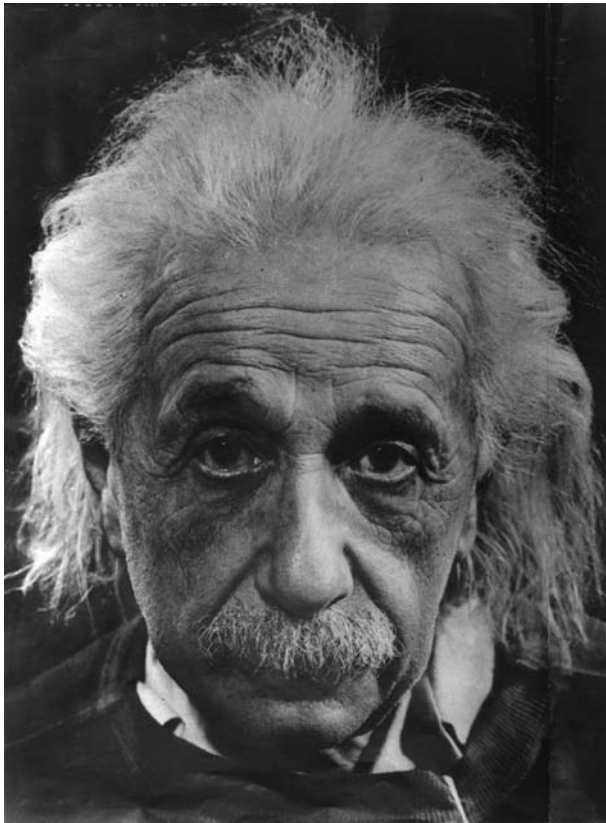
After a short period, he obtained a job as an examiner at the Swiss patent office in Bern and married his



Portrait of a young Albert Einstein. Photo by Rose Weiser.

university sweetheart, Mileva Maric, in 1903. They had two sons, but the marriage ended several years later. He married Elsa Lowenthal in 1919.

From 1902 to 1909, while working at the patent office, he completed an astonishing range of publications in theoretical physics. For the most part these



Philippe Halsman, *Albert Einstein* (1947). Gelatin silver print. The famous physicist as immortalized by the famous photographer. Halsman Photographic Company.

texts were written in his spare time and without the benefit of close contact with either scientific literature or theoretician colleagues. The publication of one paper, “A New Determination of Molecular Dimensions,” and its submission to the University of Zurich won him a doctoral degree in 1905. Einstein’s paper provided convincing evidence for the physical existence of atom-sized molecules, a much-theorized topic. In 1908 he sent a second paper to the University of Bern, which got him a job there as a lecturer. The next year he received an appointment as associate professor of physics at the University of Zurich.

One paper, on the production and transformation of light, revolutionized the theory of light. Still another, containing his special theory of relativity, had its beginnings in an essay he had written at age sixteen. The theory postulated that if, for all frames of reference, the speed of light is constant, and if all natural laws are the same, then both time and

motion are relative to the observer. The follow-up paper, “Does the Inertia of a Body Depend upon Its Energy Content?” established the equivalence of mass and energy, commonly expressed in the formula $E = mc^2$. The theory remained controversial for many years before its mainstream acceptance.

This outpouring of brilliance in such a short time made Einstein the leading scientific thinker among Europe’s physics community, though public understanding of his theories was years away. After moving quickly from one university post to another, in 1914 he became professor at the prestigious Prussian Academy of Science in Berlin. He occasionally lectured at the University of Berlin, but from this time on he never again taught regular university courses. He remained there until 1933, when the rise of fascism in Germany impelled him to leave for an analogous research position in the United States, at the Institute for Advanced Study in Princeton, New Jersey, a position he held until his death.

In his work after 1905, Einstein had made important contributions to the quantum theory, but increasingly thereafter he focused on perfecting his theory of relativity. By 1916, he had completed his general theory of relativity. It claimed that gravitation is not a force, as Isaac Newton had said, but a curved field in the space–time continuum created by the presence of a mass, such as the sun. When the theory was later proved during a solar eclipse, when his light-deflection prediction could be tested, the popular press praised Einstein.

Einstein’s stand as a pacifist who did not support Germany’s war aims brought him much respect outside Germany, but derision as a traitor and defeatist from his former countrymen. After World War I, when the victorious powers sought to exclude German scientists from international meetings, Einstein worked to include German physicists. His popularity and his political stances, which also included Zionism, led to attacks in the 1920s by anti-Semitic physicists. This in part explains why his Nobel Prize in 1921 was awarded not for relativity, but for his less controversial 1905 work on the photoelectric effect.

Only two things are infinite, the universe and human stupidity, and I'm not sure about the former. • **Albert Einstein (1879–1955)**

Einstein abandoned his pacifism when he realized that Hitler and the Nazis had to be stopped by military means, but he never stopped working on behalf of peace. Einstein sent a letter to President Franklin D. Roosevelt in 1939 urging that the United States develop an atomic bomb before Germany could do so. The letter contributed to Roosevelt's decision to fund what became the Manhattan Project. It is one of the great ironies of the pacifist Einstein's life that his energy–mass equation, which asserted that a particle of matter can be converted into an enormous quantity of energy, found its proof in the atomic and hydrogen bombs, the most destructive weapons ever created. After the war, he joined with other scientists in seeking to contain nuclear proliferation.

Though he failed in his political efforts, Einstein was not disappointed. His central interest always remained physics and the search to find the mathematical relationship between electromagnetism and gravitation, better known as the unified field theory. A version of the unified field theory he published in 1950 was politely criticized as flawed and went somewhat neglected for decades. In more recent years, physicists have begun trying to combine Einstein's relativity theory with quantum theory to arrive at a "theory of everything," by means of highly advanced

mathematical models. That some of Einstein's theories are only now being fully understood, decades after his death, stands as a testament to his place in science and human history.

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See also Energy; Science—Overview

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Electricity

Although the word *electric* was first introduced in the sixteenth century, it wasn't until after the Scientific Revolution of the eighteenth century that serious investigation of electricity began. Scientists worldwide experimented with electricity, and in the nineteenth century society recognized the usefulness of electric power. The current human reliance on electricity calls for a need to research alternative forms of power for the future.

Electricity is so common today that it would be difficult for anyone to imagine how life would be without the well-known applications we use every day in our homes and jobs. But things were not always that way. It is just four hundred years since scientists began to study electrical phenomena and the nature of electricity, and no more than 150 years since electrical applications started to be a part of our way of living.

Around 600 BCE, one of the natural philosophers of ancient Greece, Thales of Miletus (c. 625–547? BCE), observed that rubbing amber against a piece of cloth attracted light bodies. This remained the only reference to an electrical phenomenon for almost two thousand years, and though it was considered quite impressive, the cause of this strange effect remained unexplained.

At the end of the sixteenth century, the Englishman William Gilbert (1540–1603) became the godfather of electricity, as he was the first natural philosopher who introduced the word *electric*, in his book *De Magnete*.

The Eighteenth Century

A more systematic investigation of electrical phenomena took place during the course of the eighteenth century, following the scientific revolution.

Stephen Gray (1667–1736) in England and Charles Francois de Cisternay DuFay (1698–1739) in France worked seriously on electricity. Gray in 1732 demonstrated electrical conductivity. A decade later, in 1745, the Dutch physicist Peter van Musschenbroek (1692–1761), the most important popularizer of Newtonian physics, invented the first kind of electrical condenser, the Leyden jar. (Some argue, however, that the real inventor of the Leyden jar was Ewald Jurgen von Kleist, in Kammin, Pomerania.)

The years to come were very productive with regard to electricity. Electrical experiments, especially those using electrostatic machines, became very popular. Scientists performed experimental demonstrations using static electrical charges in the salons of the French and Italian nobility and the courts of the European kings. The audience sometimes participated actively in these experiments, and their fascination with the impressive results can be seen in engravings of the period. One example is the experiment performed by the French physicist Pierre Charles Le Monnier (1715–1799) in the court of the king in order to prove the strength of an electric shock caused by a Leyden jar—a test in which 140 people participated.

Around 1750 there were two leading figures investigating electricity: Abbé Nollet (1700–1750) in France and Benjamin Franklin (1706–1790) on the other side of the Atlantic Ocean. They proposed two different theories of electricity, and a strong debate started in

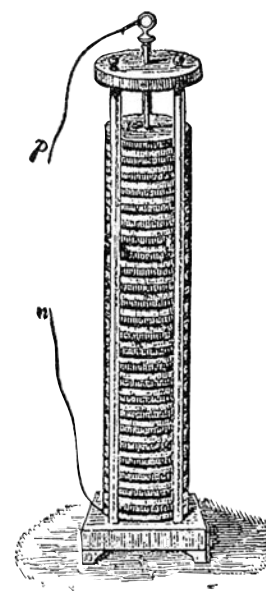
the scientific community. Nollet devoted himself to the study of electricity, and his theory, presented in his book *Essai sur l'électricité des corps* (Essay on the electricity of the bodies) (1746), can be summarized by the proposition that electrical matter is a combination of elementary fire and denser matter.

According to Benjamin Franklin's biographers he first became engaged with electricity following his astonishment at some spectacular electrical demonstrations performed by Dr. Archibald Spencer in Boston in 1743. Today Franklin is mostly known for his experiment with kites, intended to demonstrate that lightning is a form of static electricity. But his work on the nature of electric matter is much more fundamental from a scientific point of view. He was the first to propose, in contrast to previous theories, that electricity was a single common element, or fluid, passing through all matter (the "single-fluid" theory), and that it had no weight. Differences in electrical charge were caused by an excess (+) or deficiency (−) of this fluid.

As Franklin's theory gradually came to prevail during the last quarter of the eighteenth century, two new thinkers contributed to the development of the theoretical and experimental concept of electricity. In 1785, Charles August Coulomb (1736–1806) used the torsion balance to find the inverse square law governing the electrical force between two charges. In 1791 the Italian Luigi Galvani (1737–1798) conducted a well-known experiment with a frog's leg to prove that there was a relationship between living beings and electricity. Galvani's conclusions were proved wrong some years later by his rival in the scientific field, Alessandro Volta (1745–1827).

The Nineteenth Century

During the nineteenth century there was dramatic progress in the study of electrical phenomena. In 1800 Alessandro Volta, a professor at the University of Pavia in Italy, created the so-called voltaic pile, the first battery, opening new horizons to electrical applications. For the first time the general public, and scientists



Volta's voltaic pile, the first battery for producing a current of electricity, consists of alternating disks of different metals, such as copper and zinc, which are separated by flannel or pasteboard moistened with salt water or a dilution of sulfuric acid.

in particular, had steady and reliable access to an electrical current over an extended period of time.

The Danish physicist Hans Christian Oersted (1777–1851) found that electrical current would deflect a magnetic needle, thus establishing the discipline of electromagnetism. The basic mathematical equations of electromagnetism were developed by André-Marie Ampère (1775–1836) in 1820s.

In 1826 Georg Simon Ohm (1787–1854) proposed the law defining the resistance of metallic conductors. During the same decade Michael Faraday (1791–1867) impelled electromagnetism even further by building the first electric motor, transforming electric energy to kinetic energy. In addition, Faraday's theoretical proposal about dynamic lines provided a foundation for the Scotsman James Clerk Maxwell (1831–1879), who in 1856 wrote the essay "On Faraday's Lines of Force," establishing in pure mathematical language the new subject of field physics, unifying magnetism, electricity, and light. Maxwell's laws of electrodynamics were important for the development of many useful applications during the twentieth century like electric power stations, radio, television, and even the computer.

But before these applications came the electric telegraph, invented by Samuel Morse (1791–1872) around 1840, which caused a real revolution in



A close-up of a turbine generator in the Ruacana Hydroelectric Power Station, Namibia.

communications. After Morse, Thomas Edison (1847–1931) became famous for his electric lamp, not to mention his many other inventions, like the phonograph. Carbon arc lamps were used around the world extensively until the late 1970s, but the invention of the incandescent filament lamp by the Englishman Joseph Swan (1828–1914) in 1878 and by Thomas Edison in 1879 in the United States reduced their use dramatically in the years to follow.

As the usefulness of electricity was recognized by society, the need for electric power started to become immense. Carbon, oil, and waterfalls became the main sources for the energy needed. In 1896 George Westinghouse (1846–1914) used Niagara Falls to produce electric power and transmit it to cities like New York. Westinghouse collaborated closely with the Serbian physicist Nicola Tesla (1856–1943) in the development of an electrification system based on alternating current (AC). This advance led to long discussions with the supporters of direct current (DC) like Edison, but finally alternating current prevailed.

The Twentieth Century

During the twentieth century the use of electricity became fundamental in the lives of Western societies, but it is no less important for the developing world. The continuous increase in the need for electricity led to the establishment of nuclear-powered electric stations and the establishment of huge dams

to collect the necessary quantity of water for use in hydroelectric plants. One of them, for example, the Aswan High Dam in Egypt, changed the whole economic and social profile of the country. During the last decades of the twentieth century alternative sources for the production of electricity became more popular. Among them, solar energy and wind energy are the most widely used. In countries with high tides like England and France, these are also used for the production of electricity.

There is no doubt that civilization as we know it could not exist without electricity, yet we must not forget that electricity is a product of that civilization. Therefore, it is necessary for people to secure the use of electric energy in the future by constructing the necessary factories and networks, having always in mind that oil and carbon will not last forever, and that sun, water, and air can provide cheaper and more environmentally friendly sources for the power supply we need.

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See also Technology—Computer; Energy; Telegraph and Telephone

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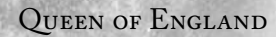


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Queen Elizabeth I posed in coronation robes patterned with Tudor roses and trimmed with ermine. Unknown artist, circa 1600, painted after a lost original. National Portrait Gallery, London.

talk directly with ambassadors from many countries, and this fact ensured that no information could be lost in translation. Cecil's admiration for her grasp of policy and politics is evident in his remark that "there never was so wise a woman born, for all respects, as Queen Elizabeth, for she spake and understood all languages; knew all estates and dispositions of Princes. And particularly was so expert in the knowledge of her own realm and estate as no counsellor she had could tell her what she knew not before" (Somerset 1997, 64).

Although Elizabeth never traveled beyond England, she was not an insular queen. Indeed, she was an expert on foreign policy, and one of her legacies was the establishment of England as a maritime nation. Although she never formally condoned piracy on the high seas, Elizabeth informally encouraged (partly through financing) Francis Drake and other sailors to plunder on her behalf. During her reign English merchant ships challenged Spain's seafaring

preeminence, and the first English settlers were sent to North America.

Elizabeth was pragmatic about international affairs. Careful with money, she was reluctant to fight wars because their cost inevitably drained her treasury. She also appreciated the necessity of managing her reputation. Her courtiers frequently used propaganda and "political spin" on her behalf. In matters of international politics monarchs were always aware of their image. Their status within the international arena also reflected directly on their courtiers, especially ambassadors in foreign courts—prestige by association. As a woman, Elizabeth was at a disadvantage within the international hierarchy; however, her intellect, judgment, and grasp of foreign policy became legendary. Consequently, as her reign proceeded, the reputation of both Elizabeth and of England grew. Visual images of Elizabeth were also tightly controlled. Paintings presented her as a powerful ruler and cultivated her image as a forever youthful virgin queen who was married to England and her subjects. Elizabeth used her travels around the country to make herself visible to her subjects. Her courtiers were often amazed at how she allowed the common people to approach her.

Religious divisions were a major issue throughout Elizabeth's reign. Her father, Henry VIII, had rebelled against the pope and rejected the Catholic Church, which dominated Europe. Subsequently, Queen Mary, Elizabeth's half-sister, had returned England to Catholicism and married Philip II, the Catholic king of Spain. Mary had persecuted people who had resisted the Catholic religion. Elizabeth was aware of the religious polarities within England and was more tolerant. Although she returned her country to Protestantism, Elizabeth recognized the dangers of encouraging the extremist elements of Protestantism. She insisted on changes in church services but retained many of the trappings of Catholic worship, such as crucifixes, clerical robes, and candlesticks.

Taking a religious middle ground, Elizabeth brought a degree of peace to England—peace that was not found in continental Europe, where religious



Marcus Gheeraerts the Younger, *Queen Elizabeth I* (c. 1592). Oil on panel. Elizabeth learned survival skills at an early age, and they served her throughout her life.

fanaticism and turbulence were rife. The Inquisition terrorized Spain, and in France heretics were burned at the stake. By contrast, Elizabeth attempted to defuse religious tensions by increasing outward compliance with Protestant services. Any person who did not attend church was subject to a fine. But during the first part of Elizabeth's reign Catholics who either attended the parish church or paid their fines for nonattendance could usually still practice their religion privately without fear of persecution. In contrast to Elizabeth's more lenient attitude in religious matters, her counselors feared that Catholic religious extremists would assassinate the queen. Francis Walsingham (c. 1532–1590), acting under the direction of Cecil, was in charge of gathering information about any threats to the queen through a network of spies. Walsingham, who held extreme Puritan views, operated a counterespionage organization that used double agents and torture to obtain information. Although Elizabeth considered Walsingham to be an extremist in terms of religion, she admired his shrewdness and never doubted his devotion to her welfare.

Elizabeth's religious moderation was tested when her cousin Mary, Queen of Scots (1542–1587) took sanctuary in England in 1568 after an uprising in Scotland. Mary was Catholic, and some Catholic factions at the national and international level believed that she was the rightful queen of England. Cecil and Walsingham were concerned that Mary's presence in England posed a threat to Elizabeth's safety. After almost twenty years in captivity in England, Mary was executed for treason in 1587.

Like many leaders, Queen Elizabeth had a strong sense of destiny: she had no doubt that her rise to the throne was the will of God. When informed that her half-sister Mary Tudor had died and that Elizabeth was now queen, Elizabeth stated, "This is the Lord's doing; and it is marvelous in our eyes" (Marshall 1991, 47). Elizabeth viewed the advantages that accrued from her sovereign status as far outweighing the disadvantages that accrued from her gender. For Elizabeth being a woman was more an irrelevance than a handicap, stating that "my sex cannot diminish my prestige" (Somerset 1997, 60).

During the sixteenth century the first duty of a monarch was to marry and have children, thereby ensuring the succession of the throne. Cecil in particular was eager to secure the succession and create a Protestant heir to the throne. As queen, Elizabeth was expected to marry someone of royal blood. She understood that marriage to a foreign prince offered some security from hostile nations in Europe, but she also understood that the English people were antagonistic toward foreigners. Mary Tudor's marriage to King Philip II of Spain had caused great disruption within England. Elizabeth's other option was marriage to an English nobleman. She thought, however, that such a marriage would create jealousies within the nobility and could lead even to civil war. To her, having to share power with a husband conflicted with her sense of personal destiny. Elizabeth's childhood experiences and her knowledge of international politics had led her to believe that marriage would be disadvantageous both to her and to her realm. Although an unmarried queen was considered unnatural at

that time, Elizabeth turned her single status into a strength.

Elizabeth's policy of remaining single did leave the problem of succession. The loss of such a charismatic leader as Queen Elizabeth left a vacuum in England that resulted in great internal conflict. On her death she was succeeded by the son of Mary, Queen of Scots, James I of England (1566–1625; reigned as James VI of Scotland 1567–1625 and as king of England 1603–1625), who had been raised a Protestant. This subsequent period in English history was one of social turmoil, religious strife, and civil war.

Elizabeth was an extraordinary woman, respected abroad and celebrated at home. Four hundred years after her death we still recognize her legacy as one of the greatest monarchs in English history. Her reign brought increasing prosperity and peace and strengthened England's international interests. After the turbulent years of Henry VIII's reign, the relative stability that England enjoyed during Elizabeth's reign advanced the development of English culture. Her reign led to the emergence of the mighty British Empire. In North America, Virginia (named after Elizabeth, the Virgin Queen) was explored and colonized. England defeated the Spanish Armada and became a dominant sea power. Drake circumnavigated the globe. Sailors such as Raleigh and Drake took the English language abroad; today it has become the language of world communication. Her policies encouraged development of parliamentary democracy, a moderate Church of England, and, for her time, a relatively prosperous, peaceful, and stable society. Many scholars consider the Elizabethan era to have been a golden age. Indeed, Elizabeth came to be known as "Gloriana," a name that reflected the triumphs of her reign.

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See also British Empire; Enlightenment, The; Scientific Revolution

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Empire

One of the most commonly used terms in world history, *empire* appears in reference to a long list of powerful states and societies, ranging from the ancient Akkadians to contemporary America. Many of the leading themes in world history—war, migration, trade, globalization—arose in conjunction with empires, which acted as crucial engines of change and touched the lives of immense numbers of peoples.

Dominic Lieven, a scholar of Russian government, has observed: “To write the history of empire would be close to writing the history of mankind” (2002, xiii). The very pervasiveness of *empire* as a historical category makes its meaning difficult to pin down. Definitions abound. Typologies proliferate. The term is often used interchangeably with *dynasty* and *civilization*. While most historians are likely to agree that *empire* refers to the political power exerted by a state or its agents over a culturally diverse group of peoples, this understanding of the term is so vague as to accommodate any number of different historical phenomena, ranging from the continental-wide conquests of the Mongols to the transoceanic extortions of the Portuguese. Moreover, even this definition may not be broad enough to account for the meaning of *empire* associated, for example, with the Holy Roman Empire, a loose affiliation of central European states that shared a common allegiance to the Catholic faith. In the end, *empire* can be seen a kind of palimpsest on which historians have written about various subjects associated with the consolidation of communities into large political units.

Etymology and Uses

The term *empire* derives from the Latin *imperium*, which originally meant the sovereignty held by a magistrate, but later evolved to refer to the authority that the ancient Romans established over much of Europe and the Near East. Its etymology indicates the main source and standard for its usage. The Roman Empire became the archetype of what an empire should look like and how it should behave, a positive model for the Europeans who sought to emulate its achievements. In the east, the Byzantine Empire kept its heritage alive for nearly a millennium. In the west, the Carolingian Empire, the Napoleonic Empire, the British Empire, Hitler’s Third Reich, and various other expansionist European states consciously evoked the Roman Empire in their iconography and ideological claims to legitimacy. The Roman model made its mark on European historiography as well, acquiring a prominent place in literature that sought to discern the patterns of history and distill its lessons. Edward Gibbon’s *Decline and Fall of the Roman Empire* (1776–1788) is arguably the most influential work of history ever written.

Empire also carries negative connotations, evoking charges of political and cultural oppression. This use of the term has its origins in the classical Mediterranean world as well, though its principle source is probably the Achaemenid Empire of Persia, which threatened the independence of the Greeks. The same connotations are attached in Western historiography to its successors, the Sasinid and Safavid empires, as well as to neighboring states that came in collision with Europe, notably the Ottoman and



The terracotta warriors of China's Qin dynasty were sculpted circa 210 BCE to guard the Emperor Shi Huangdi's tomb. Photo by Chris Howell.

Mughal empires. The term is used less consistently in other geographical and historical contexts. While the closest counterpart to the Roman Empire was in many respects the contemporaneous Han polity of China, it is more often called a dynasty than an empire. The same is true for its successor states—the Tang, the Song, the Ming, the Qing, and others.

Some historians have shown similar reservations about using the term *empire* in reference to the Abbasids and Umayyads, who consolidated political authority across much of the Near East and North Africa under the banner of Islam. In sub-Saharan Africa, indigenous polities rarely receive the appellation empire, the main exceptions being the West African states of Ghana, Mali, and Songhai, whose indirect association with medieval Europe gave them mythic reputations. Similarly, the only polities in the Americas commonly characterized as empires are those that fell to Spanish conquerors, the Aztecs and the Incas, even though archeologists have determined the earlier existence of other large states in the same locations and in other parts in the Western Hemisphere. The ambivalence and inconsistency that have characterized the use of *empire* serve as a reminder that words and their meanings are no less embedded in the particularities of history than other aspects of human experience.

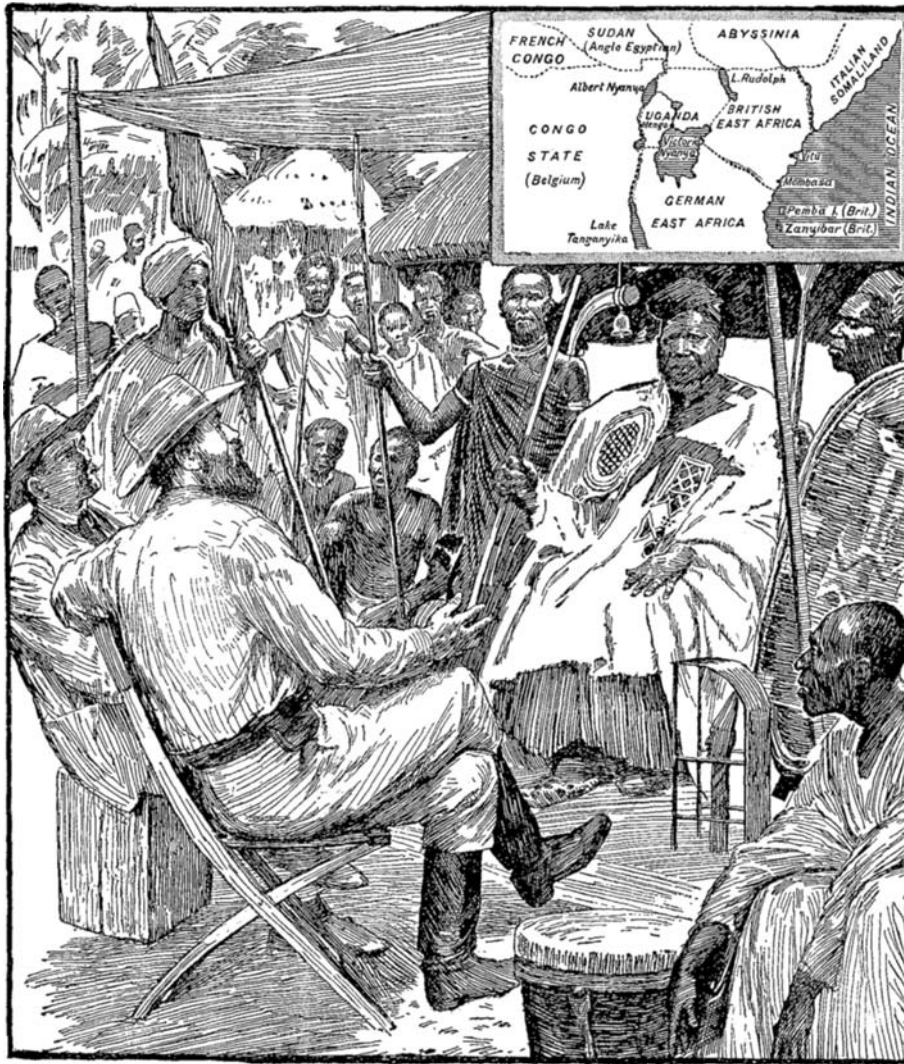
Empire Building as State Building

For all the semantic uncertainty surrounding the term *empire*, there can be little doubt that the phenomenon

it signifies was a consequence of the rise of states. Empires appeared on the scene soon after the first states came into existence in the densely populated river valleys of Mesopotamia, Egypt, China, and elsewhere. Indeed, the association between the two is so close that it is not entirely clear when state building becomes empire building. Every successful state soon expanded its reach well beyond the real or fictive lineage ties and ethnic bonds that supplied its original claims of sovereignty, relying on conquest and other coercive methods to bring additional peoples under its control. The demands for labor and tribute, the reliance on armies and bureaucracies, and the insistence on hierarchy and hereditary privilege were common to both types of polities. As David Armitage has stated, “Empires gave birth to states, and states stood at the heart of empires” (2000, 15).

The distinction most often drawn between empires and other states can be characterized as functions of intent and degree: empires are those states that seemed especially aggressive in their expansionist ambitions and especially accomplished at extending their sway over other peoples. Yet the same state could fluctuate quite dramatically in terms of the policies it pursued and the territories it controlled, thus exhibiting more or fewer of the characteristics of an empire as its aims and fortunes varied. It is impossible, for example, to know how to classify Pharaonic Egypt, which expanded and contracted repeatedly over the course of its long history, conquering others and being conquered in turn. Part of the problem derives from the fact that we tend to look at the intentions and actions of individual states to determine whether or when they were empires, whereas it was their “spheres of interaction” with neighboring peoples that often determined this outcome (Alcock et al. 2001, 40).

In modern times, the rise of the nation-state presents what seems at first sight a much clearer typological contrast to empire, since its reliance on linguistic and/or ethnic homogeneity and the claim of popular sovereignty stand at odds with the foundational premises of empire. Yet archetypal nation-states like Britain and France established huge empires that stretched



This illustration from a 1914 children's magazine is entitled "Round the World with the Union Jack." It supports the notion of empire with the European explorer sitting casually as he talks to the African leader.

around the globe. They resolved the apparent contradiction between their dual roles as nation-states and empires by maintaining strict institutional and ideological boundaries between the metropolitan sphere, where the principles of the nation-state applied, and the overseas possessions, where they did not.

Land-Based Empires

The vast majority of empires until the last four or five hundred years consisted of states that extended their power into contiguous territory, either through conquest or composite monarchy. A key dynamic in the rise and fall of these land-based empires was the sometimes complementary, sometimes adversarial relationship between the sedentary agricultural societies that gave rise to states and the pastoralists and other mobile peoples who operated outside the

boundaries of those states. The two groups usually kept their distance from one another, coming together mainly to trade goods, but environmental changes, demographic pressures, and other forces provoked periodic clashes between them. States and their agrarian populations enjoyed the advantages of concentration, central direction, and sheer numbers over their widely dispersed, frequently fissiparous adversaries, and their demand for land, labor, and tribute gave them motive to encroach on the domains of the latter.

Even when states merely sought to secure their frontiers against raids by nomads, their efforts often sucked them further and further into the hinterland in an unending quest for security. Given the right circumstances, these dynamics could lead them to absorb an immense amount of territory: two classic examples are the Roman and Han empires. The significance

It is yet another Civilized Power, with its banner of the Prince of Peace in one hand and its loot-basket and its butcher-knife in the other. • **Mark Twain (1835–1910)**

that these empires attached to their troubled relations with pastoralists and other unpacified peoples is evident in the way they represented themselves and their actions as advancing the cause of “civilization” against the “barbarians” on their borders. One of the standard tropes of empire would become this dichotomy between civilization and barbarism.

Pastoralists were by no means the mere victims of empires, however. A perennial theme of world history is the sudden breakout by nomadic invaders whose mobility, weaponry, and warrior ethos overwhelmed sedentary agricultural societies. These events had several quite different outcomes. One was the destruction of the conquered state and the fragmentation of political authority. Examples include western Europe after the fall of Rome in the fifth century CE and West Africa after the invasion of Songhai in 1591 CE. In other instances, the “barbarian” invaders preserved the lineaments of the state, but placed themselves at its head. Although they ran the risk of cultural absorption by the host society, they also gained access to its immense resources, which they were able to mobilize to carry out still more conquests. Two of the largest empires in Eurasian history were the work of pastoralist peoples, the Mongols and the Arabs. Both burst out of their natal lands (the Central Asian steppes and the Arabian desert), crushed the states that stood against them, created new state structures on the foundations of the old, and used them in the task of empire building with astonishing success.

After about 1450 CE, however, the pastoralist threat to agrarian societies began to disappear. As William H. McNeill and others have argued, the gunpowder weapons that came on the scene around this time proved to be more than a match for nomadic warriors on horseback. They gave an irreversible strategic advantage to large sedentary states, which had the fiscal, technical, and logistical means to produce these weapons on a large scale and put them into use with devastating effect. The result was the rise of new gunpowder empires in Europe, Russia, China, India, and the Near East which hemmed in their nomadic neighbors and put an end forever to their depredations on agricultural communities.

Transoceanic Empires

The mid-fifteenth century marked a related shift in the history of empires—the rise of western European transoceanic empires. The projection of power by sea was not in itself a new phenomenon. The Greeks and the Phoenicians had used their seafaring skills to plant their peoples and spread their influence across the ancient Mediterranean world, though neither found a way to knit their scattered communities together into a single powerful state. The Vikings faced the same problem despite their remarkable success in raiding and settling coastal zones from the North Sea to the Mediterranean. The Persian Gulf, Indian Ocean, and the South China Sea all sustained their own series of seaborne traders and raiders, some of whom established polities of considerable size and sophistication. By sitting astride the Malaccan Strait, a chokepoint in the Asian seaborne trade, Srivijaya became the dominant power in Southeast Asia in the seventh century. Oman, a small city-state on the southern Arabian coast, controlled trade along the east coast of Africa through much of the eighteenth and nineteenth centuries. In the estimation of some historians, both states became empires.

The transoceanic empires established by western European states shared some features with the cases mentioned above, but they differed in crucial respects as well. Like most of their sea-borne predecessors, they set out in search of trade, not of the tribute that sustained land-based empires. Trade would remain an integral feature of these empires, so much so that many theorists and historians have concluded that modern European imperialism was driven first and foremost by the demands of commerce and capitalism. But western European states also established the sort of centralized political control over their overseas possessions that was more characteristic of land-based empires than of previous seaborne polities. This can be explained in part by the fact that they were at the forefront of the military revolution precipitated by gunpowder weaponry, allowing them to exercise power over greater distances than ever before. Above all, however, it was due to the contemporaneous consolidation



Fortifications have been a key component of empire building. El Morro, built by the Spanish in San Juan, Puerto Rico, has been maintained as a tourist attraction and educational facility.

of strong centralized states at home, which provided the incentives—and the blueprints—for the extension of these policies and institutions abroad.

Portugal, the earliest and least developed of the European states that sought an overseas empire, had the least success in establishing a political foothold in foreign lands. Its larger and more powerful neighbor, Spain, effected a far greater transformation on the territories it claimed. And although France, England, Holland, and other European states each had its own distinct imperial style, all of them sought to subordinate the colonies they established to the political will of the metropolis.

Most historians agree that these European overseas empires had an unprecedented effect on world history. By bringing together parts of the world that had been effectively isolated from one another since the dawn of civilization, they set in motion a series of changes that rippled around the globe. They brought about a transfer of diseases, plants, and animals that transformed environments and societies almost everywhere. One of the most immediate consequences was the sharp

reduction of indigenous populations in the Americas, Australia, and other regions where the arrival of deadly new microbes generated “virgin soil” epidemics, while over the long term the spread of new food crops supported an unparalleled growth in the world’s population. European overseas empires also facilitated the transfer of peoples from one continent to another.

Streams of emigrants from Europe settled in North America, Australia, New Zealand, and other mainly temperate lands, laying the foundations for what Alfred Crosby has aptly termed “neo-Europes.” At the same time, millions of Africans were sent as slaves to New World plantations, while large numbers of indentured servants from India, China, and other lands sailed across the seas to meet the labor demands of European-owned economic enterprises. These enterprises were integral to the global transfer of goods that also distinguished the transoceanic empires of western European states. By orchestrating the operations of this system, Europeans became its main beneficiaries. This was especially true after industrialization at home skewed the terms of trade in favor of European manufactured



goods, creating a growing disparity of wealth between Europe and much of the rest of the world. Although the United States, Japan, and other countries worked their way into the column of industrialized countries, the fissure between rich and poor peoples remains a lasting legacy of European overseas empires.

Ideologies of Empire

While the drive for power and wealth may have been the basic motive behind imperial expansion, no empire lasted very long if it didn't develop an ideological claim on behalf of its own legitimacy. Quite apart from inspiring the empire's agents or easing their consciences, this claim sought to make conquered peoples more acquiescent to their own subjugation. The key to accomplishing this goal was the dissemination of an idea or doctrine that overcame ethnic or cultural particularisms, offering in their stead integration into a larger imperial identity. The Romans were famous for their promise of citizenship under Roman law. The Han and their successors embraced Confucian principles and perpetuated them through the efforts of a relatively open bureaucratic elite. Although rulers also relied on religion to bolster their authority, they ran the risk that their official faith would alienate subject peoples who worshipped different gods. Most empires took care to respect religious diversity.

The relationship between empire and religion did, however, undergo a significant shift with the emergence of Christianity and then Islam. Both were universalist creeds that welcomed all converts, irrespective of their origins. This made them attractive to empires seeking ways to incorporate newly conquered subjects; by the same token, empires were attractive to them as instruments for the propagation of the faith. Though forced conversions were uncommon and counterproductive, both Christianity and Islam often worked hand-in-glove with empires, supplying them with important ideological rationales for their rule.

Christianity was integral to the early modern European empires, which found especially fertile grounds for their missionary endeavors among the demoralized and much diminished peoples of the Americas and the

deracinated slaves shipped from Africa. Once they came into possession of large tracts of South and Southeast Asian territory in the late eighteenth century, however, they had to develop alternative justifications for their presence, since Christianity simply antagonized the region's Hindu, Muslim, and Buddhist populations. The introduction of stable government and the rule of law, the promotion of prosperity through international trade, the advancement of scientific knowledge and its application in modern medicine and technology, and various other claims were made in justification of European imperial rule. Underlying all of these claims was the assertion that empire brought the benefits of civilization to colonial subjects. Whether expressed in secular or religious terms, a belief in the superiority of its own way of life—what it characterized as civilization—lay at the ideological heart of every empire.

Costs, Benefits, Consequences

Whether for good or ill, empires were crucial engines of change in world history. They were the paramount institutional expressions of the human will to power, exerting greater authority over greater numbers of people than any other system of rule. Their armies and ambitions caused untold human suffering and destruction. At the same time, they brought culturally diverse and geographically scattered peoples together, providing the political framework for the rise of those large, vigorous societies that often go by the name of civilizations. They also served as the nurseries for the acquisition of skills, the invention of products, and the origination of ideas that spread far beyond the physical boundaries and the temporal existence of the empires themselves. Lastly, their relentless drive for expansion supplied much of the impetus for those ever-enlarging systems of interaction and exchange that eventuated in what we now know as globalization, with all its attractions and drawbacks.

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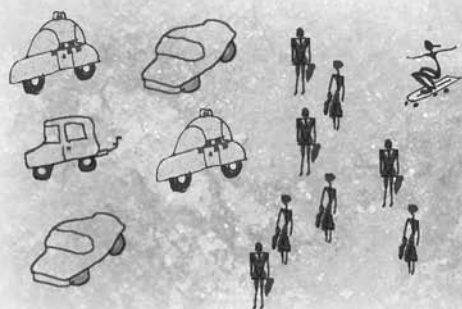
See also Engines of History; Imperialism; Religion and Government

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Energy

From simple mechanical muscle energy to the energy derived from radioactive materials, energy use has ebbed and flowed throughout history. The economic, social, and political consequences of these changes are great, correlating with the rise and fall of empires and eras. Energy use continues to evolve in tandem with humanity and will dictate which choices are available for future development.

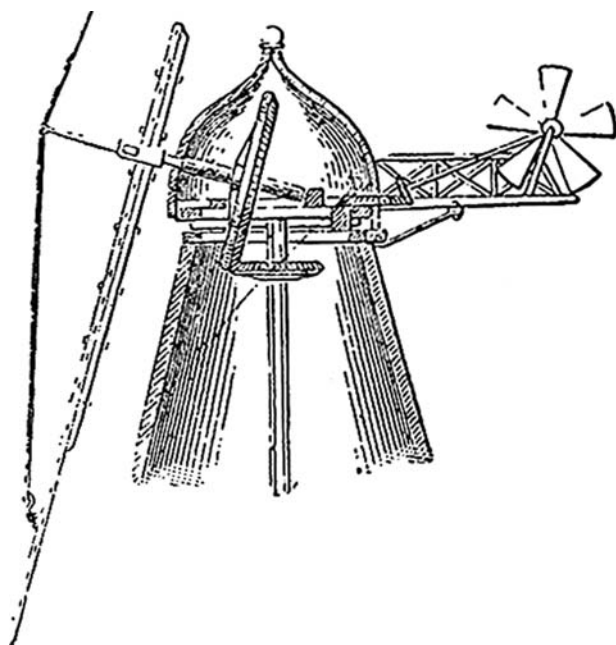
When seen from the most fundamental physical point of view, all processes—natural or social, geological or historical, gradual or sudden—are just conversions of energy that must conform to the laws of thermodynamics as such conversions increase the overall entropy (the degree of disorder or uncertainty) of the universe. This perspective would make the possession and mastery of energy resources and their ingenious use the critical factor shaping human affairs. Also, given the progressively higher use of energy in major civilizations, this perspective would lead logically to a notion of linear advances with history reduced to a quest for increased complexity that is made possible by higher energy flows. People who could command—and societies and civilizations who could use large or high-quality energy resources with superior intensities or efficiencies—would be obvious thermodynamic winners; those converting less with lower efficiencies would be fundamentally disadvantaged.

Such a deterministic interpretation of energy's role in world history may be a flawless proposition in terms of fundamental physics, but it amounts to a historically untenable reductionism (explanation of complex life-science processes and phenomena in terms of the

laws of physics and chemistry) of vastly more complex realities. Energy sources and their conversions do not determine a society's aspirations, its ethos (distinguishing character, sentiment, moral nature, or guiding beliefs) and cohesion, its fundamental cultural accomplishments, its long-term resilience or fragility.

Nicholas Georgescu-Roegen, a pioneer of thermodynamic studies of economy and the environment, made a similar point in 1980 by emphasizing that such physical fundamentals are akin to geometric constraints on the size of the diagonals in a square—but they do not determine its color and tell us nothing whatsoever about how that color came about. Analogically, all societies have their overall scope of action, their technical and economic capacities, and their social achievements constrained by the kinds of energy sources and by varieties and efficiencies of prime movers that they rely on—but these constraints cannot explain such critical cultural factors as creative brilliance or religious fervor, and they offer little predictive guidance regarding a society's form and efficiency of governance or its dedication to the welfare of its citizens. The best explanation of energy's role in history thus calls for a difficult task of balancing these two realities, of striving for explanations that take account of these opposites.

Periodization based on the dominant uses of primary energy cleaves world history into just two highly asymmetrical spans: the renewable fuel era and the nonrenewable fuel era. All premodern societies relied overwhelmingly on solar, that is, perpetually (when measured on civilizational time scales) renewable energies. They derived their heat and light from biomass (the amount of living matter) that is produced by



This diagram shows the primary mechanical parts of the upper portion of a windmill.

photosynthetic conversion of sunlight and harvested mostly as wood and crop residues, above all straws and stalks; plant and animal fats were also used in lighting. Their kinetic energy came from human and animal metabolism (energized, obviously, by eating the biomass) and, to a much lesser extent, from wind and flowing water, the two forms of converted solar radiation (after it is absorbed by the Earth's biosphere) that power the global water cycle and atmospheric circulation.

Fossil fuels, too, had their origin in photosynthesis, but the constituent biomass was subsequently transformed into qualitatively new materials over a period of 1 million to 100 million years by high temperatures and pressures in the uppermost layers of the Earth's crust. Consequently, fossil fuels—ranging, in the ascending order of quality, from peats through various coals (lignites to anthracites) to hydrocarbons (crude oils and natural gases)—are not renewable on historic time scales. This means that premodern, solar societies had an energy basis whose potential longevity coincided with the remaining duration of the biosphere (the part of the world in which life can exist) itself (i.e., still hundreds of millions of years to go). On the other hand, modern societies will have to change their energy base if they are to survive for more than a few hundred years.

Biomass Fuels

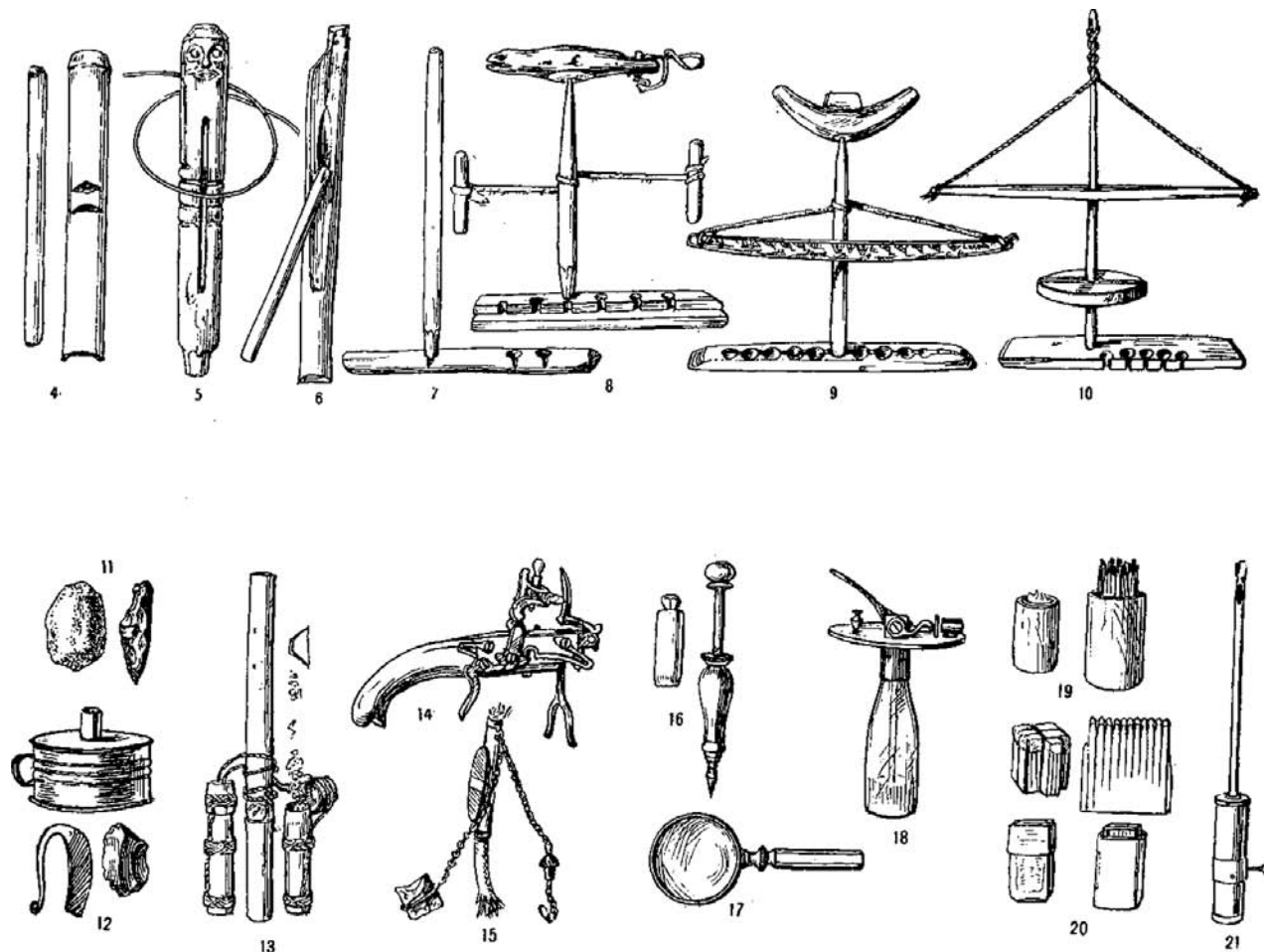
Biomass fuels had two inherent disadvantages: low power density (expressed in watts per square meter— W/m^2) and low energy density (expressed in joules per kilogram— J/kg). Even in rich forests biomass was harvested with densities not surpassing 1 W/m^2 , but most people did not have tools to cut mature tree trunks and had to rely on smaller trees, branches, and leaves gathered with much lower density. Similarly, the collection of crop residues, needed also as feed and as a raw material, rarely yielded more than 0.1 W/m^2 . Consequently, extensive forested areas were needed in order to supply the energy needs of larger settlements. A large preindustrial city in a temperate climate would have required at least 20 to 30 watts (W) per square meter of its built-up area for heating, cooking, and manufacturing, and, depending on the kind fuel it used, it would have needed a nearby area of up to three hundred times its size to supply its fuel. The constraint is clear: no temperate-climate megacities of 10 million people or more could have existed during the era when wood was the main source of energy.

These power density limitations became even more acute after charcoal became used on a relatively large scale. Conversion from wood to charcoal was done to increase wood's low energy density: in its air-dried

Table 1.
Energy Densities of Common Fuels

Fuel	Density (MJ/kg)
Dried dung	10–12
Air-dried straw	14–16
Air-dried wood	15–17
Charcoal	28–29
Lignites	10–20
Bituminous coals	20–26
Anthracites	27–30
Crude oil	41–42
Gasoline	44–45
Natural gas (cubic meters)	33–37

Source: Smil (1991).



This series of drawings shows the variety of means used to make fire over time and across cultures: (4) fire saw from Borneo; (5) fire thong from Borneo; (6) fire plow from Polynesia; (7) fire drill from Native America; (8) fire drill from Inuit of Alaska; (9) fire drill from Inuit of Alaska; (10) fire drill from Iroquois of Canada; (11) strike-a-light from Inuit of Alaska; (12) strike-a-light from England; (13) strike-a-light from Malaysia; (14) tinder pistol from England; (15) strike-a-light from Spain; (16) fire syringe from Thailand and Malaysia; (17) lens from ancient Greece; (18) hydrogen lamp from Germany; (19) match light box from Austria; (20) matches; (21) electric gas lighter from the United States.

form (about 20 percent moisture) the fuel had about 18 MJ/kg, whereas charcoal rates about 60 percent higher at 29 MJ/kg. The obvious advantages of the better fuel include smaller mass to be transported and stored, smaller furnaces (or braziers), less frequent stoking, and less air pollution. But traditional charcoaling was inefficient, wasting about 80 percent of the initially used wood in the process. This waste would put a great strain on wood resources even if charcoal's use was limited to space heating and cooking, but its expanded use in various manufactures and in metallurgy made it an acutely limiting factor. For example, in 1810 the metallurgical charcoal needs of

the United States prorated annually to a forested area of roughly 50 by 50 kilometers (2,500 square kilometers), and a century later they would have amounted to an area of 170,000 square kilometers, equal to a square whose side is the distance between Philadelphia and Boston. The constraint is clear: no global steel-dominated civilization based on charcoal could exist, and coal-derived coke took over.

Human and Animal Muscles

Similarly, the limited power of human and animal muscles constrained productive capacities as well as



Russell Lee, *Filling Station and Garage at Pie Town, New Mexico* (1940). Color slide. This photo is part of an iconic series commissioned by the Farm Security Administration to document life in the United States after the Depression. Library of Congress.

aggressive forays of all traditional societies. Healthy adults can sustain work at 40–50 percent of their maximum aerobic capacity, and for men (assuming muscle efficiencies of 20 percent) this translates to 70–100 W of useful work. Small bovines (cattle and water buffalo) can sustain about 300 W, lighter horses around 500 W, and heavier animals 800–900 W (one horsepower is equal to 745 W). These rates give common equivalences of at least four men for an ox and eight to ten men for a horse. No less importantly, heavier draft animals can develop briefly maximum power well in excess of 3 kilowatts (kW) and can thus perform tasks unattainable by men (plowing heavy soils, pulling out tree stumps). Larger numbers of stronger draft animals thus greatly improved the productivity of traditional farming: even slow plowing was three to five times faster than hoeing.

These gains, however, had to be paid for by devoting more time to caring for these animals and devoting increasing amounts of land to their feeding. For example, feeding the peak number of U.S. farm horses and mules in 1919 (approximately 25 million) required about 20 percent of the country's farmland. Obviously, only countries endowed with extensive farmland could afford this burden: the option was foreclosed for Japan, China, or India. Heavier draft animals and better implements eventually cut the time that was spent in producing staple crops. For example, all fieldwork on a hectare of wheat required

180 hours in medieval England, 120 hours in early nineteenth-century Holland, and 60 hours on the U.S. Great Plains in 1900. But in any society where food production was energized solely by human and animal muscles, most of the labor force had to be employed in agriculture. The rates ranged from more than 90 percent in imperial China to more than 66 percent in the post-Civil War United States, and in all traditional agricultures children commonly helped adults.

Limits were also obvious in warfare because even trained muscles could impart relatively restrained destructive force to the tools of war, a reality made clear by comparing kinetic energies of common pre-industrial weapons. The kinetic energy of a single stone ball shot from a medieval cannon equaled that of five hundred arrows discharged from heavy crossbows or one thousand thrusts delivered with heavy swords. Pregunpowder battles thus consisted of limited expenditures of muscular energy, a reality that explains frequent preference for either sieges or stealthy maneuvers. Wars became much more destructive only with the introduction of gunpowder—in China during the tenth century and in Europe at the beginning of the fourteenth century.

Speed of travel was another obvious constraint imposed by animate metabolism and by inefficient conversion of wind. Speedy running and horse



The water mill at *Tranquille Mills, Kamloops Lake, British Columbia, 1871*. Photo by Benjamin F. Baltzly. McCord Museum.

riding were used only for urgent messaging, and impressive distances could be covered in a single day: the maximum on Roman roads was up to 380 kilometers. Speeds of normal travel, however, were restricted to 10–15 kilometers a day for men with wheelbarrows (a common means of transport in imperial China), not much more for wagons drawn by oxen, 30–40 kilometers for wagons pulled by heavy horses, and 50–70 kilometers for passenger horse carts on relatively good roads. The prohibitive costs of animate land transport are perfectly illustrated by prices noted in the Roman emperor Diocletian's famous *edictum de pretiis* (price edict): in 301 CE moving grain just 120 kilometers by road cost more than shipping it from Egypt to Ostia, Rome's harbor.

Preindustrial Inanimate Prime Movers

Most preindustrial Old World societies eventually introduced simple mechanical devices to convert two indirect solar energy flows—flowing water and wind—to rotary power, and they also used sails to propel their ships. The evolution of sails shows slow progress from inefficient square sails of ancient Egypt

and classical Mediterranean cultures to triangular sails of the Muslim world, batten sails of medieval China, and finally complex rigging (flying jibs, fore, main, mizzen, topgallant, and spanker sails) of large ships that early modern Europe sent on its global conquests during the eighteenth and nineteenth centuries. Although seaborne transport was by far the cheapest alternative, it was both unpredictable and unreliable.

The best sailing ships—British and U.S. China clippers of the second half of the nineteenth century—could average more than 30 kilometers per hour for hours and came close to 20 kilometers per hour for entire intercontinental journeys, whereas the best Roman cargo vessels could not surpass 10 kilometers per hour. But all sailing ships had to resort to extensive tacking when sailing into the wind or could be becalmed by lack of winds. Consequently, grain ships sailing between Ostia and Egypt could take as little as a week or as long as three months or more, and two thousand years later homeward-bound English ships had to wait sometimes up to three months for the right wind to take them into Plymouth Sound.

The origins of waterwheels remain uncertain, but, notwithstanding such impressive examples as a cascade of Roman watermills in Barbegal in southern France, they were of limited importance in all classical societies where slave labor provided cheap energy for grain milling and manufacturing tasks. Waterwheels did become particularly important in some medieval societies where their power was used above all for food processing, wood sawing, and metallurgical processing. However, eight hundred years passed before the capacities of the largest wheels increased tenfold, and by the beginning of the eighteenth century, when they were the largest available prime movers, their European ratings averaged less than 4 kW, an equivalent of just five heavy horses. Windmills appeared only toward the end of the first millennium CE and, much as waterwheels, became eventually important in some Middle Eastern and Mediterranean countries and in parts of the coastal Atlantic Europe.

Table 2.
Sustained Power of Mobile Prime Movers

Prime Mover	Sustained Power (W)
Working child	30
Small woman	60
Strong man	100
Donkey	150
Small ox	300
Typical horse	600
Heavy horse	800
Early small tractor (1920)	10,000
Ford's Model T (1908)	15,000
Typical tractor (1950)	30,000
Honda Civic (2000)	79,000
Large tractor (2000)	225,000
Large diesel engine (1917)	400,000
Large marine diesel engine (1960)	30,000,000
Four gas turbines of Boeing 747 (1970)	60,000,000

Source: Assembled from data in Smil (1994 and 2003).

Again, however, even the relatively advanced Dutch machines averaged less than 5 kW during the eighteenth century.

As a result, societies that derived their kinetic energy almost exclusively or overwhelmingly from animate power that was supplemented locally and regionally by small waterwheels and windmills could not guarantee either an adequate food supply or a modicum of material comforts for most of their inhabitants. Nutrition remained barely sufficient even after good harvests (yields remained static for centuries), famines were recurrent, small-scale artisanal manufactures (except for a limited luxury trade) were inefficient and limited to a narrow range of crude products, typical personal possessions were meager, illiteracy was the norm, and leisure and travel were uncommon.

Fossil Fuels, Prime Movers, Electricity

All of those circumstances changed with the introduction of fossil fuels. Although people had used coal in parts of Europe and Asia in limited ways for centuries, the Western transition from biomass to coal took place (obviously with the exception of England) only during the nineteenth century (for example, in the United States wood supplied more than half of all

primary energy until the early 1880s), and in the most populous Asian countries the transition was accomplished only during the second half of the twentieth century. The oldest fossil fuels (anthracites) go back 100 million years, the youngest ones (peats) go back just 1,000 years. Both solid fuels (different kinds of coal) and hydrocarbons (crude oils and natural gases) are found in often highly concentrated deposits from which they can be extracted with extraordinarily high-power densities: coal mines with multiple seams and rich oil and gas fields can produce between 1,000 and 10,000 W/m², densities 10,000–100,000 higher than those for biomass fuels.

Moreover, fossil fuels, with the exception of marginal kinds such as low-quality lignites and peat, also have much higher energy densities: steam coal, now used largely for electricity generation, rates 22–26 MJ/kg, and crude oil and refined products rate 42–44 MJ/kg. Extraction and distribution of fossil fuels thus create energy systems that are the opposite of biomass-based societies: high-energy-density fuels are produced from a limited number of highly concentrated deposits and then distributed not just regionally or nationally but increasingly also globally. The distribution task is particularly easy with liquid hydrocarbons that are shipped by large tankers or sent through large-diameter pipelines. Not surprisingly, liquid fuels became the world's leading energy sources during the latter half of the twentieth century.

Desirable qualities of fossil fuels were greatly augmented by two fundamental technical revolutions: the invention and rapid commercial adoption of new mechanical prime movers, and by the creation of an entirely new energy system that produced and distributed electricity. Chronologically, the new inanimate prime movers were steam engines, internal combustion engines, steam turbines, and gas turbines, and their evolution has brought increased overall capacities and higher conversion efficiencies. The English inventor Thomas Newcomen's steam engines (after 1700) were extraordinarily wasteful, converting no more than 0.5 percent of energy in coal into reciprocating motion; the Scottish inventor James Watt's radical redesign

Table 3.
Sustained Power of Stationary Prime Movers

Prime Mover	Sustained Power (W)
Large Roman waterwheel (200 CE)	2,000
Typical European waterwheel (1700)	4,000
Large Dutch windmill (1720)	5,000
Newcomen’s steam engine (1730)	10,000
Watt’s largest steam engine (1800)	100,000
Large steam engine (1850)	250,000
Parsons’s steam turbine (1900)	1,000,000
Largest steam engine (1900)	3,500,000
Typical steam turbine (1950)	100,000,000
Largest steam turbine (2000)	1,500,000,000

Source: Assembled from data in Smil (1994 and 2003).

(separate condenser) raised the performance to 5 percent by 1800, and his machines averaged about 20 kW, equivalent to two dozen good horses. Before the end of the nineteenth century gradual improvements increased the power of the largest steam engines to the equivalent of four thousand horses and their efficiency to more than 10 percent.

These machines powered the main phase of nineteenth-century industrialization by mechanizing many industrial processes, expanding productive capacities, and putting the cost of an increasing range of basic consumer products within the reach of average families. Their impact was particularly critical in coal mining, the iron and steel industry, and machine construction. They also offered unprecedented power for both landborne and waterborne transportation. By 1900 railways offered scheduled services at speeds an order of magnitude faster than those of horse-drawn carriages, and large steamships cut the transatlantic crossing to less than six days, compared to the pre-1830s mean of nearly four weeks.

Their peak was short-lived however: during the last two decades of the nineteenth century small steam engines began to be replaced by internal combustion machines and the large ones by steam turbines. Internal combustion engines of the German engineer Nicolaus Otto’s motorcycle (commercialized as stationary machines after 1866 and as wheeled transport by the German engineers Gottlieb Daimler, Karl Benz, and Wilhelm Maybach starting in the 1880s) eventually reached efficiencies in excess of 20 percent. Inherently more efficient engines of the German engineer Rudolf

Diesel (introduced after 1900) reached more than 30 percent. Inventions of the 1880s, the most innovation-packed decade in history, also laid lasting foundations for the development of the electric industry with the U.S. inventor Thomas Edison’s development of an entirely new energy system (a contribution more important than his tenacious work on incandescent light), the U.S. inventor Nikola Tesla’s electric motor, and the Irish engineer Charles Parsons’s steam turbine.

Electricity provided the superlative form of energy: clean at the point of use, convenient, flexible to use (as light, heat, motion), and amenable to precise control. The latter fact revolutionized industrial production as electric motors (eventually more than 90 percent efficient) replaced unwieldy and wasteful steam-driven shafts and belts. The last of the modern prime movers, the gas turbine, was introduced for aircraft jet propulsion during the 1930s, and later it also became a common choice for generation of electricity. All of these machines were much lighter per unit of installed power than were steam engines—and hence more compact and (with the exception of large steam turbogenerators) suitable for mobile applications.

On the destructive side the Swedish manufacturer Alfred Nobel’s invention of dynamite introduced an explosive whose detonation velocity was nearly four times that of gunpowder, and even more powerful compounds followed soon. By 1945 destructiveness was raised to an entirely new level by the development of nuclear-fission weapons, with fusion bombs following just a few years later. By the time the Cold War ended in 1990 with the demise of the USSR, the two superpowers had diverted significant shares of their total energy consumption to the assembly of an incredibly destructive arsenal that amounted to nearly twenty-five thousand strategic nuclear warheads whose aggregate capacity was equivalent to nearly half a million Hiroshima bombs.

Modern Energy Systems

Every component of fossil-fueled energy systems experienced impressive gains in capacity and efficiency,



A milk seller in Brussels, Belgium, circa the 1890s. The power of wind has been harnessed for centuries to mill grain.

the combination that resulted in large increases in per capita consumption of energy. Although the world's population nearly quadrupled between 1900 and 2000 (from 1.6 billion to 6.1 billion), the average annual per capita supply of commercial energy more than quadrupled, and higher efficiencies meant that in the year 2000 the world had at its disposal about twenty-five times more useful commercial energy than it did in 1900. As a result, today's affluent economies have experienced eightfold to tenfold increases in the per capita supply of useful energy services (heat, light, motion), and the corresponding multiples have exceeded twenty-, or even thirtyfold, in such industrializing countries as China or Brazil: never before in history had an even remotely comparable gain translated into enormous improvements in the quality of life.

Gains in energy flows that are controlled directly, and casually, by individuals were equally stunning. In 1900 even a well-off U.S. farmer holding the reins of six large horses controlled sustained delivery of no

more than 5 kW of animate power; a century later his great-grandson driving a large tractor controlled more than 250 kW from the air-conditioned comfort of his cabin. In 1900 a stoker on a transcontinental train traveling at 100 kilometers per hour worked hard to sustain about 1 megawatt (MW) of steam power; in 2000 a pilot of a Boeing 747 retracing the same route 11 kilometers above the Earth's surface merely supervised computerized discharge of up to 60 MW at a cruising speed of 900 kilometers per hour.

In 2000, however, the benefits of those spectacular energy flows remained unevenly divided. When measured in metric tons of oil equivalent (toe), annual per capita energy consumption in the year 2000 ranged from about 8 in the United States and Canada to 4 in Germany and Japan, less than 3 in South Africa, 1 in Brazil, about 0.75 in China, and less than 0.25 in many countries of sub-Saharan Africa. Yet a closer look at the rewards of high energy consumption shows that all of the quality-of-life variables (life expectancy, food supply, personal income, literacy, political freedom) relate to average per capita energy use in a distinctly nonlinear manner: clear diminishing returns set in for all of these variables as the energy use increases beyond 1–2 toe/capita, and there are hardly any additional gains attached to levels above roughly 2.5 toe. This reality becomes obvious when one asks a simple question: have the lives of U.S. citizens of the last two generations been twice as good (twice as long, healthy, productive, literate, informed, or free) as those of people in western Europe or Japan?

What does a rich energy endowment do for a country? In the United States it has obviously contributed to the country's emergence as an economic, military, and technical superpower—but it could not prevent the collapse of the USSR, which was in 1989 the world's largest producer of fossil fuels. Other prominent examples of the failure to use rich energy resources to build modern, prosperous societies include such different societies as Iran, Nigeria, Sudan, and Indonesia: none of them secured vibrant economies and prosperous lives for its citizens. In contrast, three energy-poor



Power windmills along the ancient Silk Roads route, near Korla, Xinjiang Uygur Autonomous Region, 1993.
Photo by Joan Lebold Cohen.

countries of eastern Asia (Japan, South Korea, Taiwan) became the paragons of rapid economic growth and impressive improvements in average quality of life.

Finally, energy use cannot explain the rise and fall of major civilizations and powerful societies. Such notable consolidations and expansions as the rise of Egypt's Old Kingdom, maturation of the Roman republic, unification of Han China (206 BCE–220 CE), the spread of Islam, the Mongolian conquests in Eurasia, and the enormous eastward extension of the Russian Empire cannot be linked to any new prime movers or to new, or more efficient, fuel uses. As for the declines, no drastic change of fuel base and delivery (wood, charcoal) or prime movers (slaves, oxen, horses, sailing ships, waterwheels) took place during the long decline of the western Roman Empire (the eastern part managed to survive with the identical infrastructure for another millennium), and none of the great breaks of the early modern and modern world—the French Revolution, the collapse of the czarist Russian Empire, the fall

of Nationalist China, the collapse of the USSR—could be given convincing (or indeed any) energy explanations.

Energy resources and uses are, undeniably, among the critical variables whose specific and unpredictable combinations determine the fortunes of societies. They promote, restrict, or complicate many economic and individual options, and once in place they are critical for setting the tempo of life and the levels of general welfare. Immutable dictates of thermodynamics also mean that higher socioeconomic complexity requires higher energy flows. This undeniable relationship is not a matter of continuous linear progress, however, but rather one of a relatively early saturation. Moreover, possession of abundant energy sources or their high consumption cannot guarantee well-functioning economies, decent quality of life, personal happiness, or a nation's security. Energy sources and uses constrain our actions but do not dictate our choices, do not assure economic success, and do not condemn civilizations to failure. In the modern world the only inescapable consequences of

The release of atom power has changed everything except our way of thinking . . . the solution to this problem lies in the heart of mankind. If only I had known, I should have become a watchmaker. • **Albert Einstein (1879–1955)**

Table 4.
Energy of Weapons

Projectile	Kinetic Energy of Projectile (J)
Arrow from a bow	20
Arrow from a heavy crossbow	100
Bullet from a Civil War musket	1×10^3
Bullet from an assault rifle (M16)	2×10^3
Stone ball from a medieval cannon	50×10^3
Iron ball from an eighteenth-century cannon	300×10^3
Shrapnel shell from World War I artillery gun	1×10^6
High-explosive shell from a heavy World War II antiaircraft gun	6×10^6
Depleted uranium shell from M1A1 Abrams tank	6×10^6
Hijacked Boeing 767 (11 September 2001)	4×10^9
Explosives	Energy Discharged (J)
Hand grenade	2×10^6
Suicide bomber	100×10^6
World War II gun shrapnel	600×10^6
Ammonium nitrate-fuel oil (ANO) truck bomb (500 kilograms)	2×10^9
Hiroshima bomb (1945)	52×10^{12}
U.S. ICBM warhead	1×10^{15}
Tested Novaya Zemlya fusion bomb (1961)	240×10^{15}

Source: Author's calculations using primary data from a variety of sources.

higher energy use are greater impacts on the Earth's biosphere: the fate of modern civilization may be ultimately decided by our capacity to deal with this challenge.

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See also Coal; Natural Gas; Oil; Water Energy; Water Management; Wind Energy

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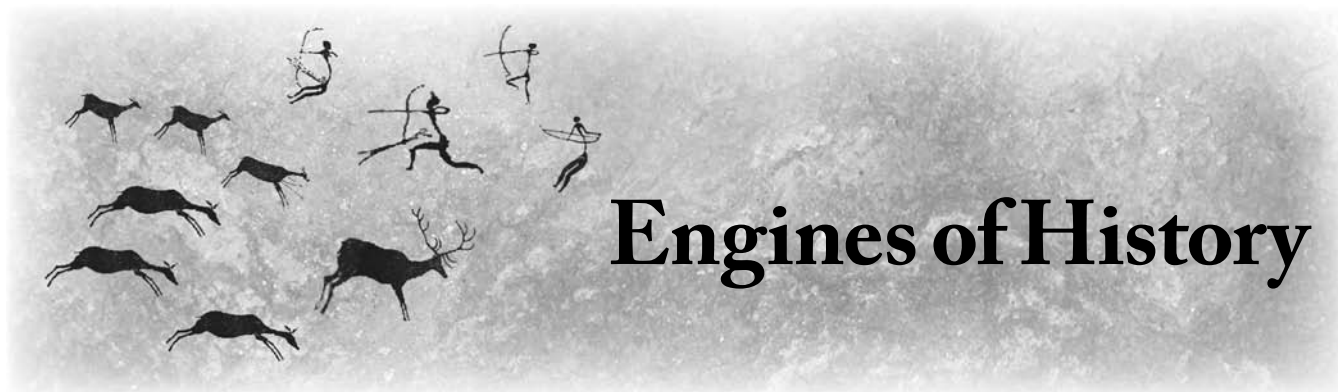
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Engines of History

Divine, secular, and political forces have been given primacy as the chief drivers of history over the centuries. These forces evolved from the Mandate of Heaven to Marxism. Rapid upheavals of the twentieth century, along with technological change and the increasing awareness of human impact on the biosphere, have invited a recasting of history that takes into account scientific processes of which humans were previously unaware.

Human beings like to understand what goes on around them, and historians, being human, like to understand what they write about. They do so by finding causes even for the most surprising events. This was true from the start. Herodotus (484–425 BCE), for example, set out to explain how a few small Greek cities had been able to defeat an immense Persian army and navy, while the first historian of China, Sima Qian (c. 145–86 BCE), sought to explain how China's ruling dynasties rose and fell. Herodotus found a twofold explanation: free men, he said, fought willingly and more bravely than Persian subjects, forced to obey a mighty king; moreover, the king's overweening pride also offended the gods, who sent storms to damage his invading fleet. Similarly, Sima Qian invoked both human and supernatural causes. According to him a ruler's virtue allowed him to rule well and therefore attracted the Mandate of Heaven, but when rulers ceased to be virtuous, heaven withdrew its mandate, and good government broke down until a virtuous new ruler emerged to found another ruling dynasty.

These ideas about what made history happen the way it did proved to be very influential. Until about

a hundred years ago, China's historians continued to organize their histories around successive dynasties empowered by the Mandate of Heaven. And the idea that freedom made men successful in war (and also in peace) appealed to Romans as well as to Greeks, and reentered European consciousness with the Renaissance.

But in the world as a whole, the Hebrew prophets' idea that Almighty God governed history, punishing peoples and persons for their sins, and rewarding scrupulous obedience to his will, played a more influential role, dominating Jewish, Christian, and Muslim societies from the inception of those religions. For believers, Divine Providence remained inscrutable to everyone except specially chosen prophets. Yet ordinary chroniclers and historians took God's will for granted as the decisive force behind everything that happened. Other causes, when they bothered with them, were only subordinate instruments of God's will. Hinduism and Buddhism, on the other hand, treated the visible world as an illusion and paid scant attention to human history. Instead religious speculation about endless cycles of reincarnation reduced everyday events to transient triviality.

The Importance of Animism

Behind and beneath these civilized literary traditions lay a much older interpretation of the world that modern anthropologists call animism. Its basic tenet is that natural objects are inhabited by invisible spirits and share the spectrum of cooperation and conflict that humans exhibit in everyday interactions with one another. Spirits can also move about invisibly, entering and leaving a person or object at will. Hence



Horus, the falcon-headed god often associated with Egyptian pharaohs, wears the white and red double crown of Upper and Lower Egypt in a drawing inspired by a mural at the Temple of Isis.

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the world of spirits exactly parallels human societies. Individual spirits work their will when they can, submit when they must, and influence everything that happens to human beings.

The earliest bands of human foragers carried these ideas with them around the Earth, and they still permeate common speech as, for example, when historians refer to the “spirit of an age.” Later religions made room for spirits, too, in various forms: angels, devils, saints, and ancestors to whom ordinary persons could

appeal for help in time of need, or, as the case might be, drive away by appropriate rituals. As such, animism is the longest lasting, most pervasive worldview that human beings have ever conceived. Throughout most of the past, the coming and going of spirits and the clash of their individual wills convincingly explained dreams, sleep, and death, as well as illness and trance and why human hopes and expectations were so often disappointed by experience. Experts in the supernatural sought to navigate among the spirits, driving some away, appeasing some, and keeping others close by for help in time of need. All religions of the world descend from and incorporate the notion that we are surrounded by a society of powerful spirits, affecting everything that happens.

Yet curious persons could never refrain from trying to fill in the gap between invisible supernatural powers, variously defined by local religion and folk practice, and whatever it was that actually occurred. As long as historical changes remained so gradual as to be imperceptible, it was possible to believe that everyday surprises and disappointments remained fundamentally the same across time. In such societies, belief in the overriding power of gods and spirits remained thoroughly persuasive. But when new forms of government, new economic activities, and new information about distant peoples and places upset old customs and expectations, new-sprung prophets, philosophers, and historians came into their own by investigating more closely the world of people and things and its relationship with supernatural powers. This was the context within which the Buddha (Siddhartha Gautama), the Hebrew prophets, and Chinese and Greek philosophers, as well as Herodotus and Sima Qian did their work.

Greek and Roman Influences

Among the Chinese, the idea of a dynastic cycle, supervised by a vaguely personified heaven, remained central and seldom challenged. Greek historical ideas were more volatile. Some, like the poet Hesiod (c. 700 BCE), held that all changes were for the worse, declining from an age of gold, to silver, bronze and



then of iron, amidst which the poet found himself. Yet the story of how Prometheus stole fire from the gods, and empowered humankind by that gift, implied the opposite idea that humans had in fact accumulated skills, knowledge, and power across time.

Nor did Herodotus's ideas seem adequate to historians after him. Thucydides (c. 460–404 BCE), for example, refrained from even mentioning the gods, and explained the course of the Peloponnesian war by emphasizing deliberate public decisions, influenced by the personal character of individual leaders. Yet he also recognized more general processes at work: how Athens' tyranny over other cities provoked eventual defeat; how the hardships of war disrupted commonality among fellow citizens, provoking civil strife, and how pursuit of honor gave way to greed. Later Greek historians, most notably Polybius (c. 200–118 BCE), elaborated the idea that a natural cycle existed whereby political power passed from monarchy to aristocracy and then degenerated into democracy. Polybius argued that the rise of Roman power—his principal subject—was due to Rome's mixed constitution, balancing monarchical, aristocratic, and democratic elements.

Almost two centuries before Polybius wrote about Rome, the conquests of Alexander the Great (Alexander of Macedon, 356–323 BCE) conquests brought Greeks into far closer touch with Egypt and western Asia than before. Accordingly, Hellenistic scholars set out to link the Greek past with that of Egypt and western Asia by constructing parallel chronologies. About 200 BCE, an Egyptian priest, Manetho, organized Egyptian history into thirty dynasties that are still used; and at almost the same time, a Babylonian priest, Berosus, summarized Mesopotamian history—before and after the Flood—down through Persian times. Both wrote in Greek, perhaps at the command of the new Macedonian rulers; and simultaneously Eratosthenes of Cyrenaica, (c. 276–194 BCE), most famous for his accurate geometrical measurement of the circumference of the Earth, arranged Greek history around quadrennial Olympiads dating back to 776 BCE.

All too obviously, history was expanding geographically and chronologically, and persuasive ideas

to explain all the surprising things that kept on happening were in short supply. In Roman times, the idea that unvarying natural law, as conceived by Stoic philosophers, ruled the universe had to compete with the notion that Fortune, conceived as a whimsical goddess, favored some and destroyed others for no reason at all. The leading Roman historians emphasized individual moral character, and both Livy (59 BCE–19 CE) and Tacitus (56–120 CE) regretted the end of republican liberty, arguing that moral decay was what had led to civil war and imperial government in their lifetimes.

Advent of Judaism, Christianity, and Islam

Judaism, Christianity, and Islam superseded discrepant pagan ideas about history by recognizing God's almighty will, operating always and everywhere. Jews, Christians, and Muslims agreed that the main lines of the world's history were revealed in sacred scripture. History began with creation, and centered not on war and politics, as pagan historians had assumed, but on how God had revealed his will to humankind, and on the always-imperfect efforts people made to obey and observe his instructions. Holy Scriptures also predicted that the world was destined to end suddenly with a Day of Judgment, when God would reward and punish the living and the dead, sending everyone eternally to heaven or to hell.

However convincing this overall pattern of history might be, short-term surprises remained as puzzling as before. But for many centuries the authority of sacred scriptures, and of codified interpretations placed upon them by religious experts, remained authoritative. Correspondingly, historical writing became intellectually impoverished since miracles abounded, and easy invocation of God's will explained everything. To be sure, pagan classical writers were never entirely forgotten, and writers like Eusebius (flourished 313–337 CE) and Orosius (flourished c. 414 CE) made rather hasty efforts to fit a few highlights from the pagan political past into the biblical narrative. New habits of citing and quoting sources make even

Not all that is presented to us as history has really happened; and what really happened did not actually happen the way it is presented to us; moreover, what really happened is only a small part of all that happened. Everything in history remains uncertain, the largest events as well as the smallest occurrence. • **Goethe (1749–1832)**

the most credulous Muslim and Christian chronicles of interest to modern scholars; and the universal framework of sacred history—from Creation to the Day of Judgment—made it easy to introduce new peoples, states, and regions into the historical domain as they became known to Christians and Muslims. More important, the universal character of God’s power invited believers to construct all-embracing chronologies, beginning with Creation for Jews, with the birth of Christ for Christians, and with Muhammad’s flight to Medina for Muslims. Despite the awkwardness of running numbers backward before the Christian and Muslim eras, these chronologies remain in use today, though most historians now substitute the religiously neutral label “Common Era” when using the Christian scheme for dating events.

After 1000 CE, trade intensified and information about distant places and peoples expanded across the Old World, and inherited religious explanations began to demand more detailed analysis. How did Heaven or God—or any other sort of ultimate power—use intermediate causes to direct human history? How indeed? Both Byzantine and Italian scholars looked afresh at ancient texts for helpful hints, but most were satisfied with rather superficial rhetorical borrowings from pagan writers. To explain the rise and fall of Cesare Borgia, for example, Niccolò Machiavelli (1469–1527) fell back on the goddess of Fortune without really believing in her existence.

In North Africa, however, the Muslim Ibn Khaldun (1342–1406) generalized from the political tumult of his times, arguing that superior social cohesion among nomad tribesmen allowed them to conquer urban dwellers only to see their initial cohesion weaken under urban conditions, thus making way for a new conqueror. His concept of ever-fluctuating “social cohesion,” and his recognition of systematic social change throughout Muslim society in the wake of the Black Death, which had killed both his parents, departed from anything historians had thought of before. Perhaps because they were so novel, his ideas survived very slenderly in Muslim lands, and came to European attention only after 1860.

Giambattista Vico (1688–1744) resembled Ibn Khaldun in the originality of his ideas about what made history happen. His principal book, *Scienza Nuovo* (1725) offered a speculative and evolutionary view of world history, according to which each successive age was characterized by dominant ideas and ideals, expressed in religion and poetry, and developed its own distinctive patterns of behavior. He remained devoutly Christian, but elaborated more systematically than anyone before him how Divine Providence allowed selfish and often brutal humans to change their thoughts and actions from age to age.

North of the Alps, the religious upheaval of the Reformation and Counter-Reformation dominated historical thinking from 1517 until about 1750. Protestants argued that the Roman Catholic Church had departed from authentic Christian practice as recorded in the Bible; Catholics attributed such practices to apostolic tradition, faithfully transmitted from Peter to the popes of Rome. This was an historical question, and generations of scholars argued back and forth, developing new information, new linguistic skills, and rules for correcting copyists’ errors in ancient and medieval texts—but never achieving anything like agreement. After 1499, the Muslim world, too, split more sharply than before between Sunni and Shi’a versions of Islam; and, as in Europe, bitter controversy fortified disagreement, without enlarging historical knowledge as much as in Europe, thanks largely to pious restrictions on resort to printing.

Eighteenth and Nineteenth Century

Beginning about 1750 more and more Europeans tired of religious controversy and the warfare it provoked. Secular, anticlerical, and sometimes consciously irreligious ideas proliferated, especially in France and England. Distinguished historical expressions of this change in the climate of opinion include Voltaire’s *Essai sur les mœurs* (1756); William Robertson’s *History of the Reign of Emperor Charles V* (1769), and Edward Gibbon’s six-volume *The History of the Decline and Fall of the Roman Empire* (1776–1788). These historians discarded prevailing notions about

the active intervention of Divine Providence in human affairs, believing that God, if he existed, had created the world as a self-regulating machine, leaving full responsibility for what happened in history to human beings. Voltaire expanded the scope of history to embrace everyday customs around the world including distant China—whose civil polity he admired because it did without priests and revealed religion. Robertson dealt with the storms of the Reformation era without clearly taking sides. And Gibbon's history traced the triumph of "barbarism and religion," that is, of Christianity and Islam, which, he argued, eventually brought the Roman Empire to an end in 1453.

European historical ideas took new forms with the rise of nationalism, accelerated by the French Revolution and the Napoleonic wars that followed. Many Germans, reacting against French political and cultural primacy, accepted the idea that a distinct national spirit inhered in their own and every other language. Johann Gottfried von Herder (1744–1803) was an influential advocate of this idea, and when medieval and modern history became a regular subject for lecturing and research in German universities after 1815, academic history took off as never before. As the study of history spread to universities in other countries, written histories quickly assumed distinct and diverse national forms. Ideas about what guided history multiplied correspondingly.

Three more or less distinct schools can perhaps be distinguished. One was conservative, idealist, and Christian, believing that each nation had its own proper place in God's plans for humankind, and therefore inherited institutions and practices that appropriately expressed the spirit and destiny of each people and state. A second was liberal, progressive, and somewhat less sure of being able to discern God's hand in history. For the English-speaking world, Lord Acton (1834–1902) more than anyone else defined this view through a history of liberty he projected but never actually wrote, and more concretely by planning a collaborative multivolume *Cambridge Modern History*, embodying the liberal view, that was published soon after his death. Both conservatives and liberals were challenged after 1848 by socialist, materialist, and godless Marxism. Yet Karl Marx (1818–1883), in

rejecting the Christian version of history, reproduced its principal features, claiming that private property had supplanted primitive communism (equivalent to leaving the Garden of Eden), but changes in the pattern of class warfare that had followed were destined to come to a speedy end when the proletariat, created by modern industry, would take power and restore justice, equality and communism by accepting the principle, "From each according to his ability, to each according to his need."

The conservative tradition emphasized national, political history and the rise of an international balance of power, adjusted from time to time by war and diplomacy. Liberals emphasized the progress of constitutional freedom across the centuries and congratulated themselves on its approach to perfection in their own time. Socialists emphasized economic history, class conflict, and the international solidarity of the working class. All agreed that human beings made their own history, but since individual and collective wills clashed perpetually, results were never exactly what anyone hoped or intended.

Twentieth Century and Beyond

World Wars I and II tended to discredit all three historical traditions. Balance-of-power politics enhancing national rivalries and provoking such destructive violence were not truly conservative, resulting in revolution instead. Freedom to fight and die in the trenches was not an acceptable climax to the advance of constitutional liberty either. And the international solidarity of the proletariat was everywhere betrayed in 1914, even though Communist revolution in Russia created a rival social and political order challenging other states after 1917; after World War II China and several other countries also became Communist as well.

Historians were rather slow to adjust their ideas to these upheavals. It was easier to persist in conservative, liberal, and socialist modes of thought and not ask large questions about overall patterns and universal causes. In Communist countries, official policy enforced ideological conformity and history soon became mere apologetics for the government of the day. Elsewhere, new themes multiplied, study



of new peoples penetrated academic history departments, especially in the United States, and increasingly minute specialization prevailed.

Resulting multiplicity makes it hard to pick out important new ideas about the course of history and the factors that affect it. Rapid globalization since 1950 pushed towards taking world history more seriously than before. New awareness of ecology and the radical impact of recent human activity on other forms of life raised new questions about the human past. The extraordinary multiplication of human numbers drew attention to demography as a fundamental variable as well. More generally, recognition that we are inescapably part of much larger evolutionary processes—cosmological, terrestrial, biological, and human—invited a recasting of history to take account of processes of which humans were previously unaware, yet which influenced or even controlled what they were able to do. Histories limited to criticizing and correcting surviving written records about what people said and did had kept historians busy in the nineteenth century. That no longer seemed in the least adequate to describe what really happened. But how to disentangle the enormous complexity of disparate processes within which we exist remains an open question. Very likely, human intelligence and our use of language will never be able to find answers that satisfy everyone.

Still within the past half century, historians have come to understand far more than before about human origins and what used to be called prehistory, thanks to archeological discoveries, anthropological studies of surviving bands of foragers, and observation of bands of chimpanzees and our other close relatives. Similarly, advances in epidemiology allowed historians to understand far more about how disease organisms and human populations have interacted across time. Energy flows sustaining human activity offer a promising way to construct quantitative estimates of our quite extraordinary success in enlarging our ecological niche at the expense of other species. Moreover, human webs of communication, permitting more extensive and efficacious cooperation across time, seem responsible for the collective

learning and the accumulation of skills that produced this amazing result.

In general, by assimilating history to sister sciences, or more exactly by making all the sciences historical, we can hope for an improved understanding of ourselves and everything around us. For it is now apparent that all the sciences evolve across time, and the physical, chemical, geological and biological processes they study are likewise time sensitive. Change pervades the universe. Human changeability is unusually rapid and, at least on a terrestrial scale, is unusually significant as well, since we are and have long been capable of upsetting all the life-forms around us, thanks to actions coordinated by language and more recently by mathematical symbols and digitalized signals as well.

A few historians have begun to attempt this bold synthesis. Among them, David Christian with *Maps of Time* (2004), is the most notable. But the task is just begun, and who knows what may follow? Human history is always surprising and sure to remain so. Authoritative religions may again simplify the task of making sense of what happens. Sudden collapse of existing high-tech urban societies cannot be ruled out. Human survival itself is problematic. Or we may learn enough to navigate the future for a long time to come just as successfully, and as precariously, as our predecessors did. Time, as always, will tell. And all the while, historians' ideas will continue to reflect changing conditions within the societies they live in.

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See also Animism; Biological Exchanges; Columbian Exchange; Communism and Socialism; Diseases—Overview; Globalization, Historical Perspectives; Industrial Revolution; Long Cycles; Religion and War; Secondary-Products Revolution; Technology—Overview; Trading Cycles

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Enlightenment, The

The Enlightenment, a philosophical movement in eighteenth-century Europe, rejected traditional social, religious, and political ideas and adopted rational thinking as a way to develop new theories accounting for human behavior and feelings. These new explanations were then applied to the social and political spheres, changing the way people viewed and thought about government, and directly influencing the development of the modern world.

The Enlightenment designates a period of European intellectual history from the late seventeenth to the late eighteenth century that brought together ideas in moral and natural philosophy and shifted inquiry away from metaphysics and the supernatural toward a focus upon physical and human nature. More significantly, the Enlightenment represented the adoption of a critical attitude toward inherited cultural and intellectual traditions. The forty-volume *L'Encyclopédie* (1751–1772), compiled by the important Enlightenment thinkers Denis Diderot (1713–1784) and Jean Le Rond d'Alembert (1717–1783), idealized the Enlightenment thinker, or *philosophe*, as one who “tramp[le] on prejudice, tradition, universal consent, authority, in a word, all that enslaves most minds,” and “dares to think for himself” (Diderot 1751, 5:270). A generation later, the German thinker Immanuel Kant (1724–1804) defined the Enlightenment as a process of freeing oneself from what he called “self-incurred tutelage,” and he wrote that the motto of the Enlightenment ought to be “*Sapere aude!* ‘Have courage to use your own reason!’” (1988, 462).

Expanding the Intellectual Sphere

The Enlightenment took advantage of new forms of intellectual exchange. Enlightenment thinkers like David Hume (1711–1776) railed against the exclusivity of earlier generations and insisted on bringing knowledge out of the pedantic world of the closeted learned to the sociable world of polite conversation in academies, debating societies, salons, and coffeehouses. Along with the expansion of the sphere of oral communication went a similar expansion of readership and print culture. In this period books became smaller, cheaper, and therefore more accessible. This time witnessed the birth of the periodical press, of newspapers and magazines. Changes in print production went along with changes in how readers related to print. Gone were the days of laborious reading; instead expanding literacy, particularly among middle-class men, meant that expanding audiences read pamphlets, essays, novels, and newspapers in their leisure time.

Physical and Human Nature

The sixteenth and seventeenth centuries saw European thinkers challenge inherited ideas about the physical universe. Medieval thinkers had built elaborate cosmological systems upon classical, and particularly Aristotelian, foundations. But in many fields, such as physics, applied mathematics, and especially astronomy, new discoveries and explanations put forward by Nicolaus Copernicus (1473–1543), Galileo Galilei (1564–1642), and Sir Isaac Newton (1642–1727), among others, challenged the picture

Education is a progressive discovery of our own ignorance. • John Dryden (1631–1700)

of a finite, Earth-centered universe and replaced it with a potentially infinite universe and a sun-centered system. Explanations of the physical universe thus increasingly presented it as analogous to a mechanism, governed by rational, mathematically expressible rules, which a divine power may have created but with which it did not need to interfere.

This shift to mechanistic explanations was also apparent in moral philosophy. Seventeenth-century thinkers like William Harvey (1578–1657), Thomas Hobbes (1588–1679), René Descartes (1596–1650), and John Locke (1632–1704) developed new medical and psychological theories to account for human movement, behavior, feeling, and thinking as governed by mechanical principles. The *philosophes* then developed economic, social, and political theories that challenged the belief in a divinely instituted and intuitively recognizable order. Enlightenment thinkers viewed human nature in terms of a morally neutral *tabula rasa*, or blank slate, that could be molded in various ways. They applied the idea of a social *tabula rasa*, or *state of nature*, to explain how civil society might have emerged and ought to be governed. Many Enlightenment thinkers, such as Hobbes, the Marquis d'Argenson (1694–1757), Montesquieu (1689–1755), and Jean-Jacques Rousseau (1712–1778), argued that political stability could be guaranteed by organizing society as a machine in which each component worked in harmony with the rest. Still others, like Locke in his *The Second Treatise of Government* (1689), used the idea of a state of nature to define the boundaries of state power in guaranteeing political stability.

Progress and Utility

During the seventeenth century, European intellectuals quarreled over whether contemporary “modern” European thinkers had surpassed their “ancient” Greek and Roman counterparts, and this debate gave rise to the Enlightenment belief that better ways of thinking and behaving had emerged in recent decades. The sense of modern improvements led to a faith among the *philosophes* that the new ideas and methods would guarantee indefinite progress in politics, society,

and the arts and sciences. The *philosophes* took up the cause of improving their social and natural surroundings through experiment and reform. Societies and academies, such as the English Royal Society, emerged in which innovative ideas and techniques were presented, debated, and recommended. From agricultural techniques to zoological taxonomies, progressive reform was an important Enlightenment ideal associated with another Enlightenment principle: utility. Hume (1902, 183) wrote that “public utility is the sole origin of justice.” In their emphasis upon principles of progress and utility, most Enlightenment thinkers were the heirs to the “moderns” in the quarrel of the ancients and moderns.

Religion and Politics

But the Enlightenment cannot be equated easily with the rise of modernity if we understand modernity to mean atheism and democracy. As often happens with any movement critical of established institutions or ideas, definitions of the Enlightenment have been constructed as much by its enemies as by the *philosophes* themselves. An appreciation of the Enlightenment must therefore go beyond commonplace definitions that tend to see it as simply challenging the authority of church and state, of Christianity and absolute monarchy. Indeed, with few exceptions, Enlightenment thinkers were defenders of both.

The Enlightenment's religious outlook was built partly upon the ideas of certain dissenting Protestant sects, such as Socinians (who denied the divinity of Christ, and consequently the Trinity) and Arians (who believed that the Son was not of the same substance as the father), and also partly upon the skeptical and humanistic traditions within Roman Catholicism. In fact, the very term *enlightenment* had already been used by Christians to designate divine inspiration. But many Enlightenment thinkers reacted to what they criticized as the “enthusiasm” of religious dogmatists and the “fanaticism” of religious wars, such as the French Wars of Religion (1559–1598), the English Civil Wars (1638–1660) or the Thirty Years War (1618–1648). They emphasized the need rationally to



Hume wanted to expand knowledge of the pedantic world into the sociable world of polite conversation in academies, debating societies, salons, and coffeehouses. New York Public Library.

reexamine the foundations of beliefs. These individuals insisted that religion ought to agree with reason and that any belief not derived from observation of the world or from human reason ought to be rejected. These thoughts encouraged the tolerance and rationalism that gave rise to the ideas of deists like Voltaire (1694–1778), who argued for a pared-down, “reasonable” Christianity emptied of its dogma and ritual, as well as those of atheists like Hume and the Baron d’Holbach (1723–1789).

The Enlightenment’s political outlook similarly mixed continuity with the past and a critical perspective on traditions. Although their enemies often accused the *philosophes* of corroding political order and the established monarchy, most *philosophes* actually favored monarchy. George III in Great Britain, Louis XV and Louis XVI in France, Frederick the Great in Prussia, Joseph II in Austria, and Catherine the Great in Russia all gave support to and were supported by Enlightenment thinkers. Influenced by the Enlightenment principle of maximizing utility, these monarchs tried to institute reforms in their kingdoms. Thus Enlightenment thinkers like Voltaire actually

advocated a form of “enlightened despotism,” or the rule of a single sovereign with absolute power to reform society. Two things that Enlightenment political *philosophes* tended to oppose were what they called “Oriental despotism,” the kind of arbitrary rule they associated with Islamic states, and the customary privileges enjoyed by certain groups, like aristocrats and guilds, which they saw as inefficient and inequitable.

The Enlightenment and the Wider World

Although the Enlightenment was almost exclusively a European phenomenon, the wider world played a key role in the development of Enlightenment thought. Descriptions of previously unknown species of animals discovered in distant lands led natural historians, such as Carolus Linnaeus (1707–1778), to develop new taxonomical systems that could effectively organize the growing mass of information regarding plants and animals. Discoveries of fossilized plants and animals also led many to abandon the practice of interpreting scriptural accounts of the world’s creation literally. Instead *philosophes* like Georges-Louis Leclerc de Buffon (1707–1788) argued that the Earth was formed and transformed at extremely slow evolutionary rates and as the result of natural occurrences such as volcanic activity and tides.

European encounters with non-Europeans and their languages, religions, and political practices also stimulated Enlightenment thinkers in many ways. Philologists such as Sir William Jones (1746–1794), who recognized the affinities between Persian and European languages, set the stage for nineteenth-century comparative grammarians. Jesuit missionaries in China, impressed with the virtue of the people they encountered, emphasized parallels between Christian and Confucian beliefs, and many Enlightenment thinkers, such as Matthew Tindal (1653–1733) and Gottfried Wilhelm Leibniz (1646–1716), pointed to China in arguing against the need for revelation, and for the idea that the tenets of natural religion were apparent to all reasonable and



observant people. The Scottish thinker Henry Home (1696–1782), noting the radical physical differences between peoples around the world, argued for the polygenetic origins of human races, an argument that contradicted scriptural accounts.

The tendency of Enlightenment thinkers increasingly to compare their own society to those of recently discovered and distant peoples challenged traditional notions in many other ways. Locke, for example, in his *Second Treatise on Government* (1690), noted that “in the beginning, all the world was America” (Locke 1993, 285). Though very few had traveled outside Europe, Enlightenment thinkers frequently used descriptions of distant cultures to comment on their own countries. One of the commonplaces of the Enlightenment was the image of the American Indian, and later of the Pacific Islander, as existing in a state of nature without literature, religion, laws, or political and social distinctions. The French aristocrat Louis Armand de Lahontan (1666–1716), for example, popularized the figure of the American Indian as living in this enviable state through the publication of fictional dialogues between a Huron and himself. In these dialogues, the Huron gets the better of his European interlocutor on such subjects as marriage, religion, and jurisprudence. Lahontan’s work was discussed by important European thinkers such as Leibniz and influenced ideas of natural law and natural religion. Lahontan’s *A Conference or Dialogue between the Author and Adario, a Noted Man among the Savages* (1703), and other works like Montesquieu’s *Persian Letters* (1721), Voltaire’s *Ingenuous* (1767), and Oliver Goldsmith’s (1730–1774) *Citizen of the World* (1762), popularized the Enlightenment genre of the imaginary traveler from a distant land who comments critically upon European customs. Indeed, this was one of the most important vehicles through which European audiences imagined non-Europeans and criticized customs within their own society.

The Enlightenment’s encounter with non-Western societies also promoted the rise of what we now call the social sciences. Sociology, ethnography, anthropology, psychology, economics, political economy,

and even literary criticism all grew out of the Enlightenment. Enlightenment historians studied how each human society followed a definite and, for most *philosophes*, progressive development from a hypothetical state of nature to civilization. This “conjectural history” implied definite hierarchies of cultures, and the Enlightenment was an important period in the development of cultural particularism, which fed into the nationalist and racist ideologies of the nineteenth century.

But since the Enlightenment thinkers saw differences between peoples as cultural, historical, or environmental rather than racial, they tended to see human nature and dignity as shared in common among all peoples. This view played a large role in the development of Enlightenment cosmopolitanism, the idea that the *philosophe* is a citizen of the world more than of any nation-state with its accidental traditions. Another important implication of this emphasis on a shared human nature was that many Enlightenment thinkers, such as Diderot and the Abbé Raynal (1713–1796), condemned slavery as an immoral and inhumane practice and played a role in the development of the abolitionist sentiment.

Enlightenment and Modern Political Revolutions

One of the perennial questions surrounding the Enlightenment is the extent of its influence, particularly on the political and social revolutions in Europe and in European colonies in the Americas. As noted above, most Enlightenment thinkers did not advocate either political revolution or republicanism. In fact, in some ways, the very concept of the Enlightenment as a coherent movement, critical of established political institutions and ideas, was created as much by revolutionaries seeking retrospectively to justify their actions intellectually as by the ideas of the *philosophes* themselves or the assertions of their enemies. There can be no question, however, that certain American revolutionaries, like Thomas Jefferson (1743–1826) and Thomas Paine (1737–1809), were influenced by Enlightenment ideas and that Rousseau in particular

had a tremendous impact on the course of the French Revolution. Simón Bolívar (1783–1830), the “liberator” of South America, learned from his tutor about Rousseau and Voltaire, and while traveling in Europe he absorbed Enlightenment ideas from such thinkers as Alexander von Humboldt (1769–1859). The idea of a written constitution, of freedom from arbitrary and unjust customs, of equality before the law, and, to some extent, of checks and balances within government were all concepts advanced by Enlightenment thinkers. In these ways, as well as others, many of which are noted above, the Enlightenment contributed much to the emergence of the modern world.

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See also Darwin, Charles; Descartes, René; Mathematics; Science—Overview; Scientific Revolution

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Environmental Movements

Although the term *environmentalism* was not used until much later, the roots of environmental movements date back to the 1800s, when demands for cleaner water and air and the protection of wilderness became common. Industrialization and colonialism sparked the first environmentalist voices. Though goals and intentions of the countless organizations vary, environmental movements as a whole remain an important aspect of modern society.

Environmental, or green, movements appeared around the globe during the second half of the twentieth century as people agitated in reaction to local problems, affected the policies and organization of national governments (including the origin of environmental departments in almost every nation), and helped to create national and international laws, international bodies, and important treaties. Few other popular movements spread so far, had such complex ramifications, and lasted so long with the promise of continuing influence.

To present green or environmental movements as a recent phenomenon, arising during the years after World War II, however, would be misleading. They had their roots in the conservation movement that began a century earlier. Many voices had demanded clean water and air, parks and open space, the humane treatment of animals and the protection of bird species, the preservation of wilderness, and the provision of outdoor recreation. Communities in many places began to see their welfare as being connected with the health of their land, their forests, their waters, and their clean air. Although people did not yet use the term *environmentalism*, the actions of people

to protect their valued habitats, to protest against developments that threatened to destroy them, and to search for ways to live in harmony with nature constituted an effort that has come to be known by that term.

People voiced those concerns during the late eighteenth and the nineteenth centuries when the Industrial Revolution was polluting and otherwise harming the landscape of the Western world, and colonialism was making depredations on the natural resources of the rest of the world. For example, deforestation altered small islands in the Atlantic and Indian Oceans so rapidly that European scientists who were sent out by the colonial powers noted exhaustion of timber and desiccation of climates and called for restorative action. Pierre Poivre, a French botanist, warned in 1763 that the removal of forests would cause loss of rainfall and recommended the reforestation of island colonies. Both France and Britain soon established forest reserves in their colonies, including British India. Unfortunately reserves often meant that local people were excluded from their own forests, and this exclusion produced outbreaks of resistance during the 1800s. Some European environmentalists raised their voices loudly against mistreatment of indigenous peoples. A few of these environmentalists were feminists, and some, such as the surgeon Edward Green Balfour, were willing to alarm their superiors with advocacy of not only conservation, but also anticolonialism.

The rapid sweep of resource exploitation across the North American continent aroused a few opposing voices. The artist George Catlin in 1832 advocated that a section of the Great Plains be set aside as a national park to preserve bison herds and their native

American Indian hunters. Writers William Wordsworth in England and Henry David Thoreau in the United States maintained that the authentic human self can best be realized in contact with wild nature. The Scottish-American writer John Muir became an advocate for wilderness and found many people agreeing with him. The first national park, Yellowstone, was designated in the United States in 1872, starting a movement to reserve natural areas that spread around the world. Australia declared a national park outside Sydney in 1879; Canada established Banff National Park in 1885; and South Africa in 1898 set aside an area that later became Kruger National Park. Eventually more than 110 countries established 1,200 national parks.

Through the public relations provided by many writers, including Muir, the conservation movement grew rapidly and produced many organizations. Muir's group, the Sierra Club, backed nature preservation of many kinds, successfully urging the creation of national parks and providing opportunities for its members to hike and camp in them. The Audubon Society followed in 1905, gaining protection for birds and including women leaders who convinced their peers that it was better fashion not to wear feathers in their hats. Stephen Tyng Mather, first director of the U.S. National Park Service, organized the National Parks Association in 1919 to provide support for the work of his agency. Groups appeared internationally; the World Wildlife Fund supported projects to preserve wildlife and wildlife habitats in many nations.

Voices for Sustainable Use

Not all conservationists argued for keeping natural areas in a pristine state. Some, often connected with governments, pointed out the importance of keeping reserves, especially forests, as a continuing source for needed resources such as timber. France established the Administration of Water and Forests as early as 1801, and Prussia established the Forest Service not long afterward. In 1864 the U.S. ambassador to Italy, George Perkins Marsh, published *Man and Nature*, a book warning that human-caused destruction

of forests, soils, and other resources threatened to impoverish societies everywhere. Marsh maintained that many of the changes that humans make in the natural environment, whether accompanied by good intentions or by disregard of the consequences, damage the environment's usefulness to humans. His influence was felt in the United States, Europe, and beyond, and helped to inform the movement for conservation of natural resources. In the United States that movement was exemplified by the founding of the American Forestry Association in 1875. Gifford Pinchot, who became the first chief of the U.S. Forest Service in 1905 under President Theodore Roosevelt (himself a conservationist), was a leading advocate of sustainable forest management. Pinchot had been informed by his study in French schools of forestry and by the work of Dietrich Brandis and the Forest Department in British India.

Conservationism during the early twentieth century was largely the work of committed individuals, energetic but relatively small organizations, and government land-management agencies in several countries. It was concerned with the preservation of forests, soils, water, wildlife, and outstanding natural places and the prevention of pollution in local areas, particularly in urban centers. During the years after World War II, however, more ominous and more widespread environmental problems forced themselves on the notice of people around the world to such an extent that the problems represented an environmental crisis. These problems could rarely be solved by local efforts alone: the spread of fallout from nuclear weapons testing and from accidents in nuclear power facilities, air pollution that crossed national frontiers and caused acid precipitation, persistent pesticides that lost their effectiveness even as they were applied ever more widely (and were detected in the fat of Antarctic penguins), supposedly inert chemicals that proved to attack the ozone layer, and greenhouse gases generated by countless human activities that apparently raise the temperature of the Earth. In the face of these problems, and the wider public awareness that they aroused, the conservation movement was transformed into environmental movements. The constitution of



Wildebeest graze in the Masai Mara, a wildlife refuge set aside in Kenya.

the first environmental organization under United Nations auspices, the International Union for the Protection of Nature, in 1949 defined its purpose as the preservation of the entire world biotic community. This organization became the International Union for the Conservation of Nature and Natural Resources (IUCN) in 1956.

The Emergence of Environmentalism

Environmentalism as a popular social movement emerged during the 1960s. It is often said to have begun in response to the American biologist Rachel Carson's 1962 book *Silent Spring*, which warned of the dangers of persistent pesticides such as DDT. That book dealt with only one environmental issue but found a wider international readership than any previous book on an environmental subject. Environmentalism was expressed in the first Earth Day (22 April 1970), an event primarily in the United States, although it later received international observance. By 2000 the membership of environmental organizations reached 14 million in the United States, 5

million in Britain and Germany, and 1 million in the Netherlands.

The first major international conference devoted to environmental issues was held in 1972: the United Nations Conference on the Human Environment in Stockholm, Sweden. This conference included representatives of 113 nations, 19 intergovernmental agencies, and 134 nongovernmental organizations. It marked a new awareness among nations that many environmental problems are worldwide in scope. Representatives of industrialized and developing countries attended and discussed the issues that divided those two groups. Unlike its successor conference in Rio de Janeiro in 1992, the conference in Stockholm in 1972 was not an "Earth summit." The only heads of state present were the host, Sweden's Prime Minister Olaf Palme, and Indira Gandhi of India, who served as an articulate spokesperson for views shared by developing countries. Some representatives of developing nations noted that environmentalist views were most vocal in the industrialized world—in the very nations that had reached their economic pinnacles by using natural resources from around the Earth and



A sign outside Invesco Field at Mile High in Denver (Democratic National Convention 2008), uses familiar slogans and logos to advocate recycling.

producing the major proportion of the planet's pollution. Would measures for conservation of resources and reduction of pollution limit the development of poorer countries while leaving the richer countries in relative affluence? Gandhi maintained that poverty and need are the greatest polluters and that the basic conflict is not between conservation and development but rather between environment and the reckless exploitation of humankind and nature in the name of economic expansion. She insisted that discussion of environmental problems be linked to issues posed by human needs. The Stockholm conference authorized the creation of the United Nations Environment Programme, headquartered in Nairobi, Kenya, which was given the responsibility of coordinating United Nations efforts on the environment worldwide. For example, the United Nations Environment Programme took a role in facilitating negotiation of

the 1987 Montreal Protocol for the protection of the Earth's ozone layer.

Environmental movements won legislative victories in a number of nations, creating laws to curb air and water pollution and to protect wilderness and endangered species. Most nations established governmental environmental agencies. In the United States the National Environmental Policy Act of 1969 required governmental agencies and businesses to subject development plans to environmental review.

Environmental political movements, which often emerged in the form of "Green" parties, appeared in Europe and elsewhere beginning during the 1970s. The German party, "Die Grünen" ("The Greens"), adopted a platform emphasizing environmental values, antinuclear activism, economic rights for workers, and participatory democracy, gaining support from groups other than environmentalists and winning



A bus in Athens carries a poster that exhorts, "The environment is our home."

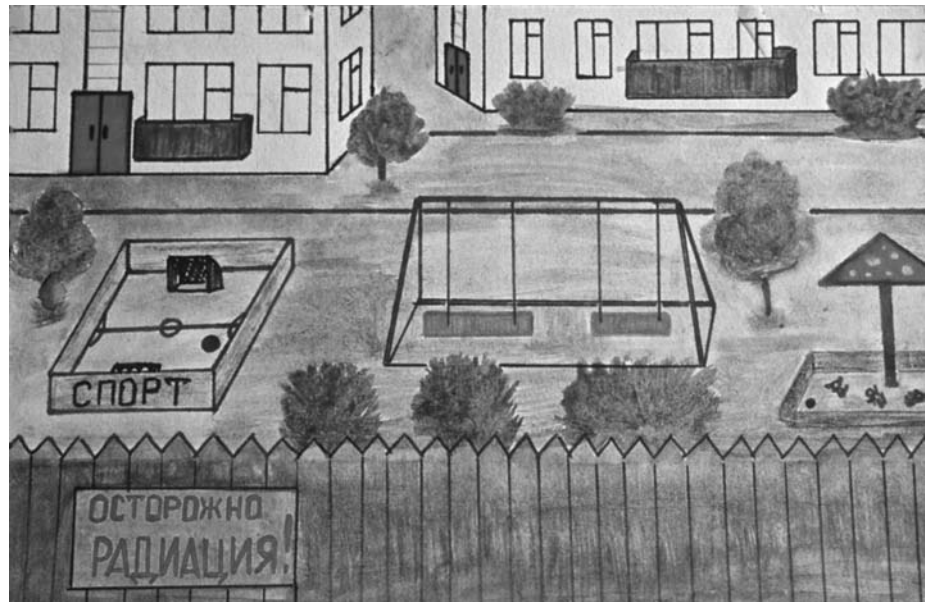
enough representation in Parliament to wield a critical margin between left and right and to participate in coalition governments. Similar parties in other European countries generally polled under 10 percent of the vote. In the United States the Green Party received national attention during the presidential election of 2000 when its candidate, the consumer advocate Ralph Nader, may have garnered enough popular votes in some states to deprive Democratic candidate Al Gore, a moderate environmentalist and the author of the book, *Earth in the Balance*, of the electoral margin he needed for victory against George W. Bush.

Movements for environmental responsibility in business, investment, and commerce gained visibility, although the results were mixed. A movement for responsible business practices was urged by economists such as Herman Daly and Paul Hawken. Their "natural capitalism" advocated consideration of the total effect of businesses and industries in terms of social and environmental justice, and the

sustainability of the resources used, not just the financial "bottom line." Many corporations adopted green measures, although it was often hard to tell whether their efforts were genuine, or simply advertising ploys intended to appeal to buyers who wanted to make good environmental decisions.

Elements of environmental movements did not content themselves with seeking reform in governmental actions or international agreements, which seemed to them to be slow and inadequate. The Environmental Justice Movement organized protests reacting to the fact that many environmental hazards, such as toxic waste dumps and polluting industries, were located in neighborhoods inhabited by the poor and racial minorities. Protesters took direct action against environmentally damaging exploits such as the clear-cutting of ancient forests. In 1993, for example, Canadian citizens blocked roads being used by logging trucks of the MacMillan Bloedel Company to carry huge old-growth trees cut from the forests surrounding Clayoquot Sound on Vancouver Island. Police

The sign in this picture of a playground, painted in 1992 by a Russian school child living in Novozybkov (near the site of the 1986 Chernobyl accident), reads: “Closed: Radiation.”



arrested 932 protesters, who were convicted and fined from \$250 to \$3,000 for defying a court injunction banning demonstrations. An eventual agreement, however, won protection for a large portion of the forests. Nonetheless, clear-cutting continued outside the protected areas by the Weyerhaeuser Company, MacMillan Blodel's successor, and was confronted by new environmental protests.

One of the most famous environmental protests was the Chipko movement, which began near Himalayan villages in north India in March 1973 when peasants stopped loggers from cutting down trees by threatening to hug (*chipko*) the trees and place their bodies in the path of the axes—civil disobedience inspired by the nonviolent methods of Indian nationalist Mohandas Gandhi. The trees were valuable to villagers for fuel, fodder, small timber, and protection against flooding. Many demonstrators were women, who are the wood gatherers there. Similar protests occurred elsewhere in India and met with some success. In Malaysia the Penan people of Sarawak carried out a series of direct actions, including blocking roads, to protest the destruction of their rainforest homeland by commercial loggers.

Those people who have demonstrated concern for the relationship of humans to nature have often suffered for that concern. Wangari Maathai, who began the Green Belt Movement in Kenya to enable the planting and caring for trees by women and children, was beaten and imprisoned. Subsequently, she received the

1994 Nobel Prize for her environmental work. The poet and playwright Ken Saro-Wiwa was executed by the dictatorship of Nigeria in 1995 for organizing a movement against oil drilling that produced air and water pollution in the lands of his Ogoni tribe without compensation. Judi Bari, a leader of the 1990 Redwood Summer protests against the logging of giant redwood trees in California, was maimed by a bomb placed under her car seat in an attempt to kill her. Chico Mendes, who organized the *seringueiros* (rubber tappers in the Amazon rainforest of Brazil) to defend the forest and their livelihood against illegal clearing, was murdered in 1988 by the agents of rich landowners whose financial interests in forest removal he threatened. The American Catholic nun, Sister Dorothy Mae Stang, a naturalized Brazilian citizen who had worked for thirty years on behalf of the rural poor and the environment of the Amazon basin, was shot to death at the order of landowners in 2005. Appropriately, she often wore a T-shirt with the motto: “The death of the forest is the end of our life.”

One of the most striking developments in the early twenty-first century is the emergence of climate change, and specifically global warming, as the most prominent issue among those on the agenda of the environmental movement. This is the result of a growing consensus among climate scientists that the average temperature of the Earth's atmosphere and oceans has risen to a level unprecedented in recent history, to a large extent due to the release



of carbon dioxide and other greenhouse gases as a result of human activities, which shows every sign of a continued increase. The consensus has been confirmed in a series of reports by the Intergovernmental Panel on Climate Change (IPCC), a large evaluative group of scientists under the auspices of the United Nations. The possible results of this increase include losses of polar and glacial ice, rising sea level and loss of coastal land, droughts and floods in some areas, increasing energy in storms including hurricanes, impacts on agriculture, and changes in range and abundance of animals and plants. The 2007 Nobel Peace Prize was awarded jointly to the IPCC and Al Gore, former vice president of the United States, for their work in disseminating knowledge about human-caused climate change and laying foundations for actions necessary to counteract it. Among the measures urged by environmental groups are restrictions on releases of carbon dioxide from sources in industry and transportation, and support for international agreements to accomplish that purpose.

Environmental movements in recent history have proved to be extraordinarily complex, including myriads of organizations, formal and informal. Their goals have been disparate, but they share the overall goal of making the Earth a better, safer, and cleaner place for its living inhabitants, human and nonhuman. Such movements have met with many successes and many failures, and their ultimate effects are still uncertain. But they are certainly among the most far-reaching and intrinsically important movements of the modern world.

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See also Climate Change; Deforestation; Desertification; Erosion; Nature; Rivers; Salinization; Timber; Waste Management; Water; Water Energy; Wind Energy

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Equiano, Olaudah

(c. 1745–1797)

AFRICAN WRITER AND ABOLITIONIST

Published in 1789, *The Interesting Narrative of the Life of Olaudah Equiano . . . Written by Himself* tells the story of an African man enslaved by the British during the mid-eighteenth century. Whether it is based strictly on Equiano's life or on others, the book spares no sense of the horror and inhumane treatment slaves suffered. Equiano fought for the abolitionist cause from 1789 until his death in 1797.

Olaudah Equiano was one of the most prominent persons of African descent involved in the late-eighteenth-century effort to abolish the British slave trade. *The Interesting Narrative of the Life of Olaudah Equiano, or Gustavus Vassa the African, Written by Himself* (1789) brought to the British public a powerfully expressed African perspective on the horrors of the Atlantic crossing and the brutality of plantation life.

Equiano described his childhood in an Igbo-speaking community (in today's eastern Nigeria) and his kidnapping and transport to the west African coast, followed by a harrowing account of the Middle Passage, the forced voyage of enslaved Africans across the Atlantic to the Americas. The use of these early passages from the *Interesting Narrative* as an historical source lately has been discounted by evidence that he may have been born in South Carolina. Whether Equiano wrote the first chapters of the book from memory, or from tales heard from other Africans, or through a combination of both, the controversy should not deflect attention from the value of the narrative as a whole.

In 1754 Equiano was purchased by a British naval officer and spent most of the next eight years on royal



This portrait of Olaudah Equiano comes from the frontispiece of his autobiography, which was first published in 1789.

naval vessels; his ship participated in the Seven Years War (1756–1763) and he gives an account of the Siege

of Louisbourg, a six-week-long battle in which the British captured the fortress on Cape Breton Island from the French. He learned to speak and read English and began to acquire the skills necessary to be promoted to the rank of “able seaman” in 1762. The status of “slave” and “free” had little meaning on a ship at war; he was therefore bitterly disappointed at war’s end when his master pocketed his pay and sold him to Robert King, a West Indian merchant. King valued Equiano’s literacy, numeracy, and seamanship, but as a Quaker he was open to appeals of conscience. He agreed that Equiano might be allowed some day to purchase his own freedom, but was shocked when in 1766 the young man produced the agreed-upon sum. Equiano had saved the money through shrewd trading on his own account while tending to his master’s business.

Because his personal safety and property were still vulnerable in the Americas, Equiano settled in London. He returned often to the West Indies and the American colonies, and his years as a free sailor included voyages to the Mediterranean and to the Arctic. At one point he signed on with an enterprise to establish a plantation on the Central American coast, even supervising slave laborers as part of his duties. As late as the 1770s he was still an “ameliorationist,” believing that both moral and economic factors argued for better treatment of slaves. He expressed pride at the productivity of the slaves under his command, and the affection he asserted they felt for him.

By the next decade abolitionism was gathering force, and Equiano, now a fervent Methodist, increasingly identified with it. He hoped to journey to Africa as part of that cause, but failed in his effort to gain an appointment with either the London Missionary Society or the African Association. His best prospect was with the Sierra Leone resettlement project, but in 1787 he was dismissed from his post after his

persistent complaints about cruelty and corruption in the enterprise. Despite his African sympathies, Equiano had by then developed a strong British identity. In 1792 he married an English woman, a marriage that brought him some property and two children.

The publication of the *Interesting Narrative* provided a major stimulus to the abolitionist movement; his subscriber list included such prominent leaders as Granville Sharp and Thomas Clarkson. From the book’s publication in 1789 until his untimely death in 1797 Equiano toured Britain and Ireland promoting his book and the abolitionist cause. Though he did not live to see his dream realized, the importance of his book to the British and global abolitionist causes was well established: nine English editions appeared during his lifetime, as well as translations into Russian, German, French, and Dutch. The *Interesting Narrative* is now firmly established in the canons of both African American and Afro-British literature.

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See also Slave Trades

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Erosion

Erosion affects crop productivity and remains the largest cause of water pollution on Earth, depositing nutrients, sediments, pesticides, and fertilizers into water supplies. There are two types of erosion: natural and human-induced. Erosion prediction and the need for soil conservation became a focus in the twentieth century under President Roosevelt's New Deal, which helped spread the word about the threats of erosion.

One of the less-appreciated constants of world history has been soil erosion, because its effects may be unnoticed before crop productivity wanes. Soil erosion causes damage in two main places: where the removal occurs and where the sediment deposits. Where the erosion occurs, it removes particles, organic matter, and important nutrients since many dissolve into water. Thus the problems of on-site soil erosion are the physical loss of the medium of plant growth, nutrient depletion, and either land abandonment or the cost of conservation and reclamation. Severe erosion has removed as much as 50 meters of soil and sediment (or more) from surfaces, creating canyons where cornfields existed a few decades before. The off-site problems of erosion are at least as severe and include water pollution, sedimentation, and property burial. Indeed, soil erosion creates the largest water pollution problem on Earth by carrying nutrients and fertilizers, sediments, and pesticides into stream channels. Sedimentation fills up channels that must be dredged, or the channel capacity decreases, which cuts down on its holding capacity and increases flooding. Sedimentation has also buried whole towns and covered many valleys with several meters of often much less fertile sediment.

History

We can view the history of soil erosion as spanning several periods. It started long before human history as geological or "natural" erosion, which is generally a slow process, but given enough time it carved mile-deep and spectacular canyons. This soil erosion occurred in several temporal modes, but it was generally slow and steady over millions of years, though it could be episodically rapid and discontinuous. A second wave started with human-induced or human-accelerated erosion, when humans became technologically advanced enough to disrupt the surface vegetation through fire and the girdling of trees. Evidence suggests that cooking fires go back over 1 million years, but evidence indicates that the use of fire to control vegetation, and thus causing erosion, clearly started as a hunter-gatherer phenomenon in the Pleistocene era (about 60,000 BCE) in what is now Tanzania.

Significant soil erosion started when humans domesticated animals and plants, removed vegetation from larger areas, and thus intensified land use. This erosion presumably began with domestication and concentrated settlement around ten thousand years ago in the Near East and later elsewhere. A third period of erosion probably started with more active trail formation, continued active removal of vegetation for settlements, and soil manipulation for seedbeds. The first actual evidence for erosion seems to lag behind the earliest evidence for agriculture. This lag is about one thousand years in Greece, where the first erosion occurred in some regions about 5000 BCE. The lag also occurred in Mesoamerica, where evidence for agricultural-induced land-use change

occurred around 3600 BCE, but the first wave of sedimentation from erosion occurred by 1400 BCE. Generally, this early erosion accelerated with the Bronze Age civilizations of Eurasia and the Early Pre-classic (before the first millennium CE) Americas as pioneer farmers ascended from the river valleys and lowlands and deforested steeper slopes in Mesopotamia, Mesoamerica, the Mediterranean, China, and the Indus Valley. Soil erosion waxed and waned in ancient cultures after this period, depending on soil conservation, climate change, and land-use intensity. In some parts of the Classic Americas (about the first millennium CE) in Mesoamerica and the Andes, soil conservation features sustained heavy soil use with high populations, though some studies argue that high soil demands and insufficient conservation figured in declines and collapses. The evidence for the Mediterranean is variable; there is some evidence for soil stability and some for erosion and sedimentation during the highly populated and intensely managed Hellenistic and Roman periods.

A fourth period of world soil erosion occurred with the vast breaking up of new lands around the world that resulted from colonial settlement during the sixteenth to the twentieth centuries. For the first time in history, large areas of previously uncultivated land fell under the plow in the Americas, Oceania, Siberia, Asia, and Africa. Moreover, farmers used to the relatively mild climates and low slopes of western Europe began to farm areas on steeper slopes with much more intensive precipitation or drier and more wind-erosion-prone conditions. These farmers were pioneers who came with little knowledge about their environments and ignored what conservation indigenous people had practiced. This ignorance led to devastating rates of soil erosion and lost land productivity.

The final period of world soil erosion came after World War II, with the expansion of mechanization and population growth fueled by better food and medicine. What once had been remote or marginal lands, such as steppes and tropical forests, became farmable due to the imperatives of high populations and the growing markets for tropical crops like coffee and bananas. Expanding populations and a variety

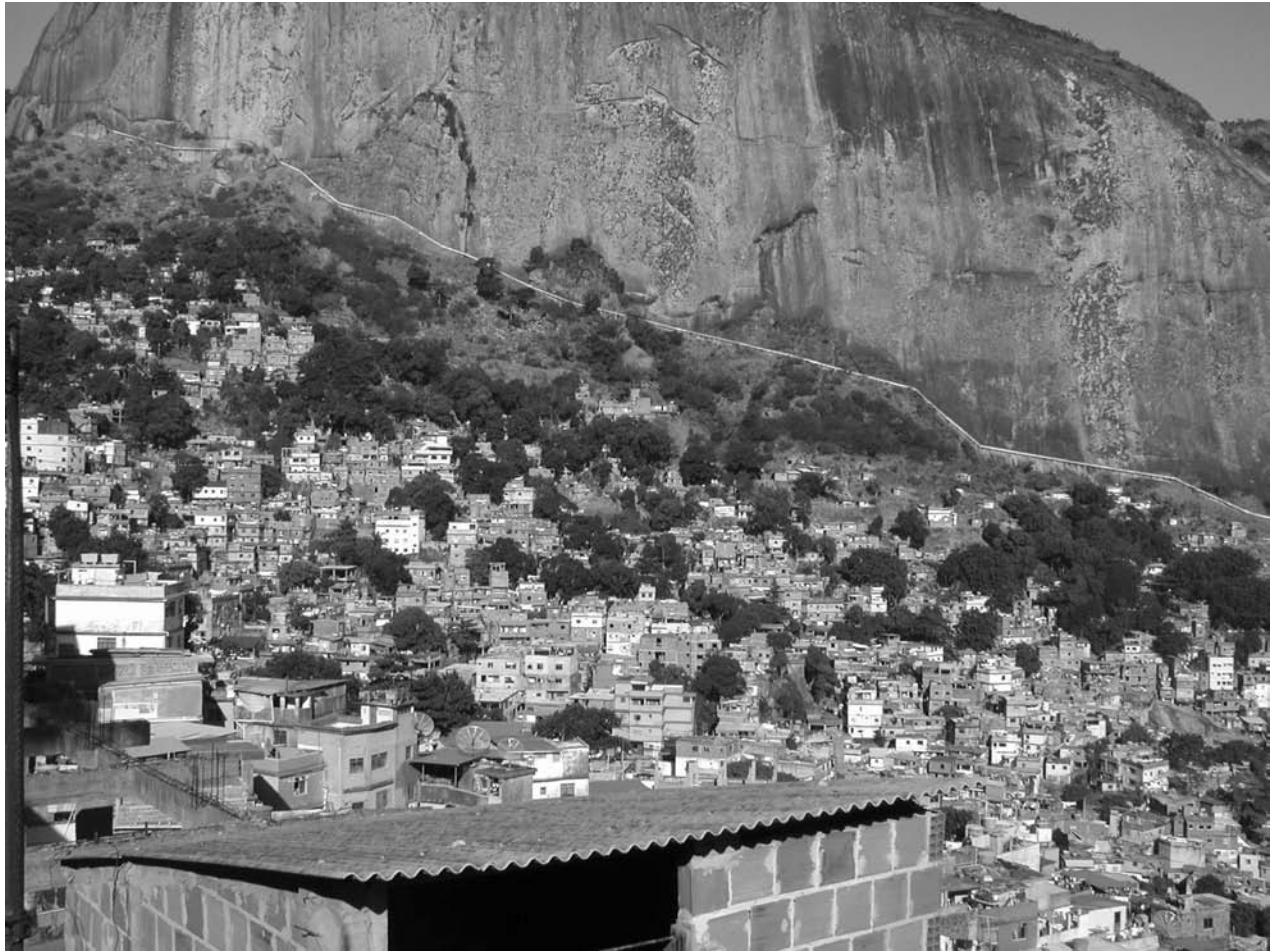
of displacement processes drove farmers into lands extremely susceptible to erosion, such as that in the mountains of Central and South America, Africa, and south and east Asia. The mechanics of soil erosion alone explain why recent agricultural and wood-cutting expansion upslope into hills of Haiti, Rwanda, Madagascar, and Nepal have made human-induced soil erosion the largest agent of geomorphic change on the Earth today.

Unfortunately, even recently in the United States, with its large conservation efforts and scientific capability, almost one-third of its agricultural lands are eroding significantly faster than soil is forming. Despite this, American land continues to maintain its productivity, but at the cost of several immediate and long-term problems: sedimentation (the largest water pollutant) and its ecological impact; cost of fertilizer; and more fuel use.

Soil Erosion Processes

We cannot understand the history of soil erosion without recognizing the processes of soil erosion. Soil erosion is the movement of soil particles by wind and water moving in flows, streams, and waves. Geomorphology is the science that studies the processes and forms of the Earth's surface. Other geomorphic agents also sculpt the Earth's surface over time, including glaciers, chemical dissolution, mass movements or landslides, and of course tectonic and volcanic activities. For the most part, humans speed up Earth surface dissection in some places and sedimentation in others, playing their part in such processes as landslides, sinkhole formation, and soil, stream, and beach erosion. Soil erosion can start with raindrops that fall up to about 32 kilometers per hour and impact a soil surface, dislodging and splashing particles of mineral and organic matter upward. These particles will land slightly downwind, but this will only lead to slow creep if the vegetation cover is substantial or water does not run over the surface.

This runoff or overland flow is the second important step in erosion, and it only happens when rainfall or water delivery to a point occurs faster than soil



Rocinha favela, like many favelas in Rio and other Brazilian cities, is located on a steep hillside. A gutter running along the base of the mountain diverts runoff away from the neighborhood during the rainy season.

pores can take in water (infiltration). Runoff may also occur with snowmelt or ice melt and cause accelerated erosion on surfaces from which humans have cleared vegetation or which has been plowed. Initially with runoff, water flows over the surface and removes thin layers of soil, by raindrops dislodging particles and by the force applied by water flow. This occurs first as sheet erosion as planar flows remove particles evenly from the surface, except for the more resistant soil pedestals that are often left behind as testament to former soil surfaces. This interrill erosion occurs in the belt of no channels on the upper slopes, and can be insidious because it leaves only subtle clues but may cause high soil particle and nutrient losses.

Rills (small streams) start to form downhill from interrills where flow converges and start to dissect soil channels in three directions: headcut, downcut, and laterally cut. Rills can remove large quantities of soil, including whole sections of topsoil, but farmers

can plow these out, though the plowing itself may loosen and make soils prone to erosion again. With more flow and greater turbulence, channels enlarge and tend to form in the same slopes where flows concentrate. Since plowing can expunge these larger rills, but they return in the same slope position, they are called ephemeral rills. These areas can be tilled out or left vegetated.

Gullies on the other hand are mature channels that have back, down, and laterally eroded over so large a space that normal tractors cannot plow them out. They can also be formed by waterfall erosion (runoff falls from one surface to another and undercuts the headwall surface), or by piping (water flowing underground intersects the surface, forming a surface outlet channel that erodes a larger area and undercuts surface soils that collapse along the subsurface channel). Gullies often start out being narrow and widen by channel flows undercutting their sides. Water flowing



in these channels carries water in suspension and as bed load, rolling, creeping, and saltating (bouncing) downstream.

Human landscape alteration also increases the size and frequency of mass movements on slopes, stream bank erosion, coastal erosion, and wind erosion. Wind soil erosion occurs at natural and accelerated rates as well and over a large part of the Earth, especially on flat, drier, sandier, and less-vegetated areas. The key factors in wind erosion are surface cover, soil coherence, and wind intensity and duration. In many areas where all of these conditions prevail, such as in Loess Plateau of China, which has had among the highest rates of erosion for millennia, water erosion is also very high. The processes of wind erosion starts with sediment load in a channel being carried in suspension by winds fast enough to hold up particles or those particles being rolled or saltated along the ground. Over 90 percent of the sediment is carried less than 1 meter above the surface, and all soil textures (clay, silt, and sand and even gravel) can be carried by wind, depending on aggregation, shape, and density. Winds tend to carry the larger particles like sands over shorter distances as creep or saltation. They can and do carry clays over thousands of kilometers, but clays also cohere into large enough clods that they resist deflation. Thus under normal winds, silt and fine sand is often the texture size that deflates, suspends, travels, and drops out into deposits at predictable distances from the point of erosion. These deposition areas build up and become the world's extensive loess (wind-deposited, loamy soil) deposits, like those in China, central Europe, the Mississippi Valley, and the Palouse region of Washington State, often fertile but highly erosive landscapes.

Measuring and Predicting Erosion

Humans have recognized the on-site and off-site problems due to soil erosion for millennia. Terracing started at least five thousand years ago, and structures to divert runoff were common in many ancient societies. Yet it was not until the early twentieth century that policy makers and scientists recognized the need to predict

soil erosion. In 1908, President Theodore Roosevelt recognized that soil erosion was among the most dangerous environmental challenges. But the affective response to soil erosion in the United States only came during the mid-1930s in the form of the Soil Conservation Service (SCS)—formerly the Soil Erosion Service of 1933 and now the Natural Resources Conservation Service. The SCS was the largest factor in the spread of soil conservation in the United States, made possible by President Franklin D. Roosevelt's New Deal and enthusiastically championed by H. H. Bennett, the first and most prominent director of the service. The New Deal spread the word about erosion and conservation through funding rural development, art, and science. For example, it organized conservation demonstrations and the Civilian Conservation Corps projects that built check dams and terracing around the United States. The New Deal also used science and scientific management, building predictive models by collecting more than eleven thousand so-called plot years of erosion data from around the United States under different land uses and constant slope lengths and distances. (Scientists can measure erosion using many techniques that have helped them understand both natural and accelerated rates of soil erosion. Measurement has focused on pin studies on natural slopes that have recorded truncation of soils under a variety of land uses and rain intensities and under physically and mathematically simulated conditions.)

Scientists led by Walter Wischmeier at Purdue University forged the plot data into the Universal Soil Loss Equation (USLE), a predictive equation that could be used by farmers and scientists to estimate and compare soil erosion under different crop types and conservation practices. The equation applies well to the regions in the United States from which it was empirically derived, and many studies have adapted it to many other parts of the world with variable success. The equation predicts sheet and rill erosion based on six variables: rainfall intensity, soil erodibility, slope length, slope gradient, crop types, and conservation practices (RKLSCP). Scientists further adapted the USLE into the Revised USLE (RUSLE), which is based on the same set of factors. These



Gold miners gather on site in South Africa, circa early twentieth century. Mining has been a major cause of erosion for hundreds of years.

equations have become codified as tools for policy and as important foundations of conservation planning for many land uses and are now available for use around the world from the U.S. Department of Agriculture's Agricultural Research Service (2006). Many scientists have also worked on a variety of physically based or process-oriented models that attempt to simulate the natural, physical processes of soil erosion, such as detachment. This next generation of models, such as the Water Erosion Prediction Process (WEPP) model, should more accurately predict more types of erosion and deposition across a landscape from sheet, rill, and channel erosion.

Soil Erosion in Perspective

Soil erosion has ramped up and waxed and waned through five major periods in world history. Despite twentieth-century advances in understanding soil erosion and conservation in the United States and other developed nations, the rates of soil erosion have not really waned in much of the developing world in the last

half-century. Indeed, humans today, through soil erosion, are the leading geomorphic agents on the Earth. The periods when soil erosion ramped up came as the result of technological breakthroughs and population expansions that allowed humans to alter the landscape: applying fire, domesticating animals, centralizing habitation and intensifying farming, expanding onto steeper slopes, and creating a greater demand for tropical crops. In many cases of severe soil erosion, pioneer farmers broke new lands with little understanding of them. History also shows that soil conservation arose at different times, curtailing soil losses and developing stable soil use during periods of increased population growth. The problem has always been how to sustain and preserve soil while speeding up the conservation learning curve of pioneer settlers.

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See also Agricultural Societies; Climate Change; Deforestation; Waste Management; Water

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Esperanto

The Polish linguist L. L. Zamenhof created Esperanto in the late nineteenth century in the hope that an international language would harmonize the peoples of the world. Widespread acceptance has continued, and in the mid-twentieth century, UNESCO affirmed the value of establishing Esperanto as a universal second language. Esperantists believe that doing so will produce positive outcomes in learning and teaching language, multilingualism, and human liberation.

Esperanto is the most successful of the roughly fifty planned language projects initiated since 1879. There are Esperanto speakers on virtually every continent of the globe. Estimates of the total number of speakers worldwide vary, though it is reasonable to assume—based on several variables including the large number of national Esperanto associations, high sales of instructional textbooks in the language, and membership data from local Esperanto societies—that those with some degree of proficiency in the language may range from several hundred thousand to several million. Esperanto is a living language that is both spoken and written. Its total lexicon contains between fifteen and twenty thousand root words that are potentially generative of myriad others.

Description

Known for its simplicity, beauty, and malleability as a medium for translation, Esperanto is considered by many to be one of the easiest languages to master. Its fundamental grammar is based on sixteen rules. In simplified form, these are as follows: (1) there exists

no indefinite article and the definite article (i.e., “the” in English) for masculine and feminine nouns is *la*; (2) all singular nouns end in *-o* (nominative) or *-on* (accusative); (3) the adjectival ending is *-a*; (4) the Esperanto lexicon contains words for the following numbers—“one” through “ten,” “one hundred,” and “one thousand”; (5) there are ten personal pronouns; (6) person and number are not indicated in verb forms, only tense and mood; the endings for the past, present, future, conditional, imperative, and infinitive are *-as*, *-is*, *-os*, *-us*, *-u*, and *-i*, respectively; (7) the adverbial ending is *-e*; (8) prepositions govern the nominative case; (9) words are read and pronounced exactly as they are written; (10) word accent falls always on the penultimate (next-to-last) syllable; (11) lexical juxtaposition is the means employed to form compound words; (12) two negative particles/words are unnecessary in any clause; (13) the accusative case is used to indicate directionality; (14) all prepositions have a definitive and unchanging meaning—in instances where the correct choice of preposition is uncertain, the word *je* (which has no exact meaning) is used; (15) foreign words are brought into Esperanto unchanged, except insofar as adjustments are needed to conform them to its orthographic conventions; and (16) an apostrophe can take the place of the final vowel that appears on either the definite article or a noun.

Esperanto’s creator, Ludwik Lejzer Zamenhof, was born on 15 December 1859 in Białystok, Poland. He was raised in a Jewish household, and his parents reinforced in him idealistic virtues that accentuated the kinship of all peoples. At home and in school, he was exposed to several languages including Russian, Polish, German, French, Latin, Greek, Hebrew,

and Lithuanian. The interethnic strife that dominated his city left a lasting impression on him, and at the age of nineteen he began working on the rudiments of what would become Esperanto. His hope was to provide an international language and unifying ideology that would bring all of the peoples of the Earth together in harmony. He published his initial tractate entitled *Lingvo Internacia* (International Language) in 1887 (in Russian). He did so using the pseudonymous attribution “Dr. Esperanto,” the meaning of which is roughly “a doctor who is hopeful.” Eventually, this fictive appellation was adopted as the name of Zamenhof’s new language. This was to be a fortuitous development because it describes well the character of many who consider themselves true “Esperantists.”

The corpus of Esperanto literature has grown over the years into one as rich and diverse as that of many national and ethnic languages. It includes novels, plays, periodicals, poetry, and exemplars from virtually all of the major literary genres. In addition, many major literary masterpieces—such as the works of William Shakespeare and even the Christian Bible—have been translated into Esperanto. National and international Esperanto associations serve as resources for those who use the language for social exchange, scientific writing, and a host of other purposes. These include the Esperanto League of North America (www.esperanto-usa.org) and the World Esperanto Association (also known as the UEA—Universala Esperanto-Asocio; for more information see www.uea.org). Both are membership organizations that provide opportunities to become part of the global community of Esperantists through conferences, receipt of newsletters and other periodicals, written correspondence with speakers around the world, and online opportunities for language learning.

In 1954 the United Nations Educational, Scientific, and Cultural Organization (UNESCO) passed a resolution affirming the value of Esperanto in establishing rapprochement between the peoples of the world, noting its positive benefit in furthering intellectual engagement, and pledging cooperation between UNESCO and the UEA. The spirit of this

initial resolution was reaffirmed in 1985 by a second resolution that celebrated the centenary of Esperanto in 1987 and empowered UNESCO’s director-general to follow closely the development of Esperanto as a mechanism for facilitating cross-cultural understanding. In 1996 the World Esperanto Congress, held in Prague, issued a manifesto calling world governments, institutions, and others to realize that use of a limited number of national languages would never result in a “fair and effective language order” that promotes democracy, global education, effective language teaching and learning, multilingualism, language rights, language diversity, and human liberation. Concomitantly, it identified the movement to promote Esperanto as a universal second language as a means to achieve the aforementioned ends.

Outlook

The growth and popularity of this planned language are evidence of its utility and the continuing vitality of Zamenhof’s vision of Esperanto as a linguistic bridge capable of connecting the world’s disparate peoples. The future of the Esperanto movement certainly merits close scrutiny, particularly as the need for effective means of communication, coalition building, and peacemaking increase in the wake of changing geopolitical realities in our postcolonial era.

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Both controversial and hard to define, *ethnicity* is a term of vital importance for world history. In its most restricted form it refers to a group's shared biological origins; in its broader definition it more closely resembles the concept of nationality. In practice, ethnicity is often linked to a specific language or religion. Ethnic prejudices have led to aggression, to feelings of ethnic superiority, and ultimately to genocide.

From the earliest civilizations to the present day, cultures have differentiated themselves from others on the basis of ethnicity. In many civilizations kings and nobles belonged to a different ethnicity than townspeople and peasants. And in the nineteenth and twentieth centuries researchers attempted to define ethnicity on a biological basis, creating pseudoscientific fields such as eugenics and "race science." Even in today's transnational and globalized world, ethnicity continues to play an important role in national identity and cooperation between different nations.

Definition

Ethnicity is exceedingly difficult to define in any precise way. In different contexts, it can come close in meaning to terms such as race, national origin, tribe, or nation. At the root of the word is the Greek term *ethnos*, meaning "nation," but in the specific sense of a group of people descended from a common ancestor, a kind of large extended family. When Sumerians referred to themselves as the "black-headed people," they were identifying themselves by ethnicity. To be sure, even by 2500 BCE considerable mixing of peoples had already occurred, but the crucial fact is that the Sumerians

distinguished themselves from other cultures not only by their language and religion, but by their physical appearance and descent: that is, by ethnicity.

Ethnicity thus refers in its most restricted form to a group's shared biological origins. But in any complex society intermarriage between diverse groups occurs. Thus ethnicity is often more correctly thought of as the way people perceive their own origins rather than a biological fact. While ethnicity in its narrow sense comes close to clan or race in meaning, in its broader definition ethnicity more closely resembles the concept of nationality. So when nineteenth-century nationalists praised the long historical existence and glorious past of, say, the German or Lithuanian nations, they did so in ethnic terms. Nation, a more political term, in this way became defined and propagandized as a function of ethnicity.

Strictly speaking, religion and culture have nothing to do with ethnicity. After all, a person can convert or learn a new language, even as an adult. In practice, however, ethnicity often becomes closely linked with a specific language or religion. Thus Poles and Croats came to see their ethnic identity closely linked with the Catholic religion. Similarly, tradition and history forged a tight link between the perception of Russian ethnicity and the Russian Orthodox Church. Again it is necessary to keep in mind that ethnic mythologies are frequently more important than actual bloodlines.

Ethnicity in the Premodern World

In the premodern world, before industrialization and the political-social changes of the past roughly 250

years, ethnicity very frequently overlapped with social class. Quite unlike in modern political systems, pre-modern princes often ruled over regions of extremely mixed ethnic populations with little concern about the origins or languages spoken by their subjects. Indeed, many rulers glorified their own ethnic origins as distinct from those of the people they ruled. The Mughal rulers of what is now India and Pakistan, starting with Zahir-ud-Din Muhammad (Babur; 1483–1530 CE), remembered Central Asia as their true homeland, even centuries afterwards. Similarly, the Manchu rulers of Qing China (1644–1911/12 CE) consciously emphasized their ethnic and cultural differences from the Han Chinese they ruled. The fact that the ruling classes were of a different ethnicity than the rest of the population was perceived as quite normal.

In the premodern world, ethnic and cultural diversity was seldom regarded as a political or social problem. On the whole, ethnic groups lived separately (even in the same territory), following their own rules and religious laws, but were tolerated by the rulers as long as they paid taxes and avoided rebellion. This is the situation in much of the Hebrew Bible, which recounts the story of one ethnicity (defined originally by religion) that lived under a variety of foreign rulers, from Persians to Egyptians. We should recall that in the premodern world social and physical mobility was quite restricted. Because different ethnic groups mixed less, they also were less likely to take on each other's cultural and linguistic characteristics. That is, there was relatively little assimilation in the premodern world. Each group followed its own affairs, often guaranteed in its autonomy by the king or sultan, as in the Ottoman Empire's *millet* system, which allowed Jews, Orthodox Christians, and other ethnic groups (though defined by religion) very broad autonomy in their internal affairs.

This is not to say that assimilation did not exist in the premodern world. Any powerful and successful culture attracts imitation among people with enough time, affluence, and ambition to attempt to take on a new culture. For example, in the Roman Empire

non-Romans were actively encouraged to learn Latin, dress like the Romans, and accept Roman culture in all its forms. Thus so-called barbarians (to use the Roman term) like Franks, Visigoths, and Lombards gradually shed their original languages even while retaining important ethnic and cultural differences. With the collapse of the Roman Empire in the fifth century CE, the mixture of indigenous, Roman, and “barbarian” cultures allowed new ethnic groups like Frenchmen, Italians, and Spaniards to develop.

Even in the premodern world some cultural and ethnic mixing took place. But there were limits to these processes. For example, stark physical differences in skin color and outward appearance between Europeans, Asians, Africans, and (Native) Americans made it difficult if not impossible for, say, a Mexican or Peruvian to claim to belong to the Spanish ethnicity. In this way race precluded or at the least stymied a broader process of ethnic-racial assimilation. Ethnicity played a crucial role in “ordering” the social order of the post-Columbian New World. At the highest ranks of society were the European-born, closely followed by Creoles (of European ethnicity but born in the New World). Descending down the social hierarchy, people of mixed American and European parentage (“mestizos”) came next, with indigenous people and African slaves occupying the lowest social ranks.

Ethnicity and Nationalism

As we have seen, in the premodern world princes and their subjects frequently belonged to different ethnicities. Because premodern rulers did not derive their legitimacy from “the nation” (that is, the people they ruled over), this ethnic difference had no effect on their power. All this was to change in the nineteenth century CE with the growth of nationalism. Nationalism can be simply defined as the political doctrine that demands that all “nations” (groups of people bound together by language, culture, religion, shared history, or some combination of these factors) should have their own “states” (sovereign political units). As

Young Rwandan refugees watch as a French soldier, part of the international force supporting the Rwandan relief effort, adjusts concertina wire encircling the airport, 14 August 1994.

Photo by Staff Sergeant Andy Dunaway.



a political movement, nationalism traces its origins back to the French Revolution, which demanded that the nation—not the king—should decide France’s politics and future. One great sticking point of early nationalism, however, was the definition of a nation. This is where ethnicity often came in. To be sure, few nationalists sincerely believed that, say, all Germans were really descended from the same ancestors, but in their rhetoric they acted as if this was the case. Some extreme cases, like the historian and racist philosopher Joseph-Arthur de Gobineau (1816–1882), specifically defined nations on the basis of ethnicity and even race. The evil consequences of such racist theories became entirely apparent with the rise of Adolf Hitler (1889–1945) to power in Germany. As part of his perverse program to “purify” the German nation, Hitler helped perpetrate one of the most appalling mass murders in history, causing millions of deaths.

In the United States, too, ethnicity played a major part in politics. Before 1864 the vast majority of African Americans were enslaved and long afterward did not enjoy *de facto* equal rights with other Americans. Asians immigrated to the United States in large numbers in the mid-1800s and helped build the transcontinental railroad (completed 1869), but they also suffered prejudice and legal disabilities. By the end of the century legal immigration from Asia (especially China) was almost impossible, while the

descendants of earlier Asian immigrants were often denied citizens’ rights.

In the last quarter of the nineteenth century and into the twentieth, European nations (joined to some extent by the United States) extended their domination over much of the rest of the world, especially in Africa. During this boom of “new imperialism,” ethnicity—usually in a racist sense—was employed as a tool to justify European control over Asians and Africans. Rudyard Kipling’s poem “The White Man’s Burden,” which urged the United States to take on the responsibilities of this imperialism, nicely sums up these beliefs.

The Age of Globalism

After World War II, racism, extreme forms of nationalism, and imperialism were explicitly rejected by the United Nations (formed 1945). Though many forms of these vicious ideologies and practices continued, few world leaders were prepared to defend theories of ethnic or racial superiority. Optimists looked forward to a world free of nationalism and racism in the near future. Unfortunately their expectations were not realized.

In the two decades after the end of World War II, dozens of new independent states were created out of former colonies, for the most part in Africa and Asia. Almost all of these new countries contained



Plate 17 from *Germania Antiqua* (1619) by Philip Clüver. The name “Barbarian,” which began as an onomatopoetic term that mimicked what foreign languages sounded like to the ancient Greeks and Romans (literally, “bar-bar”), still elicits stereotypes among ethnic groups.

a variety of ethnic groups among its citizens, often speaking very different languages and following different cultures. For example, the new state known as Pakistan was created from mainly Muslim regions of British India without consideration of its citizens’ ethnic diversity. The very name “Pakistan” was created to reflect this ethnic variety, its first letters referring to different regions dominated by diverse ethnic groups—Punjab, Afghania, Kashmir.

While British India split along religious lines (Hindu-Muslim) when achieving independence from Britain in 1947, most colonies were transformed into sovereign states without any border changes. Since colonial lines were drawn in the nineteenth century

without considering ethnic difference, African countries are some of the most ethnically diverse in the world. In many cases this has caused serious problems, including difficulties in communication among populations speaking extremely different languages. An even greater tragedy occurred in the late 1960s when the oil-rich region of Biafra attempted to secede from Nigeria. Biafra’s declaration of independence was based in part on the ethnic demands of the Ibo (or Igbo) nation against Yoruba dominance. In the end Nigerian troops crushed Biafran independence, and an uneasy truce was declared between the three main ethnic groups (Ibo, Yoruba, Hausa) that together make up some two-thirds of the country’s population.

While progress on interethnic relations has been made in Nigeria, the central African country of Rwanda witnessed a horrendous ethnic-based genocide in 1994. Two main ethnic groups, Tutsis and Hutus, dominated the small country created by Belgian colonists. The assassination of the Hutu president of the country set off a massacre of the Tutsi minority in which the majority of the country’s Tutsis were brutally murdered. In part, the Hutu hatred for Tutsis stemmed from historical factors. Tutsis had dominated the region’s politics before independence, and the Belgian colonial authorities had generally favored the Tutsi minority over their Hutu neighbors, causing widespread resentment.

Socialist states aimed to overcome ethnic hatred and create new national identities not based on ethnicity. The two best examples of such attempts are the Union of Soviet Socialist Republics (USSR) and Yugoslavia. In the USSR, officially all languages and ethnicities enjoyed equal rights. The country was divided up into fifteen “union republics” (Soviet Socialist Republics)—Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldavia, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan—in which generally two official languages were used: Russian and the local language. Thus in Vilnius, the capital of Soviet Lithuania, street signs were always bilingual, in Russian

and Lithuanian. But with the economic problems and political fumbling of the late 1980s in the USSR, ethnic strife grew. Bloody clashes occurred in the Caucasus region, between Muslim Azeris and Christian Armenians. In the Baltic republics (Estonia, Latvia, Lithuania) ethnic pride was one tool used by local activists against the USSR, culminating in independence in the early 1990s. Considering the huge size and ethnic diversity of the USSR, it is remarkable that its collapse engendered so little ethnic violence.

In Yugoslavia the situation was different. The south Slav state had been created out of an expanded Serbia after World War I. After World War II, Marshal Josip Broz Tito (1892–1980) led the country to liberation from the Nazis, then created a socialist state in which no one ethnic group was dominant. As long as Tito lived, the compromise between Yugoslavia's diverse ethnicities lasted. In the 1980s, however, a combination of political and economic breakdowns led to ethnic massacres in the early 1990s. Once again historical memories played some role here: many Serbs remembered the murderous activities of the fascist Croatian Ustasha, which had collaborated with the Nazis during World War II and massacred thousands of Serbs and Jews. Since the Dayton Peace Accords of 1995, an uneasy peace has existed in the region, though clashes between ethnic Serbs and Albanians in the Kosovo region have flared up periodically.

In the early twenty-first century, one catchword constantly repeated is "globalization." But even while the Internet, popular culture, and international trade bring the world closer, ethnicity remains a key and defining issue in domestic and international politics throughout the world. Only the future will reveal whether humanity will learn to appreciate and celebrate ethnic diversity in a spirit of toleration and mutual respect or will take

instead the negative path of prejudice, aggression, and genocide.

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See also Ethnocentrism; Indigenous Peoples; Nationalism, Ethnic

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Ethnobotany

Ethnobotany examines the cultural and biological relationships between plants and people, usually human populations organized into communities or linguistic groups. Ethnobotanists study how people use plants, modify habitats to benefit plant species, alter entire landscapes, and create new plants through genetic selection (domestication) and unnatural places to grow them (gardens and fields).

People without metal or advanced technology have been regarded as incapable of transforming the environment from its “pristine,” pre-European contact condition. Ethnobotanists have demonstrated through extensive fieldwork that indigenous people worldwide had the means and knowledge to modify the landscape and to create anthropogenic plant communities. In North America their interactions were extensive enough to make a “domesticated” plant environment where the actual presence of plants, their distribution, associations, quantity, and physical condition were determined by indigenous people’s behavior, utilitarian needs, and worldview.

Plant Species Management

Many techniques are used to target individual plant species to increase their productivity, ease of harvest, or spatial proximity to benefit people. Nonsedentary foragers, small-scale farmers, and agriculturists employ them. Burning clumps of a species will encourage sprouting for basketry or wooden tools. Redbud, hazel, and oak are manipulated by this means in Native California. Some plants are burned

seasonally to encourage edible seed production or greens for humans and grazing animals.

Weeding seasonally “useless” plants to reduce competition and raise visibility, shaking propagules to increase seedlings, and creating monotypic plots encourages other plants. These are forms of selective harvesting and tending. Another form of plant lifecycle intervention is harvesting plants’ subterranean roots, tubers, or bulbs with a digging stick. This technique incidentally replants root cuttings (e.g., Jerusalem artichokes and sweet flag) and bulblets (e.g., onions and camas). Through cultivation, the soil seeds are sowed, the soil is aerated, allelopaths are oxidized, and nutrients are recycled. Sedge and bulrush rhizomes for baskets grow longer from these tilling practices. Another method to assure the availability of important plants, especially rare medicines found some distance from a community, is transplanting them in a garden or protected track. A final procedure commonly used is pruning or coppicing perennial trees or shrubs for basket canes, cordage, and firewood. Breaking fruit-laden branches of serviceberry and huckleberry reinvigorated them to stimulate vegetative growth, flowering, and fruits. The Pueblo Indians in the Southwest pruned dead limbs from piñon pines for firewood and knocked the branches to stimulate growth of more nuts from a healthier tree.

Anthropogenic Ecosystems

Humans create heterogeneous environments through their broadscale management practices. Plant manipulation and harvest methods follow a multiyear cycle of plant management according to species and their



From earliest history to the present day, humans have encouraged the growth of beneficial plants and discouraged the growth weeds.

locality. The result is an ecosystem composed of a mosaic of communities maintained by human cultural practices. Wildernesses only came to be when the indigenous managers lost their land, were killed in wars or by disease, or were replaced by foreign colonists.

Fire is a common tool throughout the world to alter plant communities. Fires set locally around acorn, hickory, and other nut trees clear brush, aid collecting or, indirectly, establish shade-intolerant seedlings. By burning grasslands and berry patches, new growth is stimulated and plant competitors are eliminated. By using fire, nutrients are recycled simultaneously, pests killed, and lower stages of plant succession maintained. The overall result is a patchwork of communities characterized by species diversity and vigorous growth.

The entire landscape is not managed the same annually. Patches are burned in different years and harvests varied according to biological factors but aided by human practices of settlement, social dispersion, and even ritual regulation for determining which plants can be harvested at different times and places.

Special anthropogenic spaces are gardens. These are not a duplication of other plant communities but instead are associations of plants, which exist nowhere else, brought together and maintained by humans, often women. They are convenient for procuring plant products, for their high productivity, and

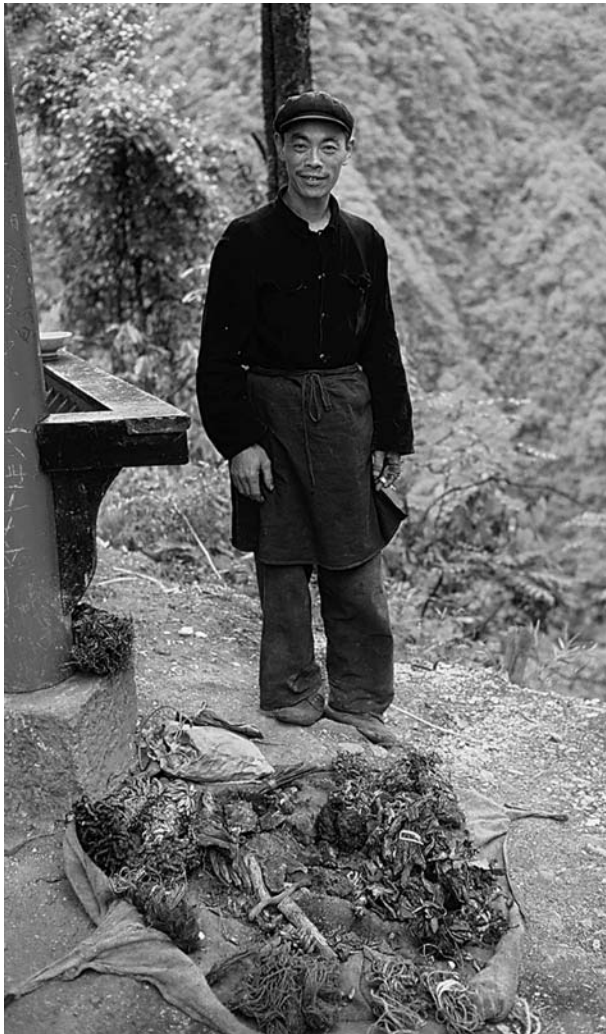
for their great diversity of utilitarian species. Gardens may consist of native species alone, domesticated plants, or a mixture of both categories.

Wild versus Domesticated Plants

Wild or domesticated is a difficult distinction. Most plants have been selected for by many cultivation techniques. Few have avoided these human-induced life-cycle alterations to be called truly “wild.” Agricultural plants, on the other hand, have been selected for features useful to people. Their new genetic expressions are plant “artifacts” that do not exist in nature and probably would not reproduce without the assistance and habitat maintenance by people. Domesticated plants are found in all temperate and tropical continents except Australia. They include annual plant seed foods (wheat, barley, rice, millet, maize), vegetables (tomatoes, potatoes, onions, squash, spinach, cabbage), herbal spices (chilies, coriander, parsley), perennial tree fruits (apples, peaches, mangos) and nuts (walnuts, coconuts), and beverages (coffee and tea). People also domesticated utilitarian plants (bottle gourds, cotton, hemp). Each requires a beneficial habitat for growth, and people determine these. In arid lands, irrigation canals and lithic mulch fields are necessary to conserve water for plants. Examples are found in Arizona, Israel, India, and China. The soil is improved with the addition of animal manure and kitchen waste. Heat and the impact of direct sunlight are mitigated by intercropping shade plants with tea, coffee, and fruits. Stone terracing to create more arable land surface alters topography in Peru, Mexico, and China. Women often maintain gardens for culinary variation, dietary supplements, or the aesthetics of flowers. Small fields are maintained for subsistence and are weeded according to local cultural rules of plant use. Large fields are cleared for staple crops or for surplus to sell in markets.

Ethnobotany of Environmental History

Ethnobotany tracks the actions of people, guided by their belief systems, to learn about alternative



A man harvests herbs used in traditional Chinese medicine from Mount Emei.

Photo by Joan Lebold Cohen.

management techniques, and to understand how plant worlds are manipulated by different cultures. People use many techniques to secure a harvest of utilitarian plants. They have many management principles that regulate exploitation through scheduling their harvest activities, rotating collection areas, and limiting access by applying social and religious sanctions. These practices may benefit individual species and, simultaneously, increase habitat diversity through communities at different stages of plant succession and diverse landscapes of more productive plant associations.

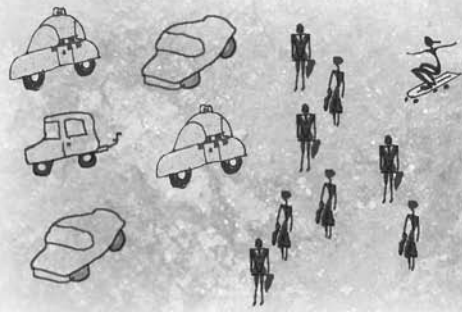
The domestication of maize (*Zea mays*) and its methods of production present an example of the ethnobotany of environmental change. Maize is an artifact, created throughout human selection of phenotypic traits, which cannot reproduce without

human assistance. To grow it humans must eliminate plant competition by clearing the land and providing the environmental qualities required for growth, mainly control over water and temperature. By clearing the land a habitat is created for ruderals, like pigweed (*Amaranthus*) or lamb's quarters (*Chenopodium*), which can be eaten as leaves and seeds by farmers or weeded according to cultural practices. After the field is abandoned, new plants volunteer that might be useful as well and create successional patches of diverse plants and animals. None would occur in nature without human manipulation of the environment for cultural purposes.

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Ethnocentrism

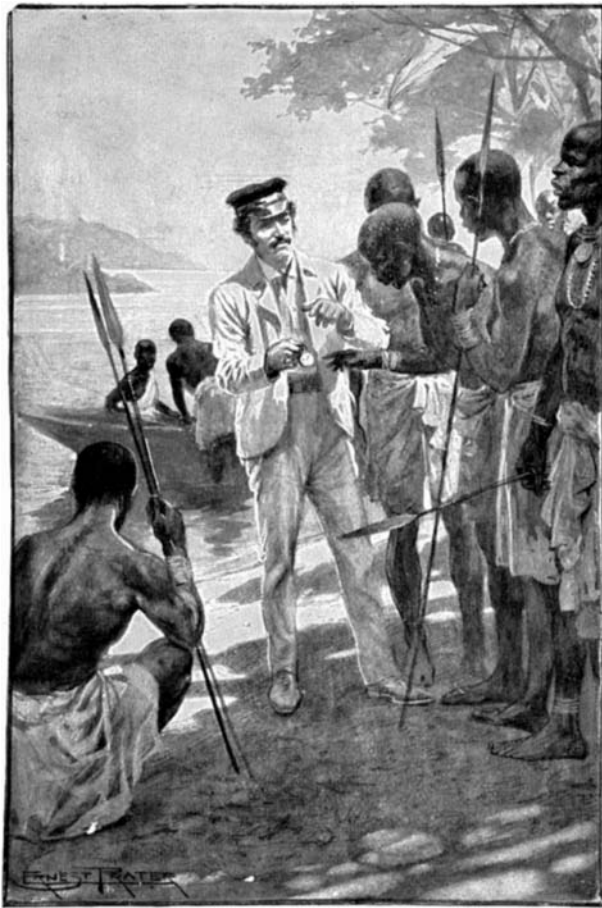
Ethnocentrism, the tendency to place one's own tribe, race, or country at the center of human affairs as superior to others, can be exemplified by the Western colonialism of the past five hundred years. But ethnocentrism is hardly limited to the West; it can be found throughout the world in other cultures' attitudes toward religious, racial, linguistic, and ethnic groups.

Ethnocentrism has existed in virtually all societies in human history. To feel superior to other peoples requires that one is aware of others beyond one's national or cultural boundaries. To feel superior to other peoples also requires that one knows enough about others to judge their civilization or way of life as inferior to one's own. Therefore, for ethnocentrism to take root and flourish, engagement with the world outside is necessary. A society that lacks the economic, military, or human resources to step outside its borders and do business with other peoples, whether through trade, conquest, or otherwise, cannot easily be labeled "ethnocentric," even if it is concerned primarily or solely with itself.

During the last two centuries Western colonialism placed much of the globe under the control of European countries or their transplants. Along with the political and military dimensions of colonialism, the colonizers often took it upon themselves to "improve" the subject peoples on the assumption that Western cultural values and social structures are superior to those of the subject peoples. The nineteenth-century English politician Thomas Macaulay justified, for example, the "anglicizing" of India on the grounds

that "one shelf of a Western library" had more to offer than centuries of Eastern knowledge and literature. French colonizers regarded *la mission civilisatrice* ("civilizing mission," the weaning of the natives from their primitive ways) as an integral part of their work in their colonies. Ethnocentrism certainly provided Europeans with a handy justification for their policies. Darwinist ideas during the late nineteenth century provided an argument to those people who believed that only the best, which generally meant their own nation, would survive and prosper over all others.

Ethnocentric worldviews have not, however, been limited to European colonists in the modern era. The Chinese name for their country, the Middle Kingdom, encapsulates the historical perspective that all those people outside its borders were barbarians who lacked the skills and civilization of the Chinese. This perspective applied to the numerous tribes of Central Asia, most famously the Mongols, whom the Chinese regarded as a constant threat to their way of life. When the British came to China during the eighteenth century to trade, and their emissary George Macartney refused to kowtow to the emperor, clearly strong feelings of ethnic superiority existed on both sides. Chinese attitudes changed, however, during the nineteenth century as the country was subjected to military defeats and humiliating treaties, and Chinese intellectuals sought to introduce Western-style reforms and openly acknowledged the inadequacy of traditional Chinese ideas in dealing with the challenges at hand. Ethnocentrism is dependent on the power that a certain group exercises in regard to others.



This drawing, in which the Scottish missionary David Livingstone shows off his pocket watch to curious Africans, conveys the ethnocentric notion of Western superiority.

Ethnocentric views need to be asserted and displayed to those who are being looked down upon.

East and West

The discussion of ethnocentrism has taken a new turn during the last two decades with the appearance of the Palestinian scholar Edward Said's ideas on Orientalism (an ethnocentric Western regard of Asian peoples) and the subsequent application of these ideas to areas beyond the scope of Said's study. Western knowledge of and attitudes toward non-Western peoples, according to Said, have been linked to Western dominance and power, both during the colonial era and after. Western representations of the East have been, his argument goes, both the cause and the result of the unequal power relationship between the

two during the last two hundred years. The East has been depicted as irrational, despotic, and backward in contrast to the rational, democratic, and progress-oriented West. Ethnocentric and racist attitudes have certainly played a role in this depiction. Although the point of Said's accusations has been widely acknowledged in scholarship and efforts have been made to rectify it, Orientalism arguably continues unabated in the news and popular media.

Although most people would regard ethnocentrism as undesirable, its close derivatives, such as nationalism, are often viewed positively. The explanation for this difference lies in part in the conflation (fusion) of ethnocentrism and racism, with racism clearly being a negative trait. Nationalism, on the other hand, does not always imply a race-based affiliation, although it, too, limits itself to a certain group to the exclusion of all others.

Ethnocentrism does not, however, always require an international context. Within the borders of a state, one racial or cultural or religious group can exercise power over others. Although European or white domination over others comes immediately to mind, this is by no means the only example. The disenfranchisement or even persecution of religious, linguistic, and ethnic minorities is widespread in both Western and non-Western countries in the modern world. Although this phenomenon is often not called "ethnocentrism," mainly because it is occurring within the same "people," its characteristics and impact are not very different from those of ethnocentrism in an international context.

Multiculturalism

Today people see multiculturalism, whether voluntary or encouraged or required by a government, as a desirable attitude in dealings with members of other groups. It denotes an openness to and appreciation of other cultures. Multiculturalism, so defined, is the opposite of ethnocentrism. Multiculturalism is not a purely twentieth-century phenomenon. It was a component, perhaps by a different name, of the

One thing is certain . . . we are not going to get any officer commission in the British or native army . . . The reason is that no Britisher would ever like to be under an Indian's command at present. It will require some generations before this feeling of the conquerors and the conquered, the ruler and the ruled, and of blacks and whites will fall away. • **Kunwar Amar Singh**

worldview of Romantics (proponents of a literary, artistic, and philosophical movement originating during the eighteenth century) such as the German philosopher and theologian Johann Herder, who respected and valued all cultures around the world, including “native” cultures that were evidently not at the same stage of historical development as those of the West. Multiculturalism in this case coexisted with a clear sense of being “above” certain other groups. Although modern multiculturalism is directed against biases, prejudices, and negativity toward other cultures, ethnocentrism, as an instinctual tendency to band together with people like oneself, may be hard to eliminate by social policy or decree. Perhaps the best hope lies in the interconnections and cross-cultural contacts that increasingly define our world and force us to recognize how critical members

of other groups are to our own physical and even cultural well-being.

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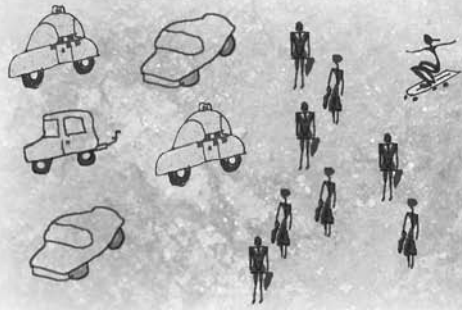
See also Race and Racism

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Ethnology

Ethnology is a subtopic of anthropology that studies cultures around the world through comparison and analysis. Also known as cross-cultural research, ethnology developed over the latter twentieth century to focus on universal theories and broad generalizations that emphasize similarity rather than diversity across cultures.

Comparative ethnology (cross-cultural research) is a subfield of cultural anthropology. Anthropologists, psychologists, and sociologists who conduct cross-cultural research are interested primarily in developing and testing theories of human culture, society, and behavior by comparing the behaviors and customs of cultures around the world. The focus is on universal theories that explain all or some aspect of culture or behavior in all places at all times, rather than theories whose explanatory reach is only a single culture or a single geographic or cultural region. Cross-cultural research is similar to cross-national research (practiced mainly by political scientists and economists), which uses modern nation-states rather than cultures as its unit of study.

Cross-cultural research emerged as a distinct form of anthropological research during the late nineteenth century but did not garner much attention until the 1940s. By then a large quantity of ethnography (information on cultures and ethnic groups) had been gathered for hundreds of cultures around the world, providing the raw data for cross-cultural study. In the typical cross-cultural study, a researcher sets forth a theory or theories to be tested, selects a sample of cultures from around the world to be studied, collects information on the topics of interest

from ethnographic reports on the cultures, converts the textual information to numeric codes of variable value, and then uses statistical tests to test the theory or theories.

With more and more ethnographic data available in the decades after World War II, cross-cultural research became more popular, with several hundred studies on kinship, child development, family life, war, religion, economics, and politics published during the 1960s and 1970s. These two decades were also a period of maturation for the field as many new research techniques were developed to make for more careful research and more trustworthy results. Among the pioneers in the field were the anthropologists George Peter Murdock at Yale, Harold Driver at Indiana University, Raoul Naroll at State University of New York at Buffalo, and John and Beatrice Whiting at Harvard. During the 1980s, as cultural anthropology became more focused on specific cultures, on the study of meaning, and on action research to assist and protect endangered peoples, cross-cultural research declined in popularity.

Cross-cultural research has always been controversial; many anthropologists who prefer intensive field research in a single culture are uncomfortable with an approach based on library research, the use of secondary data, and statistical analysis, which tend to produce broad generalizations that emphasize similarity rather than diversity across cultures.

Nonetheless, several decades of cross-cultural research have produced a number of important generalizations, especially significant for world history: (1) About 50 percent of cultural change around the world during the last two centuries can be attributed to peaceful interaction between different cultures



and about 50 percent to contact through warfare and domination. (2) The type of economy in a society is an important determinant of how parents raise their children and of adult personality. For example, in agricultural societies where cooperation is important, people will be more compliant, and they will raise their children to be obedient. In foraging societies where independent action is valued, adults will be more independent and will raise their children to be self-reliant. (3) Cultural evolution has been a powerful force in human history, with more efficient control of energy and a larger population typically leading to specialization and differentiation in the institutions of a society. (4) Maintaining a large military force to deter enemies or potential enemies more often produces war than peace. Peaceful contact such as through trading or participation in joint religious rituals more often produces peace. (5) From a cross-cultural perspective, there is no such thing as “female status.” Rather, female status is a complex set of beliefs and behaviors, with women often having high status and much influence in some domains such as the household economy or religion, and little status and influence in other domains such as the military. (6) Ethnocentrism, the belief that one’s culture is superior to all others, is found in all cultures. It tends to be less pronounced among neighboring cultures that are similar in many ways. (7) All societies have a basic economic concern with control over and access to natural resources. (8) All societies have a clear division of labor by sex, with some work assigned exclusively to men and other work to women. Men tend to do work that requires much strength, whereas women tend to do work that is compatible with child care.

(9) Although egalitarian (relating to human equality) societies have existed, in the modern world all societies are socially stratified, often into social classes, meaning that not all groups have equal access to a society’s resources. (10) A considerable amount of radical cultural change throughout history is the result of religious movements. These movements often develop in times of societal stress and are led by charismatic figures often defined as prophets. (11) The evolutionary ideas of the nineteenth century that suggested that human society evolved through time from a state of lesser to greater civilization have no merit.

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See also Anthropology; Ethnicity; Ethnocentrism; Nationalism, Ethnic

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Eurasia, Inner

Inner Eurasia typically refers to a huge area that includes all the lands within the former Soviet Union, as well as Mongolia, Xinjiang, and Inner Mongolia. The region's flatness explains the expansiveness of the countries found there; it also clarifies the dominant role of pastoralism and nomadic societies that have shaped the history of the area from the foraging era to the present day.

Innor Eurasia is one of several geographical labels that can be used when thinking about the history of the interior regions of Eurasia. Other labels that refer to the innermost regions of the Eurasian land-mass include Turkistan, Inner Asia, Central Eurasia, and Central Asia. The label Inner Eurasia is the most inclusive of all the alternatives, linking the fate of Central Asia to that of the lands included within Mongolia and the former Soviet Union, and suggesting that the history of this entire region was shaped by the distinctive geography of the Eurasian heartlands.

Using geographical labels with care and precision is a matter of great importance within all forms of history, but particularly within world history, for geographical labels shape how we think about the past and help steer historical arguments along particular trajectories. Used uncritically, they can warp our accounts of the past, projecting present-day assumptions into the remote past. Used carefully and critically, they can reveal new aspects of the past. As the geographers Martin Lewis and Karen Wigen have argued, metageographies, or the categories we use to think about the geography of the world, shape historical arguments at the most profound levels. For example, the conventional division of Europe and Asia at

the Ural Mountains carries the implicit assumption that Eurasia divides naturally into its European and Asian components, that all Asian societies share basic similarities, and that a line from the Urals to the Black Sea constitutes the fault line between these metaregions. None of these assumptions bears serious scrutiny today, yet the labels persist as traps for the uncritical reader.

Delineating Inner Eurasia

Inner Eurasia refers to a huge area that includes all the lands within the former Soviet Union, as well as Mongolia, Xinjiang, and Inner Mongolia. To group this large and disparate region together makes sense only on the hypothesis that Inner Eurasia has an underlying geographical coherence that has shaped the history of the entire region. Early in the twentieth century, the British geographer Halford Mackinder argued that it is helpful to think of the Eurasian land-mass as divided into two main regions. At its heart is a huge, largely flat, plain—the largest continuous region of flatlands on Earth. Inner Eurasia was constructed mainly from two ancient tectonic plates (the Siberian plates) that joined some 300 million years ago to create a huge mountain chain that has since worn away to leave the low Ural Mountains. Attached to the west, south, and east of the Inner Eurasian plain lie several subcontinental peninsulas, all with a more varied topography. These make up what we can call Outer Eurasia. Outer Eurasia includes Europe and southwest Asia, the Indian subcontinent, Southeast Asia, and China. The plates carrying modern Europe and China joined the Siberian plates approximately 200 million years ago. Within the last 60



million years, the plates carrying modern India and Africa drove north and collided with the Eurasian plate, creating a chain of mountains from the Alps to the Himalayas. These offer the clearest topographical border between Inner and Outer Eurasia. So, at the most general level, Eurasia consists of an ancient, interior plain that is surrounded by regions closer to the sea that have a choppier and more complex topography.

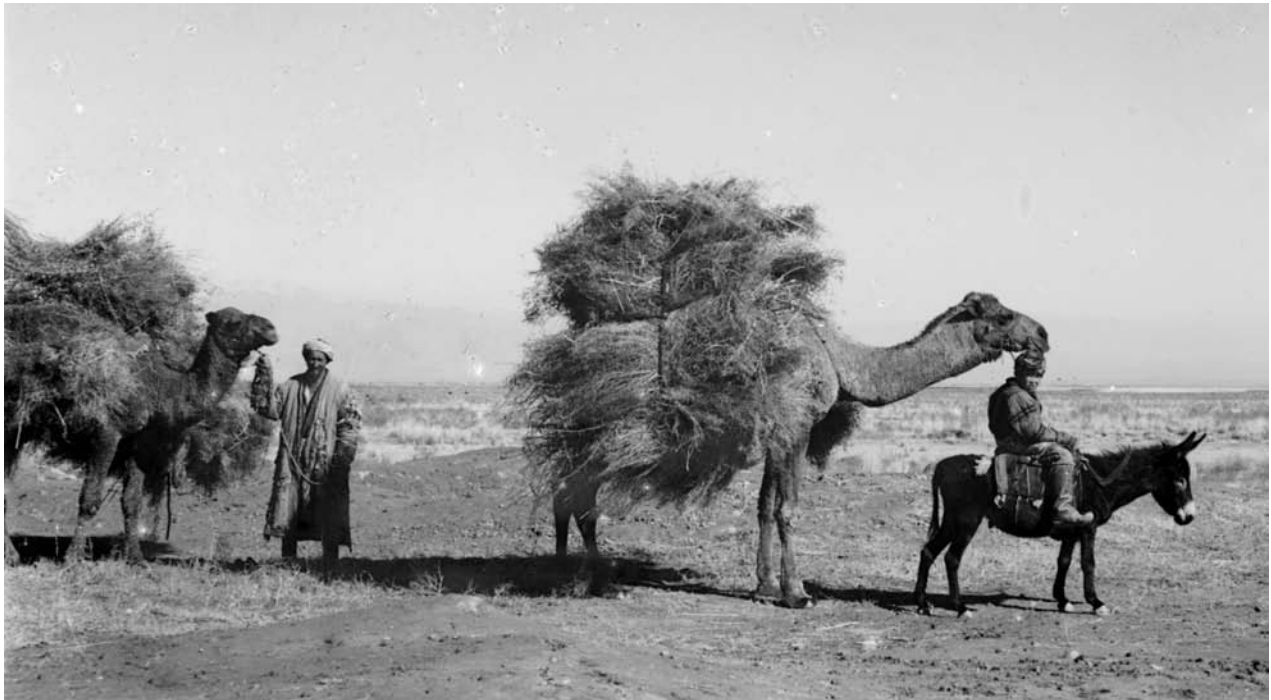
On large scales, Inner and Outer Eurasia are very different. Not only is Inner Eurasia mostly flatter than Outer Eurasia, it is also more arid, for it is cut off from the sea, except to the north where extreme cold limits evaporation and precipitation. In Inner Eurasia, average yearly rainfall exceeds 50 centimeters only in the far west (in modern Belarus, northern Ukraine, and European Russia), along the southern parts of the eastern Siberian coast, and in pockets in Siberia; in Outer Eurasia, regions with rainfall of less than 50 centimeters a year are unusual, and in many regions average rainfall is well above 100 centimeters a year. Because it lies further north, there is less sunlight for photosynthesis. Inner Eurasia is also, on average, colder than Outer Eurasia. As Mackinder (1962, 110) pointed out, the heartland of Eurasia is, roughly speaking, the part that freezes in January: “At mid-winter, as seen from the moon, a vast white shield would reveal the Heartland in its largest meaning.” Because Inner Eurasia is so flat and most of it is far from the moderating influence of oceans, its temperatures also tend to be more extreme than those of Outer Eurasia. Differences between summer and winter increase as one moves east, so that, in general, the climates of Mongolia are harsher and more variable than those of Ukraine.

Flatness, aridity, northerly latitudes, and continental climates shaped all the societies of Inner Eurasia and ensured that the history of Inner Eurasia would be very different from that of Outer Eurasia. Flatness explains why the states that emerged in this region were some of the largest in the world, for there were few geographical barriers to the movements of powerful armies. The harsh climatic and ecological environments of Inner Eurasia help explain why population

densities were lower than in most of Outer Eurasia. This was true even in the foraging (Paleolithic) era, for humans evolved in the savanna lands of Africa and had to develop entirely new forms of clothing and housing, as well as new hunting techniques, to settle in Inner Eurasia. In the last two thousand years, the populations of Inner Eurasia have varied from one-tenth to one-twentieth of those of Outer Eurasia, even though the two regions are approximately the same size. Given these difficulties, it is not surprising that Inner Eurasia seems to have been settled later than most of Outer Eurasia. In the Neolithic era, the region’s aridity ensured that agriculture made little headway for many thousands of years, except in parts of modern Ukraine and in the borderlands of Central Asia, where irrigation farming was possible. Extensive farming communities appeared in the so-called Tripolye culture of Ukraine, and in Central Asia, significant urban communities emerged during the third millennium BCE. Elsewhere, the Neolithic revolution in its most familiar form, that of grain-based agriculture, bypassed most of Inner Eurasia. So, while agriculture spread in much of Outer Eurasia, laying the foundations for several great agrarian civilizations, in Inner Eurasia agriculture made hardly any headway for many thousands of years. Instead, Neolithic technologies entered Inner Eurasia in the less familiar form of pastoralism.

Pastoralism

Unlike agricultural lifeways, which are dominated by domesticated plants, pastoral lifeways are dominated by the exploitation of domesticated livestock. Pastoralism became a viable lifeway as a result of a series of innovations that the archaeologist Andrew Sherratt has described as the secondary-products revolution. Beginning around 4000 BCE, people began to exploit not just those products of livestock that could be used after an animal’s slaughter (its skin, bones, and meat), but also the animal’s secondary products—products such as its wool, blood, milk, and traction power—that could be used while it was still alive. These techniques raised the efficiency with which domesticated



The peoples of Inner Eurasia used a variety of animals for transport. This photo from the early twentieth century shows camels loaded with fodder.

animals could be exploited, making it possible to build entire lifeways around the use of domesticated animals such as sheep, cattle, goats, horses, camels, and yaks. Pastoralism proved an effective way of exploiting the vast grasslands that stretched from Hungary to Manchuria, and, for several thousand years, it was the dominant lifeway throughout this region. The earliest evidence of pastoralism comes from the Sredny Stog cultures of eastern Ukraine, which include some of the first evidence for the riding of horses. These were still relatively sedentary cultures. But in the third millennium BCE, pastoralism of some form spread throughout much of southern Russia and Ukraine and into parts of modern Kazakhstan. Evidence from steppe burial mounds suggests that pastoralism was also becoming more nomadic, and this makes ecological sense, for the most economical way to graze large numbers of animals is to move them over large areas. By 2000 BCE, pastoralism of some form had spread towards the western borders of Mongolia. Nicola Di Cosmo, a specialist on Inner Asia, writes, “A conservative interpretation would date a significant impact of horseback riding on western and Central Asia to between the mid-third and early second millennium BCE” (2001, 26). In the

first millennium BCE, pastoralism finally spread to Mongolia. It also appeared in new and more warlike forms that may have depended on technological innovations such as the appearance of new and improved saddles and improved compound bows.

The dominant role of pastoralism in the steppes of Inner Eurasia had a profound impact on the history of the entire region, and also on the way that the region’s history has been perceived. Pastoralism cannot support the large populations that agriculture can, and pastoralists are normally nomadic or seminomadic, so pastoralism did not generate the areas of dense settlement characteristic of so much of Outer Eurasia. For the most part, this was a world without towns or cities. Instead of villages and cities, small, nomadic encampments dominated the steppes. Because cities and all the paraphernalia we associate with cities and agrarian civilizations existed only in a few borderland regions of Inner Eurasia, the history of the region was strikingly different from that of Outer Eurasia. For the historian, one of the most important differences is that pastoralist societies generated few written records. Because historians rely heavily on such records, they have tended to ignore societies that do not produce them. So Inner Eurasia has too



Camels can easily transport yurts—portable, wood lattice-framed structures covered with felt—across the steppes. Thus the yurt became the optimum dwelling for both nomads and pastoralists.

often been seen through the eyes of the agrarian civilizations of Outer Eurasia, beginning with the works of the Greek historian Herodotus (c. 484–425 BCE) and the Chinese Han dynasty historian Sima Qian (c. 145–86 BCE). Even the most sympathetic Outer Eurasian historians portrayed Inner Eurasia as a sort of black hole out of which pastoralists rode to rape and pillage the villages and cities of the “civilized” world. Not surprisingly, Inner Eurasian pastoralists have traditionally been cast as “barbarians” in world historiography.

In part, this is because the mobility of pastoralism, the skills it teaches in the handling of large animals, and the ubiquity of raiding ensured that most pastoralist societies of Inner Eurasia have had a military influence out of proportion to their sheer numbers. In a famous passage, Sima Qian wrote of the pastoralist Xiongnu to China’s north:

The little boys start out by learning to ride sheep and shoot birds and rats with a bow and arrow, and when they get a little older they shoot foxes and hares, which are used for food. Thus all the young men are able to use a bow and act as armed cavalry in time of

war. It is their custom to herd their flocks in times of peace and make their living by hunting, but in periods of crisis they take up arms and go off on plundering and marauding expeditions. (Watson 1961, 2:155)

The limited resources of pastoralist societies also ensured that they were usually keen to engage in exchanges with neighboring communities of farmers, trading livestock produce such as meat, skins, and cloths for agricultural products and artisan goods including weaponry. Evidence of such exchanges, some peaceful, but some clearly violent, appears as early as the fourth millennium BCE on the edges of the Tripolye culture in Ukraine, in the objects found within steppe burial mounds and in the increasing use of fortifications by farming communities.

Inner Eurasia and Cultural Exchange

The mobility of pastoralists and their interest in exchanges ensured that goods, ideas, people, and influences passed much more readily through the Inner Eurasian steppes than is commonly supposed. Pastoralists carried the technologies of pastoralism

through the steppes to the borders with China. They also carried languages. The Indo-European languages spread throughout southern Inner Eurasia and then beyond, carried largely by communities of pastoralists, while Turkic languages began to spread eastwards from about 2,000 years ago, also carried mainly by pastoralists. In addition, pastoralist communities helped spread religious practices and artistic motifs, as well as technologies such as bronze working and the use of chariots. The Inner Eurasian steppes, far from being a barrier to civilization, provided the interconnections that from at least the second millennium BCE ensured that the history of the entire Eurasian landmass would have a certain underlying unity, nurtured by the symbiotic relationship between the societies of Inner and Outer Eurasia.

The existence of trans-Eurasian contacts is evident as early as 2000 BCE within the Oxus civilization (on the borders of modern Afghanistan, Turkmenistan, and Uzbekistan), where archaeologists have found goods from the steppes, as well as goods from Mesopotamia, India, and even China. The importance of trans-Eurasian exchanges increased in the first millennium BCE when, for the first time, Outer Eurasian states, including Achaemenid Persia and Han China, tried to conquer parts of Inner Eurasia, and trade goods, including silk, started to flow right across Eurasia. The modern term *Silk Roads* is used to refer to the networks of exchange through Inner Eurasia that linked all parts of the Eurasian landmass.

Inner Eurasian Pastoralist States

The military power of pastoralist communities meant that when they were threatened, they could unite quickly to form powerful military confederations that were a match for the armies of great Outer Eurasian powers. The military power of such confederations was first realized clearly in the agrarian world when pastoralist armies defeated and killed Cyrus II (reigned 558–529 BCE), the founder of the Achaemenid Empire, but it is also apparent from the detailed account by Herodotus of the unsuccessful campaign in the Black Sea steppes of Cyrus's successor, Darius I

(reigned 522–486 BCE). In the second century BCE, for the first time, a pastoralist leader managed to build a confederation of pastoralists and hold it together long enough that historians conventionally refer to it as a state or empire. This was the achievement of Modun (reigned 209–174 BCE), the creator of the Xiongnu Empire in modern Mongolia.

Inner Eurasian pastoralist states were very different from the agrarian and city-based states of Outer Eurasia. With limited human and material resources, they could be held together only by extracting resources from neighboring agrarian regions using a complex mixture of looting, tribute taking, taxation, and trade, and redistributing them to regional chiefs. So, as Thomas Barfield and Nicola Di Cosmo have pointed out, the success and longevity of pastoralist empires depended on how well they could accomplish that task. The larger the flow of material and cultural resources, the more powerful the state, so it is no accident that the most powerful pastoralist states, such as the sixth-century Turkic Empire and the empire of Chinggis (Genghis) Khan in the thirteenth century, were built by extracting resources from powerful agrarian states such as China or Persia. This also explains why major pastoralist states appeared along the border regions between Inner Eurasia and Outer Eurasia, and why many powerful pastoralist leaders, including the Seljuks in the twelfth century and the Mughals in the sixteenth century, eventually crossed the border to found dynasties in nearby regions of Outer Eurasia.

Agriculture in Inner Eurasia

The dominant role of pastoralism in Inner Eurasia created a complex symbiotic relationship across the borders between Inner and Outer Eurasia for several millennia. But in the last thousand years, the dominance of pastoralists in Inner Eurasia has been challenged by the spread of agrarian communities from the west. In the middle of the first millennium CE, large numbers of peasant farmers from eastern Europe began to settle in the lands west of the Urals that are dominated today by Belarus, Ukraine, and western



Russia. Why farmers should have settled this region after avoiding it for several millennia remains unclear, though it may have something to do with the cultivation of rye and the increasing use of metal implements, which made farming more viable even in the difficult climatic conditions of western Inner Eurasia. Steppe rulers such as the Khazars (flourished seventh to tenth centuries) began to extract resources from these communities, but it was Viking warriors who established the first durable agrarian states in the region, with the formation of a federation of city-states, united under Viking leaders, some time in the tenth century.

As agriculture spread within Inner Eurasia, it became an increasingly important foundation for emerging states, providing a demographic and economic basis that no pastoralist communities could match. Agriculture sustained the power not just of Rus and Lithuania, but also of remnant states of the Mongol Empire, such as the Golden Horde (thirteenth to fifteenth centuries). Eventually the state of Muscovy established control of most of the agrarian lands of western Inner Eurasia, and over the next few centuries it built the largest agrarian state in the world as it slowly established its control over the woodlands of Siberia. The greater demographic dynamism of agriculture ensured that, over time, the sheer numbers of people supported within agrarian states would give them an advantage over neighboring pastoralist societies as well, and so, over many generations, Muscovy and the Russian Empire also began to encroach on the steppes of Inner Eurasia. By the end of the nineteenth century, the Russian Empire had conquered most of the steppes and all of Central Asia. Meanwhile, the Qing dynasty (1644–1911/12) in China had conquered Xinjiang, after defeating the last great pastoralist empire, that of the Dzhungars, and established its control over much of Mongolia. The dominance of pastoralism had ended and Inner Eurasia, like Outer Eurasia, was now dominated by agrarian states.

The distinctive geography of Inner Eurasia, however, left its mark even on the now-dominant agrarian states of the region. The ecological difficulties of Inner Eurasia ensured that agriculture was never easy and rarely as productive as in most of Outer Eurasia. As a result, the agrarian states of Inner Eurasia had to

be peculiarly good at mobilizing resources, and that meant they needed strong, autocratic leadership. At the same time, the flatness of the steppes exposed both agrarian and pastoralist states to almost constant border conflict and forced them to concentrate resources to a peculiar degree on warfare. But it also made it possible to build huge states, for geography posed few natural barriers to the expansion of powerful states. This is why the history of Muscovy and Russia can be thought of as a slow filling up of the lands of Inner Eurasia. Finally, the mobilizational traditions of Russian states, dictated by the relative ecological poverty of Inner Eurasia, may help explain why, in the Soviet era, there emerged an economy and society very different from those of the capitalist West. Soviet society, like the society of Muscovite and Imperial Russia, was dominated by a powerful autocratic state capable of mobilizing resources with exceptional intensity. In this way, the distinctive features of Inner Eurasia's geography have shaped the region's history from the foraging era to the present day.

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See also Afro-Eurasia; Herodotus; Pastoral Nomadic Societies; Russian Soviet Empire; Secondary-Products Revolution; Silk Roads; Sima Qian; Steppe Confederations

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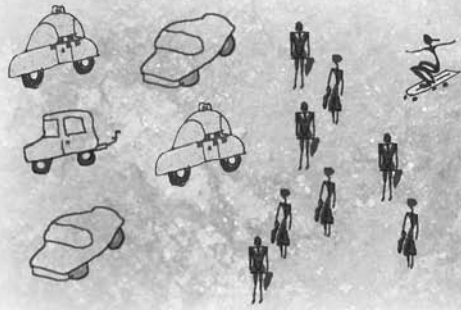
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Eurocentrism

Eurocentrism, simplistically, puts Europe at the “center of the universe.” It interprets the world through Western values but should more accurately be termed Western-centrism since it incorporates Europe as well as the cultures of North America and Australia. Although it has existed in varying degrees for centuries, it was fortified by the physical and economic power of the twentieth century, which increased its presence around the world.

The writer Neal Ascherson suggested that “on the shores of the Black Sea were born a pair of Siamese twins called ‘civilization’ and ‘barbarism’” (1995, 49). The observation about these twins is surely incisive and universal, even if the Black Sea venue may be questioned. The civilized and barbarian twins have had many births and rebirths in all times and places occupied by people. Moreover, they have ever been co-terminus with centrism—Greco-, Islamic-, Sino-, Euro-, U.S.-, Western- and many others—each of which labeled all others barbarians. What distinguishes Eurocentrism (actually Western-centrism, since Eurocentrism incorporates such geographically disparate regions as North America and Australia as well as Europe) is that during the past century or more it has been accompanied by power, which it has used to legitimate, extend, and maintain itself and its rule in the world.

In 1978 the literary critic Edward Said condemned “Orientalism”—Western conceptions of the Islamic world—as a grab bag of ill-defined characteristics that are distinctive only in allegedly being non-Western. Indeed, the very invention of

Orientalism was not so much an attempt to say something about “the Orient” as an attempt to delineate and distinguish “the West” from “the rest,” as the scholar Samuel Huntington put it in his 1993 article “Clash of Civilizations” in the journal *Foreign Relations*. The media immediately welcomed this formulation of an alleged clash between the West and (in particular) China and Islam; and they have even more widely accepted it as an explanation of world events since the terrorist attacks of September 11, 2001. However, Gernot Köhler, a scholar of international relations and the world economy, has suggested that the sort of thinking that leads to Orientalism or to theories of civilization clashes goes hand in hand with the notion of global apartheid: the first is an ideological facet of the second, just as the notion of the “white man’s burden” was an ideological facet of European colonialism and imperialism.

Nor does it appear that the decolonization of the second half of the twentieth century has put those notions to rest in the sands of history. On the contrary, the rhetoric of such former leaders as Britain’s prime minister Tony Blair (served 1997–2007) and the U.S. president George W. Bush (served 2001–2009) is replete with claims that they were defending civilization (with the unspoken assumption being that they meant Western civilization) against outside threats—this in spite of the fact that many argued that some of their methods, such as Bush’s doctrine of preemptive war, threatened to destroy one of civilization’s most precious gifts: international law and institutions to prevent man from killing man in a general war of all against all.

Historical Development of Eurocentrism

Eurocentrism currently exerts widespread influence in the humanities, social sciences, and even the natural and physical sciences, but it was not always so. The 1911 edition of the *Oxford Dictionary of Current English* defined *orient* as “The East; lustrous, sparkling, precious; radiant, rising, nascent; place or exactly determine position, settle or find bearings; bring into clearly understood relations; direct towards; determine how one stands in relation to one’s surroundings. Turn eastward.” By 1980, however, the *American Oxford Dictionary* defined it simply as “The East; countries east of the Mediterranean, especially East Asia.” The Orient as a model to be acclaimed and copied had become the antimodel to be defamed and shunned. Such European luminaries as the philosopher René Descartes (1596–1650), the writer Voltaire (1694–1778), and the economist Adam Smith (1723–1790), however, were still persuaded by the former definition.

Although the French intellectual Montesquieu (1689–1755) was an early forerunner of the change to a more negative image of the East, the major transformation in opinion came with the European Industrial Revolution and colonialism, especially from the mid-nineteenth century, with those proponents of dialectical change, G. W. F. Hegel (1770–1831) and Karl Marx (1818–1883). Their total Eurocentrism really did turn views of the world on its head. They began a tradition in the humanities and social sciences of differentiating the progressive “us” from the traditional “them” that continues to this day. Historiography—even “world” history—in the West has been entirely Eurocentric, running only on a westward track from “the Orient” to Western Europe and America. Works in this vein include the uncompleted *Weltgeschichte* (Universal History) of Leopold von Ranke (1795–1886), the twelve-volume *Study of History* (1934–1961) of Arnold Toynbee (1889–1975), who described the rise and fall of twenty-one “civilizations” and the “arrested development” of five others, and William H. McNeill’s *Rise of the West*, originally

published in 1963. Nor is the history of science immune from a focus on the West: the very notion of a seventeenth-century scientific revolution in Europe that is taken to be the basis of Europe’s technological and industrial revolution tends to downplay scientific innovation or contributions from other parts of the world.

Eurocentrism in Sociology and Anthropology

From the 1850s this dichotomy of the West and the rest and attendant praise of things Western has been the hallmark of all Western social theory. The nineteenth-century French “father of sociology” Auguste Comte (1798–1857) and the British legal scholar Henry Maine (1822–1888) distinguished between European “science” and “contracts,” which allegedly replaced age-old “tradition.” The French sociologist Émile Durkheim (1858–1917) distinguished “organic” and “mechanical” forms of social organization, and the German sociologist Ferdinand Tönnies (1855–1936) alleged a transition from traditional *gemeinschaft* (“community”) to modern *gesellschaft* (“society”). In the twentieth century the sociologist and economist Max Weber (1864–1920) considered European rationality to be the essential ingredient in Western success, as described in *The Protestant Ethic and the Spirit of Capitalism* (1904–1905). During the Cold War, the sociologist Talcott Parsons, who popularized Weber in the United States, distinguished Western “universalist” social forms from the “particularist” social forms of other cultures, and the anthropologist Robert Redfield found a contrast and transition between traditional “folk” and modern “urban” society and a certain symbiosis between “low” and “high” civilizations. In each case, the modern, progressive, “good” side of the dichotomy is the Western one, and the other is the “Orientalist” one, which the Palestinian American Edward Said condemned as an invented grab bag of whatever is not “Western.” The modernization theory that dominated postwar social sciences and economics distinguished Western modernization

Europe was created by history. America was created by philosophy. • Margaret Thatcher (b. 1925)

from other cultures' and regions' traditionalism. The economist W. W. Rostow's *Stages of Economic Growth* (1959) was a major vehicle for articulating modernization theory and followed the same Eurocentric theoretical path from traditional to postindustrialist society. As late as 1998, David Landes' best-selling *The Wealth and Poverty of Nations* assured readers of the exceptionality of European culture.

Twenty-First Century Eurocentrism

In its present incarnation, critics of Eurocentrism believe it entails the successful, free-trading West teaching the rest of the world the merits of a “pull-yourself-up-by-your-bootstraps ethic,” which will, its Western proponents believe, bring the wealth of the West to the poor rest. The harshest critics of Eurocentrism see this formulation as an oxymoron. If the idea is to “pull yourself up by your own bootstraps,” as the Eurocentrists claim, then what happens to the theory that the rest of the world is supposedly being saved by Western beneficence? The worst forms of Eurocentrism, its critics believe, received a new lease on life after September 11, 2001 by the George W. Bush and Tony Blair propaganda machine, which never tired of claiming to be dropping their bombs to “Save [Western] Civilization.” The media that supported this machine trumped up Samuel Huntington's alleged

clash of civilizations between “the West” and “the Rest”—and particularly against Islam and China.

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Deceased, formerly of Northeastern University

See also Ethnocentrism; Europe; Orientalism; Western Civilization

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chat

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Europe

Europe as we know it has evolved over centuries, shaped by its history, wars, empires, neighbors, and encounters with different peoples and cultures, both near and far. Today Europe is considered a continental home, but the notion of a European continent was not born until the sixteenth century. It has few natural boundaries and it defined more by its relations with other regions than by its geography.

Europe was an idea long before it acquired anything like its present geographical contours, internal structures and relationships, or connection to the rest of the world. The idea of a European continent may seem to belong to the natural order of things, but the idea of a continent is relatively modern, dating from the sixteenth century. Europe belonged to the realm of myth before it acquired a concrete physical location. The name comes from Greek myth, the story of Europa. In that story, Europa, the daughter of a Phoenician king, is abducted and raped by the Greek god Zeus. He takes her from her home on the Asian coast of the Mediterranean to Crete, where she bears three sons, giving birth to Minoan civilization. As a mother figure, Europa provided the Greeks, and later Europe itself, with a powerful myth of origins. But Europe did not originally refer to the geographical space that now bears that name. It was originally attached to the Aegean coast and only gradually came to be attached to its northern and western hinterlands, to the areas we now associate with the Balkans.

The Greeks used other allegorical female figures, Asia and Africa, to name the lands to their east and south, thereby creating a tripartite division of the world, which they thought of as an island (Orbis

Terrarum) encircled by an impassable river, which they called Oceanus. Europe, Asia, and Africa were not originally conceived of as separate continents, but as parts of a single landmass. The Judeo-Christian myth of Noah's three sons also presents the idea of an earth island divided into three parts, each inherited by one of the sons, with Shem coming into the possession of Asia, Ham of Africa, and Japheth Europe. It was not until the existence of another landmass was established in the wake of the voyages of Columbus, and identified with another female figure, America, that the concept of continents came into being. When the ancient notion of Orbis Terrarum became obsolete, so did the idea of Oceanus. The idea of the encircling river gave way to the notion of several seas connecting the newfound continents.

Today Europe is one of seven recognized continents, though its claim to that status is not founded in physical geography. Europe is not surrounded by water and it lacks any clear natural boundaries that would differentiate it from Asia. From the beginning, Europe was a floating signifier, attached to a variety of territories, expanding and contracting in scale, changing meaning according to the purposes of those who defined it. As the historian Hugh Seton-Watson observed: "The word 'Europe' had been used and misused, interpreted and misinterpreted in as many different meanings as any word in any language. There are many Europes. . . ." (Wilson and van der Dussen 1993, 8).

Europe is by no means alone in this respect. Most continents are mythical in the sense that they are names given to geographies whose external boundaries are rarely self-evident and whose internal divisions may be greater than those between them and other landmasses. Names like Europe, Africa, and America



Titian, *The Rape of Europa* (1559–1562). Oil on canvas. Isabella Gardener Stewart Museum.

are very good at conveying meaning, but not very useful in revealing the actual boundaries of populations, economies, or cultures. It is with good reason that geographers such as Martin Wigan and historians such as Kären Lewis have recently begun to talk about the “myth of continents” as standing in the way of a better understanding of the world at large. Yet we are unlikely to see the concept of continents disappear in the near future. The term *Europe* remains a very powerful signifier despite the fact that it has changed content and meaning so many times over the centuries.

Ancient and Medieval Notions

Europe was only a vague geographical expression to the Greeks, who identified it with the neighboring

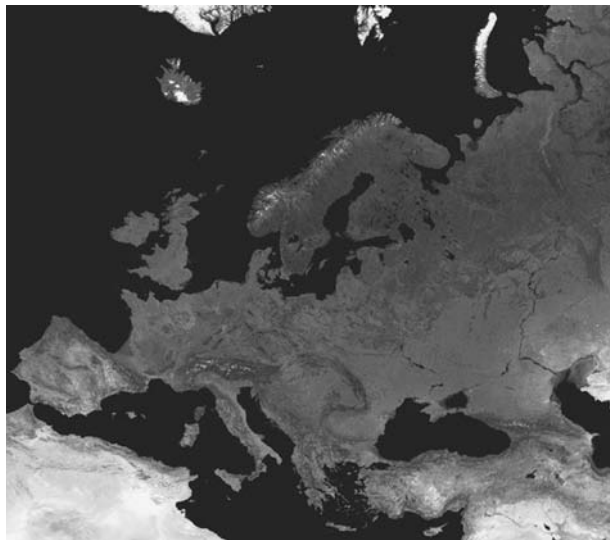
lands to their north and west, which were thought to share a similar climate and therefore whose people were thought to possess a civilized temperament conducive to self-government. The Greeks were fond of contrasting their own freedoms with the supposed despotism of their great enemies, the Persians, which by extension they attributed to all the peoples of Asia. Lands far to the north were thought to be cold and barbaric, while lands further south were considered too hot for human habitation.

The flexibility of the concept of Europe is due to the fact that it was not generated by any one state, nation, or culture. As was the case with the Americas and Australia, Europe was named by outsiders, one of the reasons the term has been so fraught with uncertainty and ambiguity ever since. Those peoples residing in



what the ancient Greeks called Europe did not know themselves as Europeans any more than the peoples living in Asia knew themselves as Asians or peoples of Africa called themselves Africans. They identified primarily with their locality. Even the Greeks did not think of themselves primarily as Europeans, for they identified with their particular city-states. They were Athenians and Spartans before they were Greeks,

much less Europeans. The term *European* was never used by them or by the Romans, another city-people who had no particular attachment to the territories that lay between cities. At the peak of Roman imperial expansion, the European, Asian, and African parts of the empire appeared to Romans to constitute the whole world. Identified with a language, a body of law, and a culture rather than a specific territory,



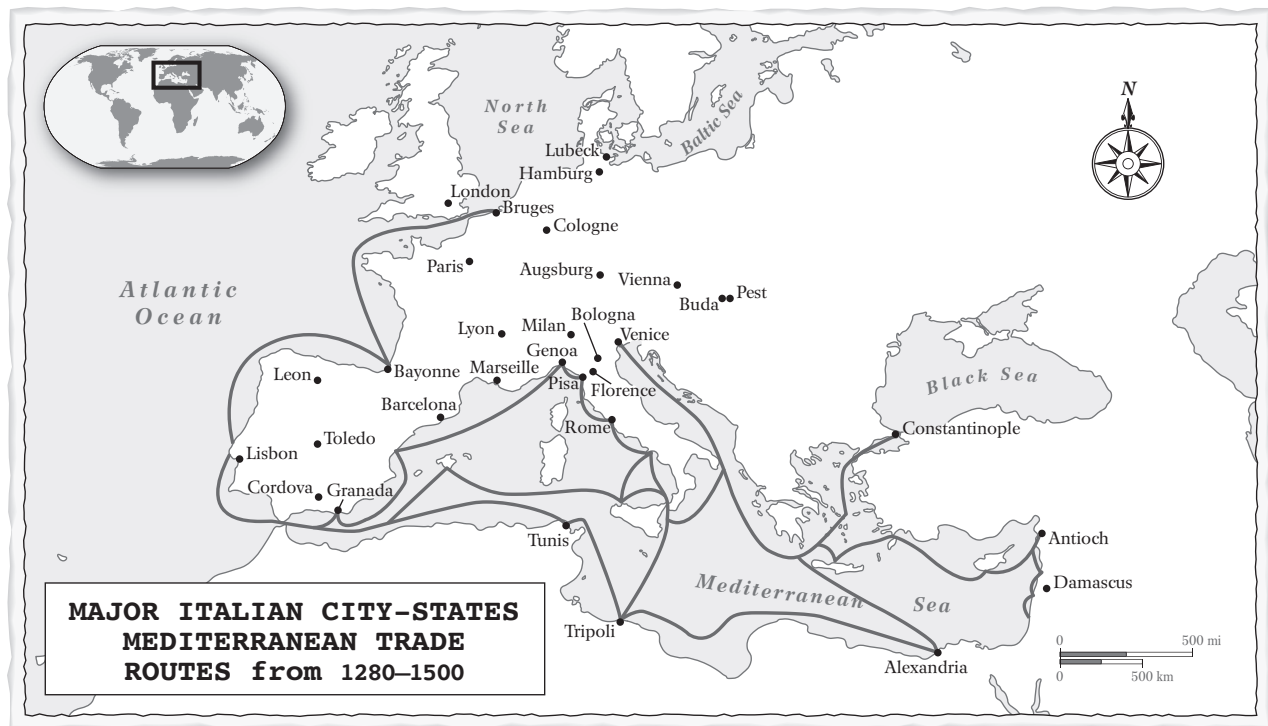
Europe seen by satellite on 13 November 2004. The name “Europe” originally pertained to the Aegean coast and only gradually came to be attached to its northern and western hinterlands, to the areas we now associate with the Balkans. NASA.

Rome saw itself as universal, a claim that was reinforced when its emperor declared Christianity to be the state religion in 313 CE. A world empire wedded to a world religion left no room for a separate European identity.

It was only in the wake of the collapse of the Roman Empire that what we now think of as Europe emerged as something more than a hinterland of the Mediterranean littoral. But the consolidation of this new Europe was slow in happening because, while the imperial state disappeared, the universal church did not. Europe remained a part of the larger entity known as Christendom, which included portions of Asia and Africa as well as Europe for the next several hundred years. Throughout the Middle Ages the ancient view of the world as an earth island surrounded by an impassable river held firm. Asia continued to be Christianity’s place of origin, and medieval Europeans continued to be spiritually and materially oriented toward the east, accounting for their designation of it as the Orient. Jerusalem was located on medieval world maps at the center of *Orbis Terrarum*. Asia, now open by way of the Silk Roads, was seen as a land of superior riches, while Africa too was the locus of European desires for gold and other luxury items. Europe itself was seen as peripheral.

During the Middle Ages Europe remained a geographical expression, without political unity, an economic center, or a strong sense of itself as a distinct civilization. Medieval Europe was anything but Eurocentric. Shown on its own maps as the smallest part of *Orbis Terrarum*, Europe saw itself as the western peninsula of Asia. Arabic maps of the Middle Ages showed it without distinct features, a reflection of how little it counted in the view of the great Islamic civilizations of the period. The Chinese, who viewed themselves as the center of the world, had no concept of Europe until European Jesuits introduced them to the idea in the late sixteenth century. Even then, they placed Europe on the margins of the Earth, a view shared by many Europeans of the time.

Apart from the Vikings, the peoples occupying that part of earth island known as Europe were not seafaring. They turned their backs to Oceanus and faced eastward spiritually and economically. When the Turks cut off overland access to the Orient in the fifteenth century, Europeans intensified their efforts to venture around Africa. Eventually they turned west to cross the Atlantic. It was only then, and very tentatively, that they began to think of themselves as Europeans. Not until they encountered one another overseas did Englishmen, Flemings, and Genoese begin to use the term “we Europeans,” as Francis Bacon did in 1620 CE. Only after establishing sea-based empires in the sixteenth century did Europeans reorient themselves from east to west. It was only then that they came to see history moving in a new direction. Christianity, born in Asia and nurtured during its first centuries in Africa, was for the first time seen as essentially a European faith. Henceforth, Europe would no longer subordinate itself to Christendom, but would define it. In the course of the sixteenth and seventeenth centuries Europe ceased to be a geographical expression and became a core region with its own peripheries. Having cut itself off from the Asian and African parts of the old Christendom, Europe emerged from the Age of Discovery smaller and more compact, but with an integral geography and a sense of itself both as a place and as an independent historical agent.



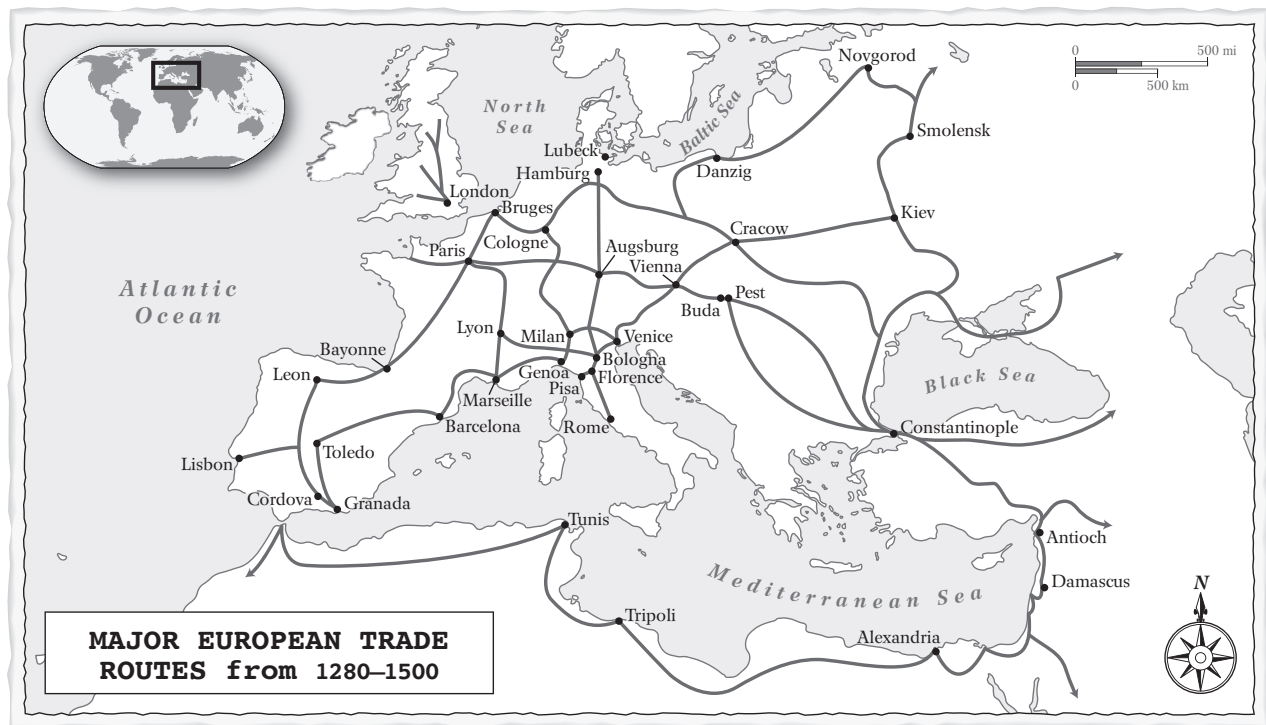
Europe Becomes a Continent

The notion of a European continent was born in the sixteenth century, but it took much longer before the peoples indigenous to it came to see themselves as Europeans. The idea of a secular Europe, as distinct from Christendom, first took hold among the elite classes. It arose in part out of balance-of-power diplomacy, which was itself a response to the religious wars of the seventeenth century, brought to an end by the Peace of Westphalia of 1648. While premised on the notion of internal division, thinking of Europe as a coherent system of competing territorial states—the origins of the Westphalian states system—was the first step toward separating it from the rest of the world. It took a much longer time for the idea of “European-ness” to trickle down to the lower classes, who were slow to exchange their local identities for national ones, and even slower to consider themselves Europeans.

But before Europe identified itself entirely with its continental geography, it saw itself as a civilization with boundaries that extended westward. European overseas expansion in the early modern period established the New World in the Americas, a series of what can be called “neo-Europes.” European settlers’ identification with the homeland was

so strong that it seemed in the eighteenth century that Europe might ultimately span the Atlantic. The conquest of Ireland was the first step in the construction of what the British saw as a greater Britain bridging the Atlantic. Spain established colonies in the Americas from the early sixteenth century onward; France and England established colonies there in the early seventeenth century. The colonial revolts of the later eighteenth century put an end to the idea of a pan-Atlantic Europe politically, but the imprint of European culture remained strong, encouraging the idea that it was, like Roman culture, universal, transcending geographical limits.

By the eighteenth century Europe identified itself with “civilization,” a term coined by the French politician Count Mirabeau in the 1750s. For the first time Europe shed its ancient sense of inferiority to Asia, especially to China. In the minds of Europeans, their culture had become the universal standard, available to all the world’s peoples willing to subscribe to its tenets. Defined initially as a loose package of values, techniques, and ways of life—the essence of the Enlightenment—the European concept of civilization became, by the nineteenth century, a kind of natural law of human progress, seen as spreading inevitably from Europe to the Americas and then to all the world.



In the nineteenth century Europe took on a clearer territorial definition, focused on its western regions. Following Napoleon's failure to impose continental political and economic unity, the thrust of the industrial and democratic revolutions in western Europe produced powerful economies within the boundaries of new nation-states. The evident differences between western European nations and the regions to the east and south became accentuated. Autocratic Russia now became Europe's "window on the East." During the New Imperialism of the later nineteenth century, Europeans' consciousness of their European-ness was again reinforced by encounters with non-European peoples, affirming the observation that "Europe did not simply expand overseas, it made itself through expansion" (Asad 2002, 220). European anthropology and ethnology supposedly gave scientific credence to Europeans' heightened sense of difference and superiority. Evolutionary conceptions of history, which organized the world's societies in terms of stages of development from savagery to civilization, reinforced Europeans' sense of being at the forefront of the march of progress.

In the eighteenth century Europe gained a geography; in the nineteenth century it acquired a history. The French Revolution had marked a decisive break with the past and triggered a quest for an historical

account that would provide Europeans with a sense of common origins. Political conservatives imagined the Middle Ages as laying the foundations of a unique European civilization, while radicals took Greek democracy as their starting point. The fact that neither the ancient Greeks nor medieval Christians would have recognized themselves as the first Europeans was no deterrent to this project. Despite the fact that both versions of the past were wholly anachronistic, they remain the favorite starting points for European history in schools and universities, distorting the past but providing a powerful myth of origins. Histories of Europe (and of the world) have tended to characterize it as being set apart from and superior to other world regions, cultures, and religions.

The notion of European superiority lost some credibility after the two world wars of the twentieth century, but the notion of one universal path of human development persisted. *Modernization*, a term more frequently used in the United States than in Europe, replaced *civilization* as the key word in the vocabulary of comparison. Although clearly biased toward Western interests and values, modernization was supposedly universal in character, knowing no geographical boundaries. Today, *globalization* is the term most frequently used to describe the supposedly

inevitable processes that will transform the whole world, erasing geographical boundaries and cultural differences. This is but the latest example of the universalizing tendency of European culture, now fortified by the wealth and power of the neo-European United States.

Contemporary Europe

There have been many Europes, and today we see yet another emerging. The entity that is unfolding before our eyes began as a core of western European nations defining themselves against the Soviet Union and its Communist allies. The Cold War division between West and East provided a powerful unifying factor, but since the collapse of Eastern European Communism beginning in 1989, Europe has had no obvious “other” to define its boundaries. Now that former Communist nations are joining the European Union, the boundaries of Europe are again in flux. Should Turkey become a member of the Union, the ancient boundary between Europe and Asia would also be breached, and the notion of absolute difference between the western freedom and eastern despotism would finally be renegotiated.

This is also a time when geographers and historians are reexamining the idea of the continent itself. After all, Europe has few natural boundaries and has always been defined by its relations with other world regions rather than by something internal to itself. What Europe means to Europeans has been inseparable from world history from the very moment that the Greeks adopted the origin myth of Europa to define themselves against the Persians.

It is therefore wholly appropriate that in this age of intense global interaction, when the identities of all the world's regions are being formed and reformed at their various points of contact, we recognize just how relative and contingent the notion of Europe has been from the very beginning. The accelerated speed of communications and travel has rendered old geographical boundaries largely obsolete, but it has by no means led to the abolition of a sense of difference. In

fact, the processes associated with globalization have accelerated the rate at which both internal and external differences are produced and institutionalized. These differences are less likely to be national than regional and subregional. Even as they construct a larger political-economic unit in the form of the European Union, Europeans seem to be moving toward a new localism, emphasizing indigenous languages, cultures, and traditions. Today's typical European has multiple identities, those of locality, region, nation, continent, and for some, the world at large. These are often in tension and can sometimes flare into conflict as has happened in the Balkans following the collapse of Communism and the break up of the former Yugoslavia.

Is it time to abandon the notion of Europe? We may wish to move away from a Eurocentric history, which assumes a homogeneous Europe with fixed boundaries and a single point of origin, but we cannot ignore the idea of Europe, which has been so vital not just in European history but in the histories of all the peoples who have come into contact with Europeans. The idea of Europe is still associated with universal values in the minds of many people, including Europe's enemies. Europe no longer endeavors by force to impose its version of civilization on the world, but European influences can be detected everywhere one looks. Together with the equally powerful symbolic concepts of Asia, Africa, and America, Europe as a signifier remains fundamental to any understanding of the world at large. World history cannot afford to be Eurocentric, but it runs an enormous risk if it neglects the ways in which the idea of Europe has, for better and for worse, shaped and been shaped over centuries of contacts with other world regions.

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See also Afro-Eurasia; Art—Europe; Art—Russia; Berlin Conference; British East India Company; British Empire; Caesar, Augustus; Caesar, Julius; Catherine the Great; Celts; Charlemagne; Charles V; Christian Orthodoxy; Churchill, Winston;



Columbian Exchange; Columbus, Christopher; Congress of Vienna; Crusades, The; da Gama, Vasco; Darwin, Charles; Descartes, René; Détente; Dutch East India Company; Dutch Empire; Early Modern World; Elizabeth I; Enlightenment, The; Eurocentrism; Europe, Eastern; European Expansion; European Union; Fascism; Feudalism; French Empire; Galileo Galilei; German Empire; Greece, Ancient; Gregory VII; Guilds; Hanseatic League; Henry the Navigator; Herodotus; Hitler, Adolf; Holocaust; Homer; Interwar Years (1918–1939); Isabella I; Joan of Arc; Lenin, Vladimir Ilyich; Locke, John; Luther, Martin; Macedonian Empire; Machiavelli, Niccolò; Magellan, Ferdinand; Manorialism; Marx, Karl; Mercantilism; Migration, Indo-European; Napoleon; Napoleonic Empire; Newton, Isaac; North Atlantic Treaty Organization (NATO); Ottoman Empire; Parliamentaryism; Peter the Great; Plato; Polo, Marco; Portuguese Empire; Protestantism; Raynal, Abbé Guillaume; Renaissance; Revolution—France; Revolution—Russia; Roman Catholicism; Roman Empire; Russian Soviet Empire; Smith, Adam; Socrates; Spanish Empire; Stalin, Joseph; Thomas Aquinas, Saint.; Thucydides; Trading Companies, Iberian; Trading Patterns, Ancient European; Trading Patterns, Eastern European; Trading Patterns, Mediterranean; Treaty of Versailles; Urban II; Victoria; Viking Society; Warfare—Europe; Warsaw Pact; World War I; World War II

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Europe, Eastern

Historians have difficulty defining Eastern Europe, questioning whether it should be considered a fundamental piece of Europe or part of the western frontier of Asia. Overlapping religions, economics, and cultural themes have led some to consider these countries “less European” than other European countries. Experts estimate that four more decades may be needed for Eastern Europe to catch up economically with its western neighbors.

Eastern Europe has been termed the heart of Europe and Europe’s suburb—both the crossroads of the continent and the borderland of Western civilization. The debate over Eastern Europe’s proper definition—an integral part of Europe or the western frontier of Asia?—illustrates the region’s historical place as a march land: an area where religions, empires, economic spheres, and cultural zones have overlapped and conflicted. Some view the term *Eastern Europe* as a relic of the Cold War division of Europe—hence its use as a formal capitalized term here, as opposed to *western Europe*, which is meant more as a geographic location. Other designations have also been proposed. *Central Europe*, which suggests the region’s vital contributions to Europe, is proposed for the region as a whole or in part (usually Poland, the Czech Republic, Slovakia, and Hungary). And because the term *Balkans* connotes backwardness and ethnic strife, *Southeastern Europe* is offered as a designation for the lands south of the Danube. In these terms, we see the disputed notions of the region: is it an integral part of democratic, capitalist Europe, or an area that is “less European”—culturally, economically, politically—than its western neighbors?

Defined as the nineteen post-Communist states between the Russian Federation and the German and Italian states (including six former Soviet republics and seven states of the former Yugoslavia), Eastern Europe is a region of 190 million people and over thirty ethnolinguistic groups. Diversity of languages, cultures, and religions is a primary characteristic of this region, one that has had both positive influence on the region’s history and, as shown in the wars of the 1990s in Yugoslavia, devastating consequences.

Geography and Population

Eastern Europe has no definite geographic boundaries. The North European Plain stretches from northern France across Poland, the Baltics, and Belarus, and into the Eurasian steppe. A spine of mountains—running from the Alps, through southern Germany and the Czech lands, to the Carpathians—separates the North European and Hungarian plains. South of the Danube, crisscrossing chains of mountains divide the region into remote valleys. Coastal areas are limited. The principal navigable rivers—the Oder, Vistula, Dnieper, Dniester, and Danube—flow to enclosed seas (the Baltic and the Black). South of the Danube, there are no major waterways, and the Adriatic coast is separated from the arid interior by the Dinaric Alps.

Riverine and maritime transportation have not been decisive factors in Eastern Europe’s history, compared to the western part of the continent; the overland movement of peoples, goods, and ideas has been the essential factor in the region’s development. As the trunk connecting the European promontories to Eurasia, Eastern Europe was the path of migration



for Germanic and Hunnic tribes in the fourth and fifth centuries CE; Bulgars and Slavs in the seventh and eighth; Magyars in the ninth; and Germans and Jews, migrating eastward, in the twelfth and thirteenth centuries. In the Middle Ages, major overland trade routes crossed Eastern Europe, connecting the German and Italian states with Constantinople and the Baltic Sea. And the region has been devastated by the epic conflicts of western Eurasia, from the ravaging of Attila in the fifth century to the Nazi–Soviet campaign in the twentieth.

The lands of Eastern Europe have offered a variety of natural resources. The plains of Poland, Hungary, and Ukraine are areas of abundant agricultural production, supplying grain for centuries to western Europe, Constantinople/Istanbul, and Moscow. During the medieval centuries, mining was an important activity throughout the region, with gold, silver, copper, tin, iron, and salt extracted from the mountains of the Czech lands, Slovakia, Transylvania, Bosnia, and Serbia. In the nineteenth and twentieth centuries, coalfields were mined in the Czech lands, Poland, and Ukraine, and oil and gas deposits were tapped in Romania and Ukraine.

Although some of these mineral and agricultural resources were processed and consumed within the region, for the most part Eastern Europe has produced raw materials for neighboring states. A principal reason for this disparity in consumption was the low population density in Eastern Europe. In the eleventh century, the estimated population density of Italy was 24 people per square kilometer, and in France, 16 people per square kilometer. In the Czech lands, in contrast, population density was only 7.8 people per square kilometer; in Poland, 5 people per square kilometer. By the late Middle Ages, when cities were emerging as economic and cultural centers in Western Europe, only a handful of cities in Eastern Europe had populations over 10,000: Prague, Wrocław/Breslau, Gdańsk/Danzig, Krakow, Kiev, and Smolensk. Contemporary capitals such as Ljubljana (Slovenia), Zagreb (Croatia), and Sofia (Bulgaria) had populations under 25,000 until the early twentieth century. At that time, population density across much

of Eastern Europe was still less than 100 people per square kilometer. In most areas south of the Danube, it was less than 50 people per square kilometer. Marked increases in population and urbanization did not occur until after 1950.

Other demographic indices further illustrate Eastern Europe's standing as a march land. The British demographer John Hajnal has drawn a line demarcating the "European Marriage Pattern" through Eastern Europe, from St. Petersburg to Trieste. To the west of that line, Hajnal and others have observed, medieval Europeans married later than people in most other world regions (the average age of first marriage was in the mid-twenties, while some 10 to 20 percent of people remained single) and established single-family households. To the east of that line, and in most areas of the world, marriage was nearly universal, couples married at a young age (late teens to early twenties), and multifamily households were organized along patrilinear lines. In the lands that Hajnal's line crosses (the Baltics, Poland, the Czech lands and Slovakia, Hungary, Slovenia, and Croatia), patterns of medieval marriage and household composition followed both western and eastern models.

This same line also serves as a boundary in mapping indices of economic and social modernization: in the mid- to late 1800s, levels of gross domestic product (GDP), industrial output, and density of rail lines were far higher to the west of the line; by the 1930s, there was also a large disparity in literacy rates and infant mortality. As with Hajnal's mapping of the European Marriage Pattern, areas of Poland, Slovakia, Hungary, Slovenia, and Croatia were a transitional zone. In terms of demographic and economic measures, the Czech lands in the 1930s were most like western Europe: the literacy rate was 96 percent, and over half the population lived in urban areas and was engaged in industrial or commercial activity. Furthest removed from western European indices were Bulgaria, Albania, and the southern regions of Yugoslavia. In Albania, in the 1930s, only 12 percent of the population lived in urban areas, and the literacy rate was only 30 percent. In her studies of Albania and Montenegro from the early 1900s, the anthropologist

A statue commemorates Communism in Poland, 1985. Many such memorials, once common in Communist Eastern Europe, were torn down after the collapse of the Soviet Union in 1991.



M. E. Durham observed patriarchal tribal societies, a justice system based on blood vengeance, and cultural practices that blended Islam and Catholicism with belief in vampires and the evil eye.

Economic Development

Eastern Europe offers a classic example of a peripheral economic zone, a region that is dependent upon more populous and developed areas—in this case, for the export of raw materials and the import of capital and technology. Eastern Europe has been in a peripheral relationship not only to the western European core, but also to Constantinople/Istanbul and Moscow. At various times, these imperial powers competed with each other or with western European states for control of the region's resources. In the fifteenth and sixteenth centuries, the Ottoman Turks vied with Venice for silver and other resources in Bosnia and Serbia, leading to a series of wars. The Ottomans were forced to surrender the agricultural areas of Ukraine and the Danube delta in wars with Russia in the 1700s. And imperial and Soviet Russia sought to offset Austrian and German influence in southeastern Europe and Poland in the nineteenth and twentieth centuries.

A consequence of these overlapping economic interests is that, from the later medieval period through the twentieth century, Eastern Europe's natural resources have been extracted largely for the benefit of its neighbors to the west, east, and south. After

the Ottoman conquest of Constantinople in 1453, foodstuffs from Ukraine and metals from Bosnia and Serbia fueled the capital's rebuilding. North of the Danube, the Austrian Habsburgs and their German bankers gained control of the mineral resources of the Czech lands and Slovakia in the sixteenth and seventeenth centuries. The word *dollar* is derived from *Joachimsthaler*, a silver coin minted in present-day Jachymov, Czech Republic, that the Habsburgs circulated in the seventeenth century. This export of natural resources did generate some prosperity in the region. But, for the most part, because of its dependence upon or exploitation by neighboring states, the economic development of Eastern Europe was stunted. In the late medieval period, landowning nobles in Poland and Hungary seized upon high profits to be gained in the export of grain and cattle to German and Italian markets. This export of foodstuffs resulted in the gradual transformation of the agrarian system from a tenant economy, in which peasants paid rent to the lords, to a feudal structure that restricted peasant mobility and obliged them to work the lords' estates. Thus, at the same time parts of western Europe transitioned from a feudal to a market-based economy, Eastern Europe experienced a "second serfdom." Economic power remained in the hands of the landed nobility, who invested their profits in manors and luxury goods.

Banking, industry, and commerce were limited in the late medieval and early modern periods. Jews,



Armenians, and Germans scattered in the region controlled most commercial and industrial activities. During the fourteenth and fifteenth centuries, caravans along the trade route between Akkerman on the Black Sea and L'viv/Lwów (Ukraine) were always under the direction of Armenian merchants. Merchants in L'viv—whether Armenian, Jewish, German, Tatar, Polish, or Italian—traded wheat, fish, caviar, and cattle for pepper, cotton, and silk. Slaves were also important commodities: between 1500 and 1650, some ten thousand slaves—seized in Poland, Ukraine, and southern Russia—were exported each year to Istanbul.

Lacking a prominent middle class and domestic markets, Eastern Europe's economy was slow to industrialize. By the late 1800s, isolated areas of industrialization had emerged: the Czech lands were an important manufacturing area in the Habsburg Empire; the region around Lodz, Poland, produced 40 percent of the Russian Empire's coal and nearly a quarter of its steel; and Budapest was one of the world's largest centers for milling flour. For the most part, however, industrialization was limited. In the 1930s, over 75 percent of GDP in Albania, Bulgaria, Lithuania, Romania, and Yugoslavia was agriculture; after Czechoslovakia, the largest industrial sector was in Hungary, where industry was only 24 percent of

GDP. Development of industry, transportation, and communications in the late nineteenth and early twentieth centuries was generated largely through foreign investment. Austrian, German, and French firms owned factories, railroads, and shipping lines in the region. Foreign companies owned 95 percent of Romanian oil deposits. The other driving force behind the region's economies was state interference in or direction of development. Thus, the economic central planning of the post-World War II Communist regimes was not a great departure from the pattern of preceding decades. Under the Communist regimes, the Eastern European economies were tied to each other and to the Soviet Union in the COMECON trading bloc. Industrialization advanced rapidly in the region, although at a steep cost: resources and finished goods were exported, below market value, to the Soviet Union, while factories scarred the landscape of the region, particularly the northern Czech lands, southern Poland, and Romania.

Frontiers between Religions

The indistinct boundaries of the Catholic patriarchates of Rome and Constantinople also met in Eastern Europe, and missionaries from both cities brought Christianity into the region. Both the Roman pope

and the patriarch in Constantinople recognized the early mission of the brothers Cyril (c. 827–869) and Methodius (d. 885). Sent from Constantinople, Cyril and Methodius carried the Christian faith north of the Danube, together with a Slavic literary script to be used for liturgy. Even in areas that were loyal to Rome after the Great Schism of 1054, this liturgy and script, known as Glagolitic, continued to be used: in Poland and the Czech lands, the Slavic rite persisted until the twelfth century; in Croatia and Dalmatia, Glagolitic was the script for liturgical texts into the twentieth century. This script became the basis for the Cyrillic alphabet used today in Russia, Ukraine, Serbia, Bulgaria, and other nations.

Following the mission of Cyril and Methodius, competition arose between the Latin church, with its German allies, and the Greek church, which was backed by Byzantine power. Local princes looked both to Rome and Constantinople. Duke Borivoj (d. 889), founder of Prague, was baptized into the Slavic rite, while the Bulgarian czar, Boris I (d. 889), exchanged letters on theological questions with the Roman pope. Their choices, and the success of one rite or the other in a particular principality, resulted more from political exigencies than religious conviction. The expansion of the Roman church in the Czech lands and Poland during the ninth and tenth centuries was due largely to German bishops and the emperors Otto I and Otto III. In 917, the patriarch in Constantinople established an independent patriarchate for the Bulgarian church. Although independent, this new church followed the Slavic rite and maintained loyalty to Constantinople—thus remaining free from Rome. This competition between the ecclesiastical authorities, and local princes' strategies of playing Rome off against Constantinople, continued after the Great Schism of 1054 separated the patriarchates into the Roman Catholic and Orthodox churches. In the fourteenth and fifteenth centuries, the two churches vied for converts in the last pagan areas of Europe: an arc from Lithuania through Belarus and Ukraine to the Black Sea. At the same time, in mountainous Bosnia, a church emerged that was independent of the two authorities and combined elements of both

Latin and Slavic-Greek traditions. By the mid-1400s, though, this Bosnian church was broken, largely through the efforts of Franciscan missionaries, and both Catholic and Orthodox churches competed for its former adherents.

The religious map of Eastern Europe was further colored by migrations, invasions, and reform movements of the late medieval and early modern periods. Ashkenazic Jews, speakers of Yiddish, migrated from the Holy Roman Empire into Poland in the twelfth through the fourteenth centuries, and into Lithuania, Ukraine, and Romania in the fifteenth through seventeenth centuries. Of the 7.5 million Jews living in Eastern Europe in 1900, 70 percent lived in these areas. The Sephardic Jews of southeastern Europe, distinct from the Ashkenazim in custom and language, were descendents of the Jews expelled from Spain in 1492 and welcomed into the Ottoman Empire. The Sephardim numbered 193,000 in 1900, most in cities such as Sarajevo and Salonika. The Ottoman expansion into southeastern Europe in the fourteenth and fifteenth centuries also brought Islam into the region. According to the Ottoman census of 1520–1530, Muslims were 18.8 percent of the population in the empire's European lands. Muslims also congregated in towns: the population of Sofia, for instance, was over 66 percent Muslim, while the surrounding district was only 6 percent Muslim. These Muslims included Turkish officials, soldiers, and artisans, as well as converted Greeks, Albanians, and Slavs. Conversions were due largely to Islam's adaptability to local folk religion, rather than firm conviction, and many Muslims of southeastern Europe maintained ties to Christianity. In some rural areas, peasants went to the mosque on Friday and church on Sunday.

The Reformation and the Counter-Reformation further stirred the region's religious waters. Martin Luther acknowledged the influence of early reformer Jan Hus (c. 1372–1415), a Czech priest and critic of Catholic doctrine. Although the church executed Hus as a heretic, Catholic armies failed to suppress his followers in the Czech lands. With the ground prepared by the Hussite challenge, branches of the Protestant

Reformation found adherents in the Czech lands, as well as in other areas of Eastern Europe, in the early 1500s. Lutheranism advanced into the Czech lands, Slovenia, and Poland in the 1520s. The Reformed (Calvinist) movement spread rapidly in Hungary and the Ottoman vassal state of Transylvania. Calvinism also gained adherents in Poland and Lithuania, where Reformed universities were founded in the 1620s. Anabaptist and Anti-Trinitarian (Unitarian) sects also took root in Poland, Lithuania, and Transylvania. In Transylvania, Prince István Báthory (reigned 1571–1586) recognized the Unitarian, Catholic, Lutheran, and Reformed faiths as accepted religions of the state. This toleration was unusual in Eastern Europe—and in Europe as a whole. By the late 1500s and 1600s, in the Czech lands, Poland, Hungary, and Slovenia, Jesuits and Catholic nobles succeeded in reestablishing Catholic dominance and outlawing Protestantism throughout much of Eastern Europe.

Political History

During the medieval period, independent kingdoms in Eastern Europe rivaled states to the west and east. Under Czar Simeon (reigned 893–927), Bulgaria dominated the lands south of the Danube, from the Black Sea to the Adriatic. During the reign of Charles IV as Holy Roman Emperor (reigned 1346–1378), Prague became the leading city of the region, and the site of the first university north of the Alps. And the Hungarian court at Buda, under Matthias Corvinus (reigned 1441–1490), was a center of art and learning in the early Renaissance. In the early modern period, however, the independent states of Eastern Europe ceased to exist, as the region came under the political control of rival empires. The threat of Protestantism in the Czech lands and the Ottoman Turks in Hungary led to the consolidation in the early seventeenth century of an empire ruled by the Catholic Habsburgs. In 1683 the Ottoman Turks' final advance into Europe was halted at the Habsburgs' seat, Vienna, and, less than two decades later, the Habsburgs had seized Hungary and Transylvania

from the Ottomans. At the same time, new expansionist powers were emerging in the east (Russia) and the northwest (Prussia). In the early 1700s, under Peter the Great (Peter I, reigned 1682–1725), Russia pressed south into Ukraine; and at the end of the century, under Catherine the Great (Catherine II, reigned 1762–1796), the empire partitioned the territory of the weakened Polish kingdom among Habsburg Austria, Prussia, and itself. Following the Napoleonic wars, these imperial powers—Austria, Prussia, Russia, and the Ottoman Empire—claimed all the lands of Eastern Europe.

Yet, at the same time as the neighboring powers culminated their advance into Eastern Europe, local movements began to challenge imperial power. Over the course of the nineteenth century, these initiatives developed into mass nationalist movements. Motivated by ideas imported from western Europe—the French idea of the nation as a source of sovereignty and the German conception of the nation as a community united by language and culture—regional elites assembled the components of national communities: codified languages, books and periodicals in those languages, national histories, and institutions for education and culture. From the mid-nineteenth century, national movements demanded linguistic and educational rights and administrative autonomy. Violent confrontations with imperial authorities erupted in several areas: Poland (1830, 1846, 1863), Hungary (1848), Bosnia (1875), Bulgaria (1876), and Macedonia (1903). While the Russians suppressed Poland and the Austrian Habsburgs granted autonomy to Hungary, the emerging national movements of southeastern Europe embroiled the region into the early twentieth century. Ottoman weakness and the scheming of the independent states of Greece (independent in 1830), Serbia (1878), Romania (1878), and Bulgaria (1878) stoked the incendiary situation in the region. Bloody wars in 1877–1878 and 1912–1913 and other economic and diplomatic crises drew the major European powers—Austria-Hungary, Britain, and Germany—into a complicated tangle in the region. A Serbian student's assassination of the Habsburg heir, Archduke Franz Ferdinand, on 28 June

1914, precipitated the unraveling of that tangle and led to the start of World War I.

World War I brought the creation of new independent states in Eastern Europe (Estonia, Latvia, Lithuania, Poland, Czechoslovakia, and Yugoslavia), but the process of building ethnically homogenous polities out of the former empires continued throughout the twentieth century. “Ethnic cleansing,” a term that entered the universal lexicon during the wars of the former Yugoslavia (1991–1999), has been a stain on the region’s history since the wars of 1877–1878 and 1912–1913, when Slav, Romanian, and Greek armies expelled thousands of Muslims. The expansion of Nazi German military power into the region, followed by the Soviet Union’s devastating victory, accelerated the segregation of national groups. In addition to the 4.5 to 5.4 million Jews of the region who perished at the hands of the Nazis and their local accomplices, another 9 to 10 million people—mostly Poles, Belarusians, and Ukrainians—were killed during the German advance of 1939–1941. The Soviet regime deported some 1.5 million Poles and Ukrainians to Asia, while 5.5 million people from throughout the region were forced into labor in Germany. Following the war, over 18 million people were resettled, including over 8 million Germans expelled from Poland, Czechoslovakia, and Hungary.

After the collapse of the Communist regimes in 1989 and 1991, the efforts at creating nation-states continued, with the establishment of independent post-Soviet republics (the Baltics, Belarus, Ukraine, Moldova) and the peaceful split of Czechoslovakia in 1993. The conflicts in the former Yugoslavia (1991–1999) showed that nationalist identities, when mixed with economic decline and political provocation, remain a deadly force in the region.

The Twenty-First Century

Over two decades after the collapse of the Soviet bloc in Eastern Europe, the region is again a march land of economic, political, and cultural spheres. In 2004 and 2007, ten former communist states join

the European Union. Yet the former Yugoslav states of Bosnia, Macedonia, and Kosovo remain unstable after the wars of the 1990s, and the former Soviet republics of Moldova, Ukraine, and Belarus are beset by economic and political problems. Eastern Europe remains an exporter of natural resources. The principal resource now is labor: industrial workers find jobs throughout western Europe, while educated young people leave for universities—and jobs—in western Europe and North America. Meanwhile, the financial crisis that began in late 2007 revealed how incomplete and fragile were the economic changes of the immediate postcommunist period. The road of economic and political transformation is long. According to estimates, even the region’s most advanced countries (Poland, Hungary, Czech Republic) will not reach western European economic levels for another three to four decades.

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See also Europe; Eurasia, Inner; Russian Soviet Empire

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European Expansion

Contrary to many popular conceptions, the expansion of European culture actually predates the voyages of Columbus by more than a millennium. From the Greeks, Romans, and Vikings to the nineteenth century, European expansion has typically pursued certain goals: economic prosperity, increased trade, new lands for settlement, and religious converts.

The dominant force in shaping our global society has been the expansion of European society and culture throughout the world following the voyages of Columbus. Some have seen the explosive movement of Europeans throughout the world as a consequence of centuries of repression and cultural darkness that had kept Europeans from exploring the world beyond Europe. One of the most striking examples of that perspective is Washington Irving's biography of Columbus, in which Irving identified the expansion of Europe as one of the fundamental elements of modernity and Columbus as the first modern man, the one who cast off the blinders that had limited European development.

The Ancient World

The expansion of Europe and of European culture has a history that long precedes Columbus's first voyage. The post-1492 expansion of Europe built upon the expansion of the previous five centuries and reflects a characteristic of ancient European culture as well. The ancient Greek city-states expanded, establishing colonies in Sicily and southern Italy, to which they brought Greek cultural values and practices. The conquests of Alexander of Macedon (Alexander the

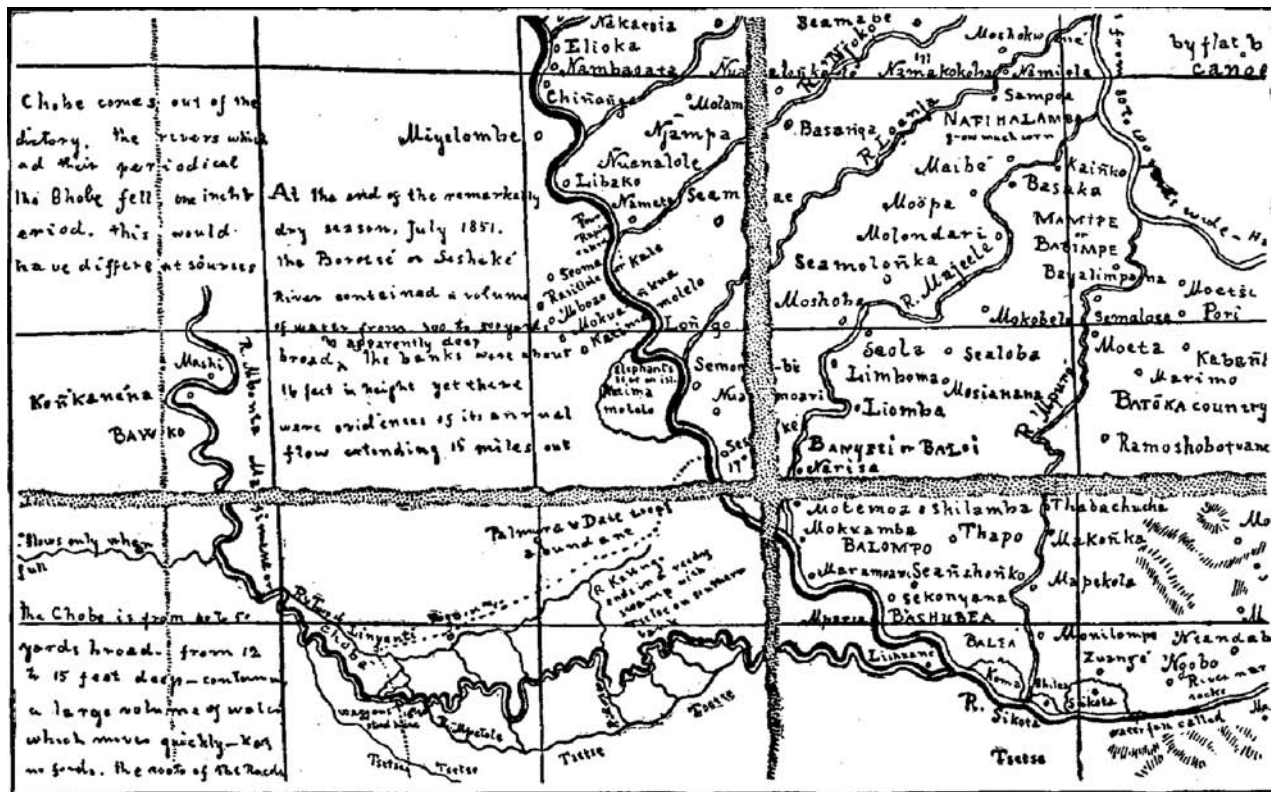
Great, 356–323 BCE) spread Greek cultural values throughout much of the Middle East and then into the Roman world. According to his biographer, Arrian, Alexander came to see his conquests as the beginning of a world-city, a worldwide community within which all mankind would live in harmony under the guidance of the Greeks.

The Roman Empire also generated a wide cultural community as it expanded from its home in central Italy. Its influence extended well beyond the formal boundaries of the empire, as the barbarian societies along the frontiers adopted elements of Roman culture in the course of their contact with Roman soldiers and merchants.

Greek and Roman expansion was not worldwide, however. The Asian goods that the Romans desired traveled to Rome via ancient trade routes, so that there was no need to seek direct access to the Asian markets. Although Alexander of Macedon was said to have believed in some kind of world community, this was not a concept of much significance in the ancient world. Stoic philosophers did have some sense of a universal human community, but this was the view of a small elite and had little practical consequence.

Medieval Christendom Expands

The beginning of the great era of European overseas expansion associated with Columbus is sometimes linked to the desire to have direct access to the markets of the East, and the creation of a world system beginning in the sixteenth century is often discussed in primarily economic terms, a world economic system. But the desire to preach the Christian Gospel to all mankind was another spur to expansion. The



Christian missionaries from Europe accompanied merchants and adventurers around the world but often went off to explore on their own. Shown here is a section of the map David Livingstone used during his travels in Africa.

Christian conception of mankind as a single family descended from Adam and Eve and redeemed by Christ motivated missionaries to spread beyond Europe and into regions inhabited by infidels. Christians, echoing the Stoics, could conceive of a universal community embracing all mankind, but they envisioned an institutional structure provided by the Church.

The role of Christianity in the expansion of Europe stretches back to the Byzantine imperial government's support of missionary efforts to convert the Goths in the third century CE. From the imperial point of view, such an effort was in keeping with the older tradition of acculturating barbarians to the Roman way of life. The expansion of Christianity could thus go hand in hand with the expansion of the Byzantine Empire, a kind of relationship that was to have a long history.

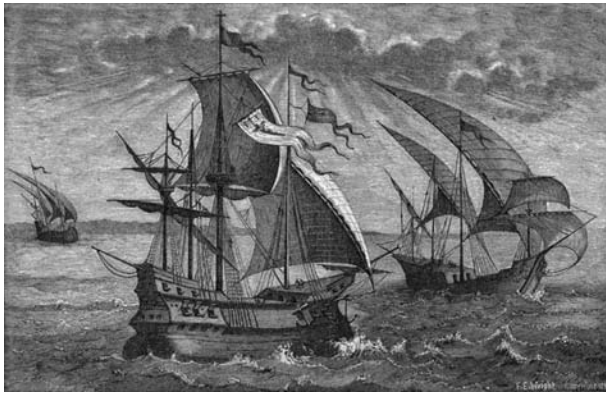
The Latin church in the West was slower in getting involved in expansion beyond the boundaries of the Roman Empire. Initially it was individuals who went forth to preach the Gospel in the lands of the barbarians. Saint Patrick (fifth century), for example, went

to preach to the Irish, a people who had never been subject to the Romans.

The first pope to authorize a mission to a non-Christian society was Gregory I (c. 540–604) who sent a team of missionaries to England, where Christianity had virtually died out after having been introduced during the Roman occupation of the island. The missionaries were followed by other figures who brought England into regular contact with the continental world. During the eighth and ninth centuries, missionaries from Ireland and from England in turn went to the borders of the Carolingian Empire with the support of various Carolingian rulers and with papal blessing to preach to the Germanic peoples, bringing them into the church and under Carolingian domination. This union of spiritual and temporal goals was to be a characteristic of subsequent European expansion.

The Internal Colonization of Europe

With the weakening of Roman power and the population decline that accompanied it, only churchmen



Columbus's three ships: the *Nina*, the *Pinta*, and the larger *Santa Maria*. F. E. Wright, New York Public Library.

were at all concerned with expansion until about the middle of the tenth century. The end of the long series of barbarian assaults on the Roman and Carolingian societies and the beginning of a period of warmer climate from about 950 to 1300 contributed to population growth that reignited pressures to expand. This period began with what the historian Archibald Lewis described as the colonization of the internal frontier of Europe. Forests were cut down and new farming villages and trading towns established. Many of the techniques later used to organize migration to new frontiers on the edge of Christendom and to establish new communities overseas were first developed in the course of this process of internal European colonization.

From the tenth to the fourteenth century Europeans moved aggressively in all directions with varying degrees of success. To the east, the twelfth- and thirteenth-century crusades to regain the Holy Land ultimately failed, but German expansion eastward into the lands of the Slavs that had begun in the early tenth centuries was successful. In the north, during the tenth and eleventh centuries Christian missionaries succeeded in converting the Scandinavians, bringing them into the European Christian cultural orbit, eventually leading to the settlement of Greenland from the eleventh century and the establishment of Christian churches there. Around 1000, Scandinavian adventurers even reached the mainland of North America. To the west and south, the Portuguese and the Spanish were pushing the Muslims back, and further to the west, the English were advancing into the Celtic lands that bordered England, reforming

the Celtic branch of Christendom and bringing those churches into conformity with Roman practice.

Medieval thinkers developed legal justifications for expansion and conquest that supplemented the military and missionary justifications; these were later used during the Spanish conquest of the Americas in the sixteenth and seventeenth centuries. First developed in the course of Christian encounters with the Muslims and the Mongols during the thirteenth century, these legal justifications forced those who supported the crusades and other forms of armed force against nonbelievers in the process of expansion to justify their actions in legal terms.

During the fourteenth and fifteenth centuries, as the climate turned colder and the Black Death reduced the European population by at least one-third, and as the Ottoman Turks moved further up into the Balkans, dominating more of the Mediterranean, the era of medieval expansion slowed but did not entirely stop. At the western edge of Europe, the Portuguese continued to have a strong interest in expansion as they sought to find a sea route to the markets of Asia that would circumvent the traditional Muslim-controlled routes through the Near East. This required establishing settlements to refit and resupply ships that would make the long journey to the East. The Portuguese were also anxious to protect themselves from Muslim counterattacks and were interested in reconnecting with Christian communities of Asia that, it was thought, might join in a last great crusade. Finally, the Portuguese were interested in converting the non-Christians of the East to Christianity.

Europeans Expand Overseas

All of these motives for a renewal of European expansion, this time well beyond the geographical boundaries of Europe, appear in the literature of the fifteenth century. Portuguese expansion into the Atlantic and along the west coast of Africa, popularly associated with Henry the Navigator (1394–1460), led to the rediscovery of the island chains of the Atlantic, Canary (1340–1341), Madeira (1418–1419), Azores (1427–1431), and Cape Verde (1455–1457), and to

the establishment of trading posts on the coast of Africa. Portuguese interest in finding a water route to Asia was encouraged by Genoese financiers, merchants, and seamen who had suffered financially when the Muslims had conquered the Genoese settlements along the Black Sea.

The Age of Columbus

It is, then, no coincidence that it was an ambitious Genoese sailor who had lived and worked in Portugal who initiated the great age of European expansion that eventually led to the development of an international society, if not a true world community. In addition to the motives for expansion mentioned earlier—a desire to find new routes to Asian markets, to preach the Gospel to nonbelievers, and to find Eastern Christian communities to join in a last crusade, Columbus sought personal social and economic advancement. He bridged the two periods of European expansion, employing the motives and experience of medieval expansion in the course of his encounter with the New World.

Columbus's great significance is that he began the process that opened up not only water routes to the already known Asian world but also to entirely new worlds, the Americas and the Pacific Ocean in particular, as well. The novelty of these new worlds was not, however, initially appreciated. Until his death Columbus claimed to have reached the outer edge of Asia, a belief rooted in the medieval theory that the surface of the Earth was almost entirely land and that the Ocean Sea was a narrow band of water, rather like a river, separating the various landmasses. That being the case, the islands of the Caribbean would have to be the outer edge of Asia. Likewise, Columbus initially identified several plants found in the Americas with the spices associated with Asia, although later he changed his mind. From 1492 to about 1600, Europeans tended to perceive the New World in terms derived from the experience of the Middle Ages, approaching the peoples of the Americas as if they were at a stage of development similar to that of the barbarians who had invaded the Roman Empire.

The European discovery of the Pacific Ocean by Vasco Nuñez de Balboa in 1513 and then the circumnavigation

of the Earth by Magellan's fleet (1519–1522) stimulated the reexamination of European theories about the surface of the Earth and the peoples who lived there. One result was the realization that the Ocean Sea was not an obstacle to direct access to Asia but a highway that would enable Europeans to sail to all parts of the Earth, a viable alternative to traveling overland. A second result was a growing realization that there existed a wide variety of peoples and societies throughout the world, ranging from the most primitive to the most sophisticated. This experience challenged traditional biblically based theories about mankind, eventually leading to the development of anthropology.

A European World Order

The long-term consequences of the European encounter with the rest of the world can be illustrated graphically in several ways. By 1763 European powers were rising stars among the great imperial powers that politically dominated, at least nominally, the bulk of the globe. Seen in economic terms, the European encounter with the rest of the world generates a map showing the major trade routes that, when taken together, outline what the sociologist Immanuel Wallerstein has labeled the modern world system, a series of cores and peripheries linking all parts of the world in a single economic order.

Less easy to illustrate graphically is the interpenetration of cultures that was also occurring. In physical terms, this included the importation of a wide variety of products into Europe from elsewhere, products ranging from the traditional Asian spices and silks to such new items as tobacco and potatoes from the Americas. This latter was part of what the historian Alfred Crosby termed the Columbian exchange—the massive movement of flora and fauna (including agents of disease) in both directions across the Atlantic after the European discovery of the Americas.

Above all, the importation of a large amount of precious metal, especially silver, from the Americas had a significant impact on the European economy. Perhaps even more interesting was the fact that so much of that specie passed through European hands and on to Asia. Some recent scholarship has suggested that

in fact the drain of silver to the East has been one of the major forces shaping the world economy.

Consequences of European Expansion

The desire of Europeans to acquire goods from elsewhere sometimes meant the restructuring of other economies to meet those needs. The demand for sugar that had originally led to the creation of sugar plantations on the islands of the Mediterranean in the Middle Ages led to the creation of similar plantations on the Cape Verde Islands and then on the islands of the Caribbean. This development generated a demand for labor, a demand that the European population could not (or would not) meet, thus generating a market for slaves. Eventually, Europeans turned to Africa as the source for such labor, redirecting the long-standing African slave trade to the New World and away from its traditional markets in the Muslim world.

There were other consequences of European expansion, as Christian missionaries accompanied merchants and adventurers around the world, preaching the Gospel to new ears. The impact of these efforts varied widely, from the mass baptisms that Catholic missionaries often employed in the initial stages of conversion efforts in Latin America to the tiny number of converts that the Jesuits made over several decades of sophisticated missionary efforts at the highest levels of Chinese society. Another result was the development of cults that blended Christian and local beliefs and practices, as well as the incorporation of local beliefs into the Christian context. There also emerged new populations, mestizos and creoles, who reflected the movement of peoples, voluntarily and involuntarily, around the world. Such peoples reflected not only new mixtures of physical characteristics but new languages and dialects as well.

The final consequence of European expansion was the gradual development of a conception of mankind as a community. This is reflected quite clearly in the development of a body of international law designed to regulate relations among the states of the world. This legal order was linked to a conception of mankind rooted in an anthropology that saw a progression from primitive hunter-gathers through

pastoralists to agriculturists and from life in the fields to life in urban communities. On the basis of this anthropology, the powerful imperial states were able to assert their superiority, culturally as well as militarily, to all the other human societies and to restrict leadership of the worldwide legal order to the Christian nations of Europe. They could also justify their conquest and domination of large parts of the world on the grounds that they were assisting the development of peoples still at the lower stages to reach their full human potential, an attitude that evolved into racism.

The Decline of Empires

The overseas expansion of Europe that began in 1492 was not an abrupt change in the course of European history. It was an integral part of a process that had developed between 1000 and 1300. In that period, many of the intellectual and institutional structures associated with post-1492 expansion were first created, structures upon which the explorers, missionaries, and settlers who followed Columbus built. The ironic consequence of the success of European expansion was that by the late eighteenth century, the oldest European colonial possessions in the New World were on the verge of a series of revolutions that were to overthrow European political domination without separating the new states from the European economic and cultural world. This in turn was the first stage in a process that only ended in the late twentieth century in a wave of decolonization that destroyed the great European empires. In their place, to an extent not always appreciated, the modern conception of an international order with a legal and institutional structure as an armature has implemented the Stoic and Christian conception of an international community. The empires faded away, but the cultural legacy remained.

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See also British Empire; Columbus, Christopher; Crusades, The; da Gama, Vasco; Darwin, Charles; Decolonization; Dutch



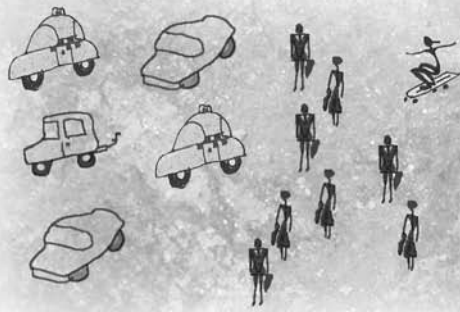
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European Union

The European Union (EU) is an economic and political union of twenty-seven European member-states (as of 2010). The EU is the most integrated of any regional bloc, operating as a single market with a common currency. It also maintains a range of common policies, including trade and agriculture, and increasingly shared foreign and defense policies. EU citizens enjoy free movement and exchange across member countries.

After World War II destroyed the economies and financial markets of Europe, nations were determined to rebuild their shattered economies, recover their influence, and—above all—ensure that such a catastrophe would never happen again. The restoration process was stimulated by the U.S.-led Marshall Plan, which provided European countries with financial allowances. Primarily, the new continent had to prevent antagonism between Germany and France. Many people supported the idea of a politically unified Europe and proposed a European federation or some form of European government. On 19 September 1946, the English statesman Winston Churchill gave a speech at the University of Zurich outlining his vision of a “United States of Europe” similar to the United States of America. The idea prevailed, and the Council of Europe was created in 1949, even though it remains a restricted organization today. The Council of Europe did not hold any legislative power or a right to vote. It was, and still is, a forum of political exchange to defend human rights, parliamentary democracy, and the rule of law.

Three Communities

The European Union of today grew out of three separate communities: the European Coal and Steel Community (ECSC), the European Economic Community (EEC), and the European Atomic Energy Community (EAEC). Each of these communities had its own commission as well as its own council. All three communities had the same members continuously.

Early in 1951 France, Germany, Belgium, Luxembourg, the Netherlands, and Italy founded the ECSC, an administrative agency overseeing the production of coal and steel. On 9 May 1950, the French foreign minister, Robert Schuman, publicly presented his plan of pooling the coal and steel resources of the member states to create a unified market for their coal and steel products. This plan became famous as the “Schuman Declaration,” which was drafted by the French civil servant Jean Monnet. Initially the United Kingdom was invited to join the community as well but refused for sovereignty reasons.

By 1954 the ECSC managed to lift restrictions on imports and exports, creating a unified labor market as well as a common set of rules; between 1952 and 1960 steel production rose by about 75 percent. At that time coal and steel were the primary resources for industrialization. The Treaty of Paris of 1952 formally established the ECSC. A few years later the ECSC member states attempted to further integrate politically and militarily. They intended to create the European Political Community and the European Defence Community (EDC), having in mind a European military service under joint control as well as a federation of European states. Regardless of the treaty



A sign announcing the price of clothing in euros hangs in a market in Athens, Greece, in 2003. Adopting the euro as the currency of the European Union has proved a contentious issue among member nations.

that was reached between the member states, the French National Assembly failed to ratify the treaty, and thus the EDC was buried. In 1955 the Western European Union settled in its place.

Soon after ratification failed, the member states of the ECSC reiterated their desire for further integration and founded the European Economic Community along with the European Atomic Energy Community. The EEC was established by the Treaty of Rome in 1957 and formed a customs union among the six founding countries in 1958. Experts thought that deeper economic integration would lead to a political union. The EEC worked for the liberalization of the flow of goods, services, capital, and people; the abolition of trusts and cartels; and the development of joint and reciprocal policies on labor, social welfare, agriculture, transport, and foreign trade. The EEC was the most important of the three communities.

The EAEC—also known as Euratom—arose as the third treaty organization and was also established by the Treaty of Rome in 1958. Euratom's aim was the collaboration of member states in peaceful nuclear research to ensure the free movement of nuclear raw materials, equipment, investment capital, and specialists within the community, and to promote European nuclear research rather than transnational competition. Euratom's authority was limited to civilian use of atomic energy.

Because the United Kingdom did not participate in any of the three communities, it proposed that the Common Market to be expanded to North America. London initiated European Free Trade Association (EFTA) negotiations, which were finalized in 1960 and joined by the European countries that were not members of any of the other three communities. During the 1970s EFTA and EEC negotiated various free trade agreements to reduce trade barriers and in 1979



introduced the European Monetary System (EMS), which helped to stabilize the currencies after two major oil crises in 1973 and 1979.

The European Community

With the Treaty of Brussels in 1965, Euratom, EEC, and ECSC merged as the European Community. The treaty also joined the three commissions and councils as the single Commission of the European Communities and the single Council of Ministers of the European Communities. The French president, Charles de Gaulle, vetoed Britain's membership, which Britain had applied for in 1963 for the first time. Only after de Gaulle left office could Britain join the EC in 1973. At the same time Ireland and Denmark joined the EC. The Single European Act of 1987 created a single internal European market and abolished all trade barriers that might hinder the free flow of goods, services, and people. The community also further integrated political and social affairs. Almost ten years later Greece joined the EC in 1981, and Spain and Portugal joined in 1986. When Germany reunited in 1990 the former East Germany was automatically absorbed into the community.

The European Union

In 1993 the European Community changed its name to the European Union (EU). The name change was established by the Treaty of the European Union, which was signed in Maastricht, the Netherlands, in 1992 and ratified by the EU member states in 1993. Its articles laid the foundation for the single European currency, the euro (the proposal of a common European currency was taken seriously as early as the mid-nineteenth century), a central banking system, a legal definition of the EU, and a further integration in policy areas such as foreign and security policy. The treaty replaced the Treaty of Rome of 1957. The European Union absorbed the functions of the Western European Union in 1999, which automatically gave the EU military capabilities. In 1995 the EU invited

Austria, Finland, and Sweden to join, bringing the number of member states to fifteen.

On 1 January 2002 the euro replaced the old national banknotes and coins. One year later, in 2003, the Commission of the European Communities started negotiations with Estonia, Latvia, Lithuania, Poland, the Czech Republic, Slovakia, Hungary, Slovenia, Cyprus, and Malta for European Union membership. This latest enlargement became effective on 1 May 2004. Bulgaria and Romania joined the EU on 1 January 2007. Croatia, the former Yugoslav Republic of Macedonia, and Turkey are candidates to join the EU, while Albania, Bosnia and Herzegovina, Montenegro, Serbia, and Iceland are recognized as potential membership candidates. Kosovo is also seen as a potential candidate, but not all member states recognize its independence from Serbia.

In December 2007 European leaders signed the Lisbon Treaty, which was intended to replace the unpopular and failed European Constitution. When Irish voters rejected the treaty in June 2008, its immediate future also became uncertain. At a second poll on 2 October 2009, Irish voters endorsed the treaty. When the Czech Republic approved the Lisbon Treaty on 3 November 2009, it had been ratified by all member countries. It came into effect on 1 December 2009.

Headquartered in Brussels, Luxembourg, and Strassbourg, the key institutions of the EU include the European Parliament, the Council of the European Union, the European Commission, the European Court of Justice, the Court of Auditors, and the European Central Bank. In the early twenty-first century the European Union comprises around 500 million citizens and generates approximately 30 percent of global GDP. The European Union motto is *United in Diversity*, and is perhaps best represented by the fact that it has twenty-three official languages.

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Expeditions, Scientific

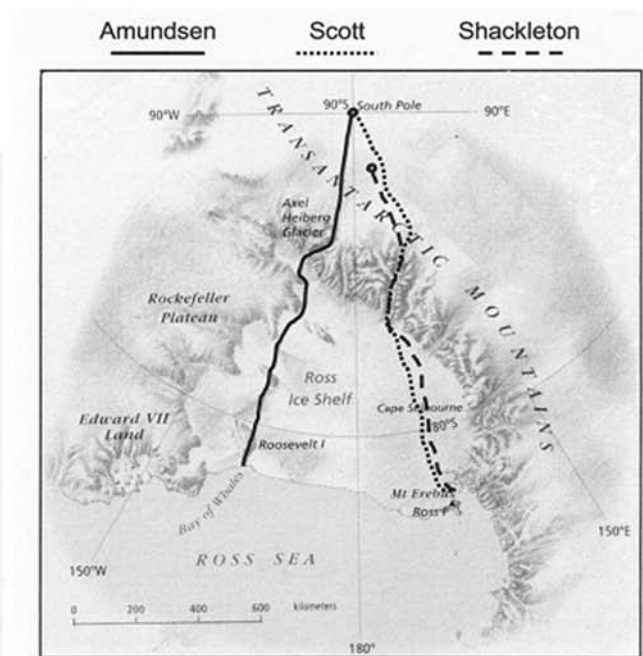
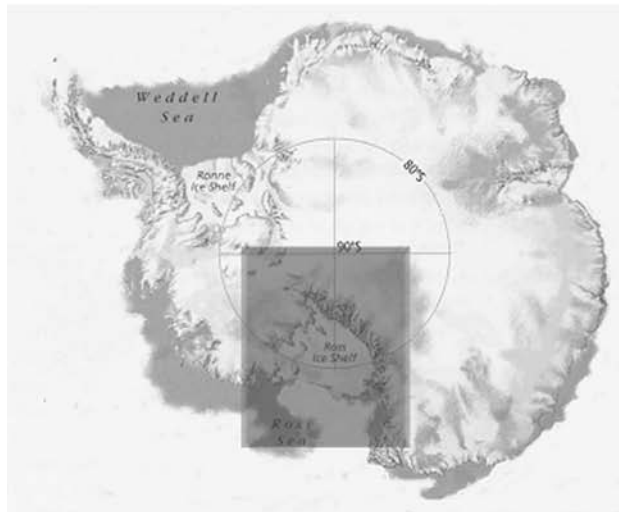
Scientific expeditions are voyages of discovery that are essentially motivated by advancing knowledge and understanding of the unknown through various scientific techniques. These kinds of expeditions have been undertaken for millennia and include explorations and examinations of a wide range of scientific fields and disciplines, such as botany, astronomy, biology, geology, entomology, and oceanography.

Scientific expeditions are attempts to go beyond the traditional limits of geography, culture, and survival in order to further human knowledge by answering specific questions through observation in a disciplined scientific framework. Scientific expeditions are often motivated by a desire for adventure or national glory, yet they can also bridge or even erase cultural divides in the search of knowledge. In antiquity the Greeks undertook the first recorded observational voyages, and in the Middle Ages Chinese civilization mounted large sailing fleets for exploration. In the seventeenth century European scientific societies sponsored expeditions focused on solving specific problems. In the eighteenth century, European Enlightenment thinkers promoted both science and educational travel for the advancement of Western civilization, resulting in the great European circumnavigations and American continental expeditions. As scientific disciplines and training became narrower and more differentiated, expeditions focused on specialized studies to push distinct disciplinary boundaries. In the late twentieth and early twenty-first centuries, expeditions have focused on the last frontiers of scientific exploration, including remote regions like the Arctic and the Himalayas, the deep sea, and outer space.

Observations in Transit: Antiquity–1500

The earliest records of human civilization show a clear interest in both science and travel, but it is not until classical antiquity that we have evidence of the two coming together. Alexander of Macedon (Alexander the Great, 356–323 BCE) included philosophers and observers on his campaign throughout Asia and the Mediterranean (334–323 BCE) and established Greek scholarly and scientific traditions in many of the lands he conquered, thus adding a scientific component to an expedition of military conquest. The Greek Pythias traveled from Marseille to England around 300 BCE to purchase tin but also made a thorough scientific study of the journey, recording observations while on land and at sea. Pythias was the first to systematically measure latitudes while at sea, and, going beyond mere observations, he hypothesized a correlation between the tides and the phases of the moon.

Many voyages of the Middle Ages and the Renaissance counted botanists and other scientific observers among their passengers. None was close in scale or ambition to the vast expedition of the Chinese explorer Zheng He. His first voyage left Liujia harbor in July 1405 with some sixty-seven enormous ships and around 28,000 men, the largest scientific expedition ever undertaken. Sent by the emperor of the prosperous Ming dynasty (1368–1644), Zheng He's fleet was prepared to take measurements and record nautical information, including compass readings and other observations, in a regular logbook, a practice that appeared only later among European expeditions. The fleet crossed the South China Sea, visiting Java, Sri Lanka, and India, and returned in 1407.



The map on the right, an enlargement of the shaded rectangle above, shows the routes taken by Roald Amundsen, Robert F. Scott, and Ernest Shackleton in their race to reach the South Pole.

On subsequent voyages with fleets as large as two to three hundred ships, Zheng He traveled to Yemen, Mecca, Somalia, East Africa, and India. Zheng He was ordered to study carefully the customs of local peoples everywhere he went, and each voyage included a team of doctors, naturalists, and observers.

Problem-Solving Expeditions: 1500–1750

As the Ming dynasty lost its wealth and prominence on the world stage (seafaring expeditions were even forbidden by order of the emperor in the late fifteenth century), European developments in sailing and science accelerated rapidly. As European monarchs began to spread their power and influence beyond the Mediterranean world to Africa, South Asia, and the Americas, these became new arenas for scientific expeditions. At the same time, European science was becoming a professional and often state-sponsored activity with large organizations guiding research, such as the Royal Society of London (begun in 1660) and the Paris Academy of Sciences (begun in

1666). These societies sponsored a new kind of scientific expedition that was designed not merely to gather general information, but to solve specific scientific problems.

French voyages to the South Atlantic, such as that of Bouvet de Lozier in 1738, were aimed at determining the existence and location of the fabled Terra Australis, a vast southern continent believed to lie just below the tip of South America and to harbor great riches. Expeditions to find Terra Australis were often scientifically motivated, in the hope of discovering new species of plants and animals and illuminating the question of the spread of animal and human varieties around the globe, one of the pressing questions of eighteenth-century natural history and biology. Even more narrowly focused was the 1735 Maupertuis-Lacondamine expedition to discover the exact shape of the Earth. This voyage, sponsored by the Paris Academy of Sciences, was the product of a scientific controversy between the followers of the French philosopher and physicist René Descartes (1596–1650), whose theories predicted that the Earth was slightly smaller around the equator than around

the poles, and the followers of Isaac Newton (1642–1727), whose new physical system implied that the Earth must instead be slightly larger around the equator. Two parties were sent to remote parts of the Earth, one to Lapland, near the North Pole, and one to Peru, near the equator, to measure the Earth's curvature at each location and thus decide which system was correct. Besides a wealth of botanical and geographical information and specimens, the expeditions returned with measurements that supported the Newtonian world system, a great experimental triumph for Newtonian physics.

Great Scientific Circumnavigations: 1750–1800

Inspired by both the scientific and imperial potential of expeditions like those of Bouvet and Maupertuis, European monarchs began to fund large-scale scientific circumnavigations beginning in the 1750s. Louis Antoine de Bougainville sailed around the world with a team of scientists trained in Paris to record the plant, animal, and human varieties of the Americas and especially the Pacific. Bougainville's voyage sparked the European image of Pacific Islanders, especially Tahitians, as an ideal human society and served as an inspiration for the three voyages of the British captain James Cook between 1768 and 1780. Cook's voyages combined the specific and general modes of scientific expedition. He first sought to observe the passage of Venus in front of the sun at Tahiti (astronomers used these observations to determine with great precision the distance between the Earth and the sun), but also had instructions to make a general scientific survey of the islands. On board was the botanist Joseph Banks, who quarreled with Cook and never traveled with him again, but who became a central figure in European botany after the voyage. Cook's second voyage aimed to finally disprove the existence of Terra Australis, circling Antarctica at low latitudes and finding nothing but ice. His third voyage aimed to find a Northwest Passage between the Atlantic and Pacific oceans, but focused on exploring the Pacific, ending with the discovery of Hawaii, where Cook was killed after a dispute with natives.

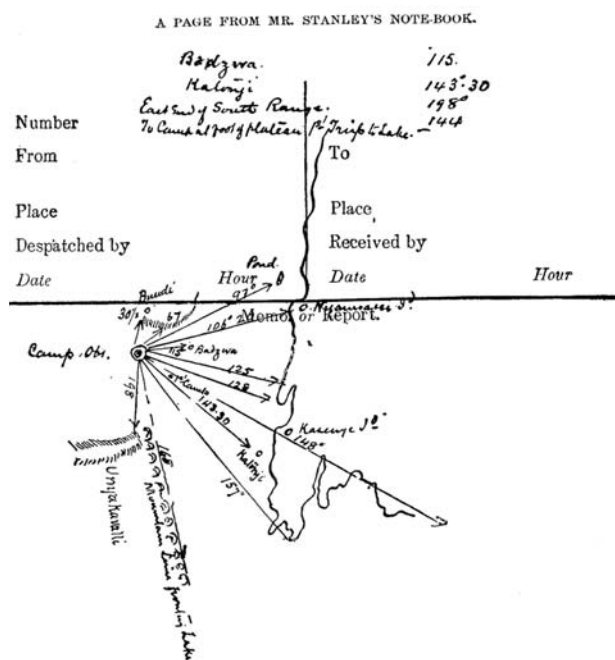
The French response to Cook's explorations was to mount a nationally sponsored scientific circumnavigation led by Jean François de Lapérouse, with unprecedented scientific preparation: four sets of elaborate instructions, including lengthy ones from the Paris Academy of Sciences and the Royal Academy of Medicine. After all trace of Lapérouse's expedition was lost in 1788, the Revolutionary government outdid the monarchy by outfitting the most ambitious navigational survey and rescue ship to date, captained by Antoine d'Entrecasteaux, which failed to find Lapérouse but nonetheless returned with the hitherto most accurate hydrographic charts of the Pacific.

The Spanish expedition under Alejandro Malaspina (1789–1794) used Spain's American colonies as a base from which to make a botanical and hydrographic survey of the entire Pacific from Alaska to Australia. At the close of the eighteenth century, the last of the great Enlightenment scientific expeditions, Lewis and Clark's survey of the American West (1800–1803), and German scholar Alexander von Humboldt's long overland journey (1799–1804) through North and South America, perfected the new mode of broadly defined scientific travel.

Discipline-Specific Voyages: 1800–1900

The nineteenth century ushered in a new form of scientific expedition that reflected the new professionalization and specialization in science itself. Probably the most famous scientific expedition of all time was the product of this shift: the voyage of the HMS *Beagle* (1831–1836) included a young naturalist who made guided observations on the specific variations of plants and animals across geographical regions. It was these observations that led the naturalist, Charles Darwin (1809–1882), to propose his theory of evolution some twenty years later, revolutionizing biology and more general thought about human origins.

The U.S. Exploring Expedition of 1838 aimed to put advances in navigation and charting to use to master the geography of the Pacific. The *Challenger* expedition (1871–1875), under the Edinburgh



Mazamboni's country bears many names. *Mtusuuma*, *Ndussumma*, *Mtagata*. His subjects are called *Bundussumma*.

April 26: Descended to Badgwa on the Lake plain in ^{the m.} 2:45
Altitude of Badgwa by Camp Answit 2550 feet. which shows
1950 feet of a descent.



Record keeping is an important element of scientific expedition. This page from the notebook Henry Stanley kept during his travels in Africa added to scientific knowledge of the region, even though Stanley was not a scientist.

marine naturalist Wyville Thomas, actually created a new discipline: oceanography. Sparked by a debate over how deep in the ocean life could exist, *Challenger* took advantage of new dredging techniques to study all facets of ocean life.

Astronomy had long been a component of travel, and astronomers were frequent members of scientific expeditions, but in the late nineteenth century a wave of support grew for specifically astronomical expeditions, especially those to observe solar eclipses. When photography was introduced into astronomy around 1870, it became a key element in transporting scientific information from the expedition site to

the sponsoring country or laboratory. Expeditions such as Norman Lockyer's to Bekul, India, to observe the solar eclipse of 1871, were central to the rise of nationally funded science in Britain and took advantage of its growing colonial empire.

Many of the key figures in creating government support for all kinds of science in Britain were themselves planners of eclipse expeditions. By the late 1800s, national scientific styles began to strongly influence astronomical travel: British and French expeditions depended on highly centralized funding, while U.S. expeditions were locally organized and funded, usually by a university or observatory.

The Final Frontiers: 1900–Present

With the dawn of the twentieth century, the focus of scientific travel shifted once again to geographical exploration, this time in the last regions of the globe left unexplored. The Canadian Arctic Expedition of 1913–1918, led by Vilhjalmur Stefansson, marks the beginning of this trend. Stefansson's goal was to cross the Beaufort Sea and study the balance of earth, ice, and water at the edge of the polar ice cap. He was trained as an anthropologist and had spent winters with the Eskimo of northern Canada. After only a month of travel, the largest of his three ships was stuck in ice and soon crushed in a storm, together with half the supplies for the expedition. Stefansson and a small group pushed north using dogsleds and Eskimo hunting techniques; the breakaway party managed to gather scientific observations on much of the Beaufort Sea, discovering five new islands, and remapping many of the coastlines. Reunited with the rest of the expedition at Cape Kellett, they continued their polar exploration and data gathering for another three years before returning with a wealth of new information and launching a century of scientific polar expeditions.

After World War II, Asia came once again to prominence in science and scientific expeditions. The same drive to reach the last frontiers of scientific study on Earth pushed a Japanese team to map the fauna and flora of the Nepal Himalaya in 1952–1953. This expedition displayed the dawning international

character of scientific expeditions: while all the members of the exploration party were Japanese, the specimens they gathered were sent to specialists around the world for identification and analysis.

While both the Canadian and Japanese expeditions relied on local, traditional methods to survive extreme conditions, new technologies in the second half of the twentieth century were also crucial in allowing expeditions to penetrate previously inaccessible realms. Beginning in the 1950s, underwater submersible devices allowed explorers like Jacques Cousteau to continue the investigation of oceans to a depth and in detail unimaginable fifty years earlier. Similarly, since the early 1960s space exploration based on the fueled rocket and computer controls has defined a new frontier for scientific expeditions.

New Frontiers in Scientific Expeditions

As scientific expeditions move beyond the Earth, specialization of scientific disciplines has culminated in research projects developed and carried out by teams of specialists at home. Projects based on one national style of organization and funding are giving way to cooperative, international ventures in which teams from different countries provide specialized contributions. Yet for all its novelty, space exploration still displays the enduring and unique combination of forces that has characterized scientific expeditions since antiquity: the desire to go beyond the traditional human boundaries and the need to rely on disciplined observation to tame the profusion of information encountered in unknown lands; the tension between the drive for national prestige and the desire to see science, especially scientific travel, as transgressing all political boundaries; and finally, the belief in the unique potential of science to guide the quest for knowledge of the unknown.

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See also Darwin, Charles; Exploration, Chinese; History, Maritime; Navigation; Scientific Instruments; Technology—Overview; Space Exploration; Zheng He

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Exploration, Chinese

China focused mainly on inward expansion throughout much of its history, and most of its seafaring took place in their coastal waters and the Indian Ocean. The most famous Chinese ocean explorer is Admiral Zheng He, who undertook seven expeditions over three decades during the Ming dynasty (1368–1644). Unlike many European explorations, Chinese exploration was not motivated by Chinese colonial expansion.

Much important exploration has occurred through sea voyages, which were a starting point for a form of globalization in the early modern era of world history. While European and Western explorers more generally have received much attention, the Chinese were also active in exploration. A land-based nation, China is also surrounded by four seas: the Bo Hai Sea, the Yellow Sea, the East China Sea, and the South China Sea, which link China to the Pacific and Indian oceans. Mainland China has favorable conditions for sailing in terms of the climatic patterns: sea and ocean currents, tidal patterns, and inland transportation to the coast.

In addition to maritime exploration, during the Han dynasty (206 BCE–220 CE) overland Chinese explorers, such as Zhang Qian, made contact with kingdoms in Central Asia, India, Persia, and the Middle East. It is thought that Gan Ying, an emissary of General Ban Chao, might also have ranged as far as Roman-era Syria late in the first century CE. And while the Silk Roads continued to connect China to the outside world and remained a key source of trade, soon China's exploratory efforts would turn more exclusively towards the seas.

China's Three Early Sea Routes

China's maritime activities have undergone a long evolution. Although scholars have debated when and how Chinese maritime exploration began, and how just much Chinese sailors achieved in their premodern era (ending around 1840), the extent of China's maritime undertakings can be seen from the sea routes that Chinese sailors used. There were three types of routes: local short-range routes along China's own coast; medium-range routes to eastern Asia, southern Asia, and Southeast Asia; and long-range routes to western Asia and eastern Africa.

By the Western Han period (206 BCE–8 CE), it is recorded that Chinese ships reached as far as Simhala (now Sri Lanka). In the Eastern Han period (25–220 CE), Chinese ships went beyond Sri Lanka to reach destinations in western Asia. In 97 CE, Gan Ying, the Chinese envoy designated to the Roman Empire, went as far as the edge of the Persian Gulf. From the Tang dynasty (618–907 CE) onward, some of these sea routes were frequently used by the Chinese, the Indians, and Arabs; they formed the so-called Silk Routes (as compared with the overland Silk Roads).

Maritime Growth Begins

By the tenth century, most of the sea routes used by the Chinese followed coastlines. Major maritime progress was made during the Song dynasty (960–1279), when China experienced its medieval economic revolution. For the first time, Chinese ships were able to cross some 2,300 kilometers of open waters in the Indian Ocean from Malacca to Sri Lanka, avoiding the coastal detour in the Bay of Bengal. They even

sailed from Sri Lanka to Ghubbat al Qamar, an inlet of the Arabian Sea on the Arabian Peninsula, across another 4,000 kilometers of ocean. This was a huge leap in Chinese maritime advancement.

With ongoing incremental improvements in technology, the Chinese sailed faster and more accurately. As a result, sea voyages became progressively shorter. In Western Han times, a trip to the vicinity of Singapore took some 150 days, but the same journey took only 40 days during the Song dynasty. During the Sui (581–618 CE) and Tang (618–907 CE) dynasties, it took more than a month to travel from Sri Lanka to the Persian Gulf, whereas by the Ming dynasty (1368–1644), to cover a similar distance took just twenty or so days.

Central to Chinese progress in sailing were improvements in navigation and shipbuilding. Astronomical navigation became well established in China by the end of the ninth century, and it was enhanced by the invention and use of the compass during the tenth century, which led to the stage of partial dead reckoning, that is, navigating in part without reliance on the stars, using measured travel distance and compass positions instead. In time, sophisticated seaway compass charts became available among Chinese navigators; these contained information on main landmarks, star elevations at chosen locations in different seasons, travel distances, and compass readings for various sea routes. A good example is *Zheng He hanghai tu* (The Navigation Chart of Zheng He's Voyages), from the fifteenth century.

In terms of shipbuilding, Chinese technology reached its maturity by the twelfth century with the Fuzhou-type ship (*fuchuan*), which was used exclusively for sea voyages. Its main features were a ballasted keel and bilge keels together with a low deck length-beam ratio for stability; a V-shaped bottom and multiple sails and jibs (three to twelve as recorded) for speed; multiple stern rudders for steering; and a hull of clinker-arranged planks with multiple holds for a stronger structure. During the same period, the versatile shallow-water ship (*shachuan*), commonly known as the Chinese junk, was also invented; its distinctive features were a keel-less hull and a U-shaped



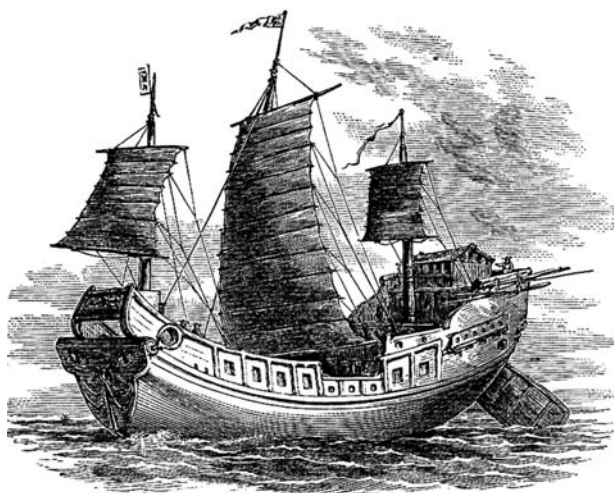
Chinese Admiral Zheng He's astronomically guided chart from Ceylon to Sumatra.

bottom. The Fuzhou-type was the standard for the Ming fleet.

By the mid-fifteenth century, the Chinese were among the most knowledgeable, best-equipped, and widest-traveled sailors in the world, having come by 1440 to a total of 153 new places in such geographically dispersed regions as Southeast Asia, South Asia, the Arabian Sea, the Red Sea, the East African coast, and even the Mediterranean region.

Ming Voyages: Glory and Outcome

Undoubtedly, the best-known recorded case of Chinese exploration was that of Admiral Zheng He (1371–1433). Without Zheng He and his publicized seven voyages to the Indian Ocean, much of Chinese maritime ability and achievements may have been obscured in history, as happened with the Polynesians.



A sailing ship typical of those used in Chinese explorations in the Indian Ocean.

Recruited as a young eunuch to enter the inner circle of the Ming Court, Zheng was appointed in his early thirties to command a long ocean-going voyage in 1405, despite the fact that he had no apparent sailing experience. It appears that Zheng's constant sailing for the next three decades (until 1433) served the Ming court the purpose of keeping him away from state politics—a dignified way to achieve his exile following his involvement in a court coup. In this context, there was an element of sailing for the sake of sailing associated with Zheng's journeys, all of which resulted in economic losses for the Ming dynasty. Nor did Zheng He's voyages lead to greater prosperity in foreign trade, which might have let the court recoup the cost of the voyages.

In reality, the sole purpose of the ill-defined voyages was as a public relations campaign to win friends for China overseas. Indeed, Zheng and his men behaved like philanthropists, distributing gifts wherever they went. Even so, the actual effectiveness of the campaign remains highly questionable. The number of countries that paid tribute to the Ming increased very little during and after Zheng's voyages. The main evidence that “international peace” was promoted by Zheng's visits comes from the fact that Zheng set up four regular stopovers in Champa (in present-day southern Vietnam), Sumatra, Sri Lanka, and Guli (Calicut in present-day India) instead of turning these places into China's colonies.

Spectacular as they were, Zheng He's multiple-legged trips were by no means unprecedented in

Chinese diplomacy: twelve centuries earlier, during the Three Kingdoms period (221–265 CE), Sun Quan, the King of Wu, sent Zhu Ying and Kang Tai overseas for a twenty-year diplomatic mission, during which time they visited Southeast Asia, the south Asian subcontinent, and the Arabian Sea region. Similar efforts were made during Yuan rule (1279–1368). And Zheng He was not alone in his adventuring during the Ming: another navigator, Shi Jinqing (d. 1421), toured Asia as imperial commissioner, traveling at least as far as Sumatra, Java, and Japan.

Due to the unclear motives, extravagant nature, and doubtful impact of Zheng's voyages, the Confucian literati during the Ming did their very best to ignore them. Zheng's records survived only in the hands of his closest aides, Ma Huan and Fei Xin, in the form of travelogues entitled *Yingya shenglan* (Tours to Great Sites Overseas) and *Xingcha shenglan* (Voyages on Heavenly Rafts), written in 1451 and 1460, respectively. Since then, most of Zheng's findings have remained unknown to the large majority of the Chinese population.

However, the sheer scale of Zheng's operation shows China's organizational skills and accomplishments in the maritime sector: as many as 208 vessels and around 28,000 marines were involved in a single voyage, taking multiple sea routes simultaneously with detachments in order to maximize geographic coverage. It has even been suggested that Zheng's detachments may have visited Australia and parts of America across the Atlantic Ocean.

In the end, Zheng's voyages proved to be unsustainable. Cool-headed cost-benefit calculation finally prevailed among Confucian decision makers, and such wasteful voyages were never undertaken again. Chinese sailors during the Qing dynasty (1644–1911/12) were content to remain within the China seas. In a twist of historical fate, this made Zheng a legend and his journeys the pinnacle of Chinese maritime history; Zheng achieved a worldwide record that was only broken by Europeans with different political and economic institutions and agendas, as seen from the activities of Christopher Columbus and Vasco da Gama.

Do not fear going forward slowly; fear only to stand still. • Chinese Proverb

Historical Perspective

China's achievements in exploration over the long run (from the beginning of the Han in 206 BCE until the end of Zheng's journeys in 1433 CE) were significant by premodern standards. But, as in many other areas, upon turning inward the Chinese were surpassed by the post-Renaissance Europeans, who enjoyed the fruits of the scientific revolution, the military revolution and, finally, the Industrial Revolution. All of these revolutions took place after Zheng's era.

Ironically, during the late nineteenth century when the Chinese took to the sea again in large numbers, they were no longer accomplished mariners on showy Chinese treasure ships. Rather, they were helpless coolie laborers on foreign ships on the way to sell their cheap labor to the West, showing just how poor and weak China had become since Zheng's time.

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See also Trading Patterns, China Seas; Zheng He

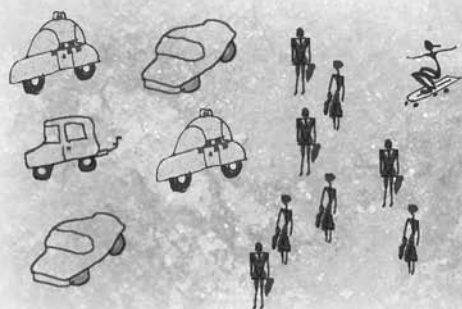
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Extinctions

Extinctions have occurred throughout the history of the Earth; extinction is in fact a critical component in the theory of evolution and is attributed to natural selection, random factors, or catastrophic events. The Earth has survived five mass extinctions—including one that destroyed the dinosaurs—all of which have shaped the world as we know it today.

The fossil record reveals that the history of life has been a process of speciation, or the diversification of organisms into new species, accompanied by extinction, or the disappearance of existing species. Speciation and extinction are equal partners in evolution. In neo-Darwinian theory, genetic variation and natural selection are the primary agents in evolution. Natural selection favors genetic variation that improves an organism's chances of surviving to reproduce within its environment. Successful variation is passed on to the next generation. Its frequency in the population increases from generation to generation until it eventually replaces the earlier, less advantageous trait. Acquisition of new traits sometimes enables organisms to invade new habitats. In neo-Darwinism, the environment is the prime source of selection. Therefore, environmental change—or change of environment, in the case of habitat invasion—is considered the chief cause of species evolution. New environmental conditions change selective pressures operating on populations of organisms. Populations must adapt to new circumstances or perish without descendants. In addition to natural selection, random factors and rare, catastrophic events also appear to play a role in extinctions.

Earth is some 4.6 billion years old. Geologists divide this time into eras, periods, epochs, and

ages. (See table 1.) Life first appeared on Earth late in the Precambrian era some 3.5 billion years ago. The majority of species that evolved since that first appearance are now extinct. Through time, species generally disappear individually in “background extinctions.” But during at least five mass extinction events, huge numbers of species perished together over (geologically) short spans. (See table 2.) By eliminating some previously successful species and allowing other, formerly minor, groups to expand and diversify, each mass extinction restructured the biosphere.

End-Cretaceous Extinctions

The Cretaceous (114 to 65 million years ago [mya]) was the final period in the age of dinosaurs. At its

Table 1.
Geological Time Scale

Eras	Periods	Epochs
Cenozoic (65 million years ago [mya] to present)	Quaternary	Holocene
Pleistocene	Tertiary	Miocene
Oligocene		Eocene
Paleocene	Mesozoic (248 to 65 mya)	Cretaceous
Jurassic		Triassic
Paleozoic (540 to 248 mya)	Permian	
Carboniferous		Devonian
Silurian		Ordovician
Cambrian		Precambrian (4.6 billion to 540 million years ago)

Table 2.
The “Big Five” Mass Extinction Events in Geological Time

End-Cretaceous period	c. 65 million years ago (mya)
Late Triassic period	c. 210 to 206 mya
Late Permian–Early Triassic period	c. 252 to 245 mya
Late Devonian period	c. 364 to 354 mya
Late Ordovician period	c. 449 to 443 mya

close, virtually all of these great beasts—together with more than 50 percent of Earth’s species—disappeared suddenly and entirely. Many scholars attribute their extinction to climate change, but the disappearances were not gradual, and the dinosaurs appear to have been diversifying up to the end. The physicist Luis Alvarez and his colleagues (1980) note that rock layers dating to the Cretaceous boundary commonly contain a thin clay layer of iridium, a rare metal resembling platinum, and spherules or tektites, spherical bits of glassy rock formed from molten silicate droplets. They interpret this as evidence that one or more mighty asteroids or comets struck Earth around 65 million years ago. They hypothesize that the impact generated a giant vapor cloud (out of which the spherules condensed), sent shock debris across the globe, created an immense fireball, and cast a huge plume of dust into the atmosphere. As this dust plume ascended, atmospheric winds spread it into a globe-embracing cloud that blocked sunlight from the Earth’s surface for a year or more. In this scenario, mass extinctions resulted from both the initial impact and the disruption of the food chain that followed. Perhaps the collision also ignited vast global fires that added huge smoke plumes to the sun-blocking haze of the windblown impact debris. A crater between 200 and 300 kilometers in diameter of the proper age and aspect that has been identified in the subsurface of the Yucatán Peninsula of Mexico may be the impact point. Asteroid collisions may have caused the earlier mass extinctions of the Late Devonian, the Permian–Triassic, and the Late Triassic as well. Whatever its cause, the Cretaceous extinctions ended the dinosaurs’ domination and provided empty ecological space that was ultimately filled by the mammals, a hitherto insignificant class of vertebrates.

Pleistocene/Holocene Extinctions

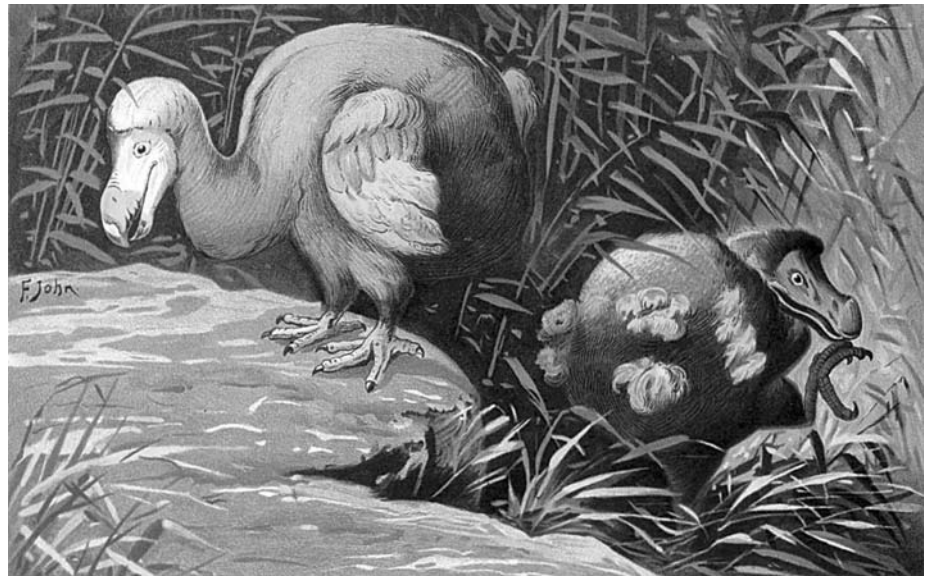
The Pleistocene epoch (1.8 mya to 8000 BCE) was preceded by the Pliocene and followed by the Holocene epoch (8000 BCE to present). It is called the Ice Age because continental-scale glacial ice sheets cyclically advanced and retreated during this time. Near its close, anatomically modern people (*Homo sapiens sapiens*) evolved, probably in Africa, and spread throughout most of the Earth. Although background extinctions occurred throughout the epoch, Pleistocene animal life remained rich. Then, between 10,000 BCE and 6000 BCE, extinctions occurred on a massive scale. “Megafauna,” species with large adult body sizes and body weights over 45 kilograms (100 pounds), were most severely affected.

Although extinctions occurred on all continents, they did not occur on them uniformly. The number of megafaunal species that disappeared in the New World was much higher than elsewhere. During the 4,000 years after 10,000 BCE, North and South America lost the Colombian mammoth, mastodon, horse, camelops, Shasta ground sloth, saber-toothed cat, and seventy other genera. Extinction rates in Europe and Eurasia were lower. Nonetheless, the woolly mammoth, woolly rhinoceros, Irish elk, and other cold-adapted creatures disappeared after 14,000 BCE. Musk oxen, steppe lions, and hyenas disappeared there but survived elsewhere. The distribution of horses and steppe bison became greatly restricted. Late Pleistocene extinction rates were lowest in Africa. Megafaunal extinctions that occurred there, frequently at the beginning of the epoch, were modest in number at its close.

What Was the Cause?

Rapid climate change at the Pleistocene’s close is a possible cause. During the last 128,000 years of the epoch, the Northern Hemisphere experienced long continental glacial advances punctuated by short-term ice contractions or interstadials. Glaciation terminated abruptly about 10,000 BCE and was followed by rapid deglaciation and a warmer, moister climate. During this interstadial, European, Eurasian,

F. John, *Dodo oder Dronte* (1890). Color illustration. The dodo bird (*Raphus cucullatus*) is considered by scientists to be the “poster bird” for extinction.



and North American forests expanded northward, severely curtailing the range and population sizes of plains megafauna like the horse, mammoth, bison, and woolly rhinoceros. This interstadial ended about 9000 BCE, and glacial conditions returned for another thousand years. Extinctions were not entirely coeval with this deglaciation, however. Further, rapid climatic changes had occurred often during the Pleistocene without triggering similar waves of extinction. Presumably, most Pleistocene species had evolved physiological tolerance for climatic change or could migrate in the face of it. Further, some species, most notably the horse, became extinct in North America but survived in Eurasia to be reintroduced to the New World in historic times. If the environment of North America had been fatal to the horse at the end of the Pleistocene, would the wild descendants of Spanish mustangs be able to roam the western United States with such success today?

While climatic change cannot explain the Pleistocene extinctions, perhaps “anthropogenic overkill,” human hunting on a limitless scale, does. Two kinds of evidence suggest this: (1) the asymmetry of worldwide extinctions and (2) the stratigraphic association between human stone tools and the bones of extinct species. Variation in the pace of extinction in Africa, Eurasia, and the New World may reflect the different arrival times of fully modern humans on each continent. Megafauna and the hominids evolved together in Africa over the last four to six million years and anatomically fully modern *Homo sapiens*

probably evolved there some 150,000 years ago. Some suggest that the extinction rate of African megafauna was low by the terminal Pleistocene because the species had evolved behavioral means of coping with human predation by that time. Anatomically fully modern *Homo sapiens sapiens* did not appear in Europe until around 35,000 years ago. The shorter period of association between European game animals and these new human predators may account for the greater rate of megafaunal extinctions in Europe compared to Africa.

The stratigraphic association between the stone tools and the bones of extinct megafauna found in the terminal Pleistocene age archaeological sites is also taken as evidence of human “overkill.” The vast quantities of mammoth bones recovered from the celebrated kill sites in the Ukraine indicate Eurasian hunters slaughtered prodigious numbers of these beasts there. Such evidence is strongest in North America where direct and primary association between the distinctive lanceolate-shaped Paleo-Indian stone projectile points and megafauna is well documented. In North America, the extinction of key elements of Pleistocene megafauna, including ground sloths, camelopes, tapirs, mastodons, various species of bison, mammoths, and horses between 10,000 and 8000 BCE is clearly correlated with the abrupt appearance of the Paleo-Indians between 9500 and 9000 BCE. If the specialized Paleo-Indian hunters were the first people to arrive in the New World, they would have found a hunter’s paradise filled with game but empty of

There is little doubt left in the minds of professional biologists that Earth is currently faced with a mounting loss of species that threatens to rival the five great mass extinctions of the geological past. • Niles Eldredge (b. 1943)

human competitors. That paradise would have been unlike anything in the Old World as the animals in it had not evolved the behaviors they needed for dealing with cunning, two-legged human predators. As Paleo-Indian peoples grew in number, they would have expanded southward and across the continent in an advancing wave. By employing game drives and other wasteful hunting strategies that indiscriminately killed large numbers of game, these early hunters may have extinguished megafauna on an ever-widening front. It seems plausible that anatomically modern humankind—practicing predation on the large and profligate scale reflected at kill sites like Solutré, Dolni Vestonice, and Olson-Chubbuck—tipped the balance against megafauna already stressed by changing climate. If these sites do indeed reflect human connivance in “megacide,” they provide a cautionary tale: once destroyed, species do not come back.

The extinction of the megafauna must have forced big-game-hunting peoples to realign their subsistence. The archaeologist Mark Cohen (1977) asserts that, by reducing available game, the extinctions initiated a “food crisis” after around 8000 BCE that forced people in Eurasia, Europe, Africa, and the Americas to expand their subsistence bases and exploit a greater range of species and habitats. Hitherto neglected species like fish, crabs, turtles, mollusks, land snails, migratory waterfowl, and rabbits became a routine part of the diet, and plants were exploited systematically for fruit, tubers, nuts, and seeds. Ultimately this food crisis may have stimulated the development of agriculture.

Late Prehistoric and Historic Period

Extinctions at the hands of humans continued in the late Prehistoric and Historic periods through (1) habitat fragmentation and destruction, (2) the introduction of predators or foreign competitors (particularly on islands), (3) overhunting, and, more recently, (4) hunting or gathering wild organisms for market sale. By late prehistory, few of the world’s habitats had not felt the impact of humankind. Nonetheless, all impact was not the same. While that of the hunter-gatherers was modest, agricultural

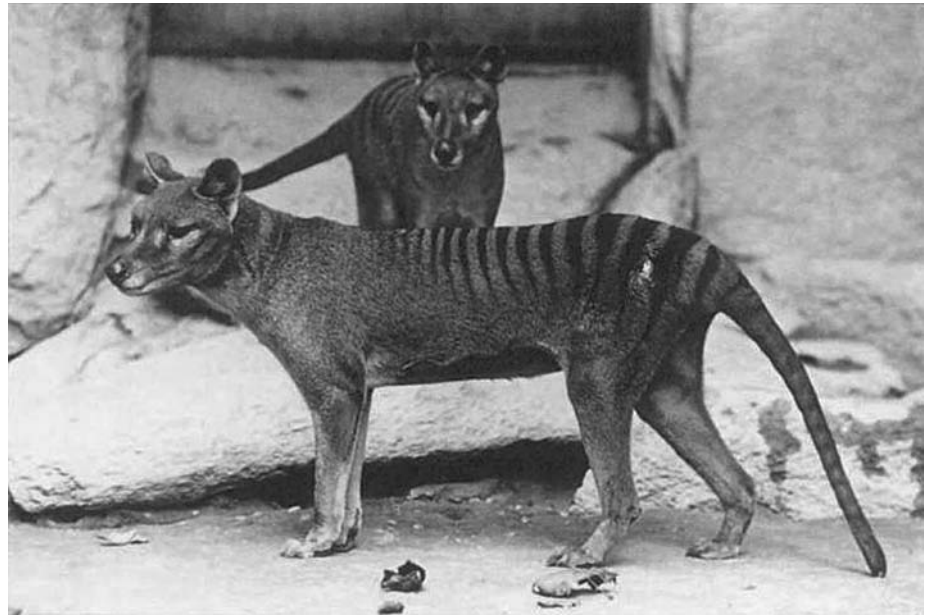
systems transformed the landscape. Extinction of species through habitat loss has chiefly been due to the spread of agriculture and the competition between indigenous fauna and domestic animals. Yet domesticants are not the only new arrivals that generate extinctions. On islands, numerous bird species have vanished following the human introduction of rats, mongooses, or snakes. The brown tree snake, brought to Guam around 1950, extirpated nine of the thirteen native forest birds on the island. Species extinction has also resulted from intentional human persecution. A dramatic example is found in the archaeological record of New Zealand. Long isolated from mainland Asia, New Zealand supported a unique array of large, ground-dwelling, flightless birds called moa. Moa species ranged from the size of turkeys to giant, ostrich-like creatures ten feet or more in height. Having evolved in the absence of predators, they probably had little fear of the Polynesian colonists who probably arrived on the island sometime in the thirteenth century. Within one hundred years, the eleven species of moa had been hunted to extinction.

Human persecution is especially likely to result in extinction when species are exploited for the market. The passenger pigeon inhabited eastern North America in uncounted numbers; their migrations darkened the skies for days. In the nineteenth century these birds were systematically harvested for market, and the species was extinct by 1914. Similar fates befell the great auk, the dodo, and numerous other bird species. An equally grim fate faces chimpanzees and gorillas, currently sold as “bush meat” in parts of Africa. Rhinoceroses are nearly extinct because ground rhino horn is regarded as an aphrodisiac in Asia. Marine fisheries worldwide are threatened by systematic market and sport fishing. Future extinctions may include cod, tuna, blue marlin, swordfish, and some species of whale. The dismal list goes on and on.

Extinction Matters

Extinctions have affected world history profoundly. First, the mass extinction of the dinosaurs at the end of the Cretaceous period allowed the diversification of

Thylacinus in the Washington D.C. National Zoo circa 1906. Scientists believe the thylacine became extinct during the 1900s. Photo by E. J. Keller, Smithsonian Institution Archives.



the mammalian order and, ultimately, the evolution of humans. That distant extinction event marks the nascent beginning of human history. Second, by forcing great changes in subsistence, the great extinctions in the Late Pleistocene may have triggered a “food crisis” that led to agriculture. Third, Late Pleistocene extinctions greatly impoverished the fauna of the New World. In the absence of key domesticable animal species, New World agriculture came to be based on plants. Old World peoples, living in an environment less impoverished by extinctions, domesticated many animal species and, as a result, were plagued by zoonoses, infectious diseases like smallpox and flu derived from them. As long as they remained isolated from the Old World, Native Americans remained free of such diseases. Following the arrival of Europeans and Africans, however, their lack of exposure and immunity laid them open to massive “virgin land infections” that contributed directly to their defeat and large-scale genetic replacement by peoples from the Old World. Late Pleistocene animal extinction patterns thus helped to determine the human population makeup of the Americas.

A Sixth Mass Extinction?

Present rates of extinction appear to be between 1,000 and 10,000 times the rates seen through most of geological time. The possibility of global warming darkens the picture further as changing climatic

patterns may cause extinctions by disrupting species distribution and abundance. Is the world on the brink of a *sixth* mass extinction event? And, if so, can anything be done to avert it? In the near term, international efforts at saving such critical habitats as the world’s forests and ocean fisheries must be intensified. Introduction of foreign species into new environments must be curtailed and the protection of endangered species increased. Such protection is never cheap or easy, but experience with the California condor, the sea otter, the American bison, the whooping crane, and other species indicates that it can be done. Simultaneously, zoos and aquariums must act decisively to breed endangered species in their charge. Reproductive and developmental biology can help. Genome banking of sperm from endangered species is promising as are more experimental approaches like somatic cell cloning. Chinese biologists are seeking to increase giant panda populations using nuclear transfer techniques involving bears as egg donors and surrogate mothers. Attempts at genetically restoring vanished species like the Tasmanian tiger and the mammoth are in the offing.

Whatever we do, we must recognize that extinctions in the present age are caused by the inordinate success of our own species. Therefore, controlling our populations and bridling our destructive impulses are essential. Global economic underdevelopment intensifies both of these problems. Poor people do not kill rhinoceroses or hunt endangered apes out of malice.



They do so to relieve their poverty. Stopping these practices demands eliminating the economic inequalities that necessitate them. No small task this, but, if we fail in it, the final impact of extinction on world history may be the elimination of our own species.

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See also Anthropocene; Biological Exchanges; Climate Change; Columbian Exchange; Deforestation; Diseases—Animal; Diseases—Overview; Diseases—Plant; Domestication, Plant and Animal; Ices Ages

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Famine

Throughout history people have experienced food shortages and famines. Only in relatively recent times has agricultural development progressed to the extent that sufficient accumulated food stocks could allow for the possibility of eradicating world famine. The fact that famines do still occur is not a consequence of insufficient food, but of political and social problems, including those associated with local distribution.

Famine is a complex social phenomenon and is distinguished from starvation by its social aspect. Individuals starve to death as a result of reductions in food supply, but societies experience a more complex response. Not all members of society suffer equally from food shortages. As Amartya Sen has pointed out, the poorer and less privileged sections of society, whose entitlements to food are least secure, suffer more than the richer, more privileged sections. The history of famine is not simply a history of factors that cause a reduction in food supply, or of the imbalance of food production against population growth. It includes the history of social and political responses to these problems, the history of social formations, and the history of social differentiation concerning food entitlement. While there has traditionally been a classification between natural and politically induced famines, the distinction does not really hold. Every famine that develops to take on significant mortality consequences indicates a failure of famine avoidance and relief measures. Most famines have had multiple causes.

All previous social formations have experienced food shortages and famines. It is only in relatively recent times that agricultural development has progressed to such an extent as to enable sufficient food

stocks to be accumulated to pose the possibility of the eradication of world famines. The fact that famines do still occur is no longer a consequence of there being insufficient food, but of political and social problems including those associated with local distribution.

Famine in Early Social Formations

At earlier times there had not been a progressive move toward the eradication of hunger. The shift from hunter-gatherer to settled farmer societies was not associated with improved nutrition. The anthropologist Mark Nathan Cohen has assembled anthropometric data that indicates that early settled society was more vulnerable to food shortages, and he argues that starvation from this time may have been associated with political and economic issues more than with agricultural events. There is evidence in the earliest civilizations in Egypt, China, India, the Middle East, and classical Europe of considerable concern over food supplies and the establishment of large state granaries and famine relief and transportation systems.

In China the granary system dates back to antiquity and the tribute system was well developed before the Grand Canal was opened in 611 CE linking the Huang (Yellow) River in the north with the Yangzi (Chang) in the south. Part of this supply system was destroyed by the Mongol invasion of the thirteenth century, and imperial food supply problems were complicated when first Khubilai Khan and then the Ming emperors established the capital at Beijing in the north rather than in the Huang River basin at Xi'an (Chang'an) or Luoyang, or at Nanjing on the Yangzi. In 1325 there was a massive famine that is claimed to have killed between 4 and 8 million people. Faced with



A group of children deserted by their parents line up with caregivers in the Volga district of Russia, blighted by famine circa 1921. Library of Congress.

this challenge, the rulers revived the tribute system, granaries, and famine relief work and developed them to a new level. In the great drought of 1740–1743, at a time when the European subsistence crises were still causing a substantial number of deaths, the scale of Chinese famine relief was enormous and mass mortality was largely avoided. By the early part of the nineteenth century about 400,000 tons of grain a year were transported through the tribute system to feed the northern garrisons and a Beijing population of 800,000. Although the granary system began to decline from the time of the White Lotus Rebellion at the end of the eighteenth century, transport on the Grand Canal probably peaked in the first half of the nineteenth century, on the eve of the First Opium War (1839–1842), before the British cut this vital supply link and plunged the country into turmoil and a period of famine and rebellion.

There is some dispute as to how efficient the Chinese Empire was in the period before the troubles of the nineteenth century. Modern scholars argue that living standards were much higher than in Europe until the time of modern imperial troubles.

India under the Mughals had also developed successful ways of dealing with famines before the British advance into India following Clive's victory at the Battle of Plassey in 1757. It was under British rule that economic growth slowed below the rate of population growth and per capita living standards fell to dangerous levels. There were few signs of major famine in

India before the Great Bengal Famine of 1770 under the administration of the East India Company.

As the classical urban population of the south of Europe grew in size, more grain had to be imported into these regions and the authorities became increasingly concerned about establishing granaries and other food support systems. Governments provided support to assist the transportation of grain into the major cities. Famines would occur when there was a breakdown in these supplies.

The European population then spread to the colder less hospitable areas to the north, where, given the technology of the time, the population was more vulnerable to the influence of the weather. The greatest recorded European famine was experienced in northern Europe from 1315 to 1322. Modern scholarship tends to question the Postan thesis, which presumed the existence of overcropping and soil exhaustion throughout a very large area of northern Europe. The exceptional damp weather for a number of years appears to have been the main factor. The result was massive social disturbance, food deprivation, and high mortality levels. The weakening of this generation may have contributed to the continued massive population losses from the Black Death a few decades later. Together the sharp population losses of these years appear to have caused a change in the relative values of land and labor, which probably contributed to the weakening of feudal relations and the growth of more commercial ones.



In this drawing from the late nineteenth century, Chinese farmers affected by famine take their house apart to rebuild it in a more auspicious location.

Subsequently European famines have never been so severe, although periodic subsistence crises would produce smaller-scale famines periodically down to the eighteenth century in many areas. The last of these great peacetime subsistence crises in the northern and central regions of Europe occurred in the early 1740s. The situation was worse in the extremities of Europe with major famines in Finland in 1696–1697, in Ireland in the 1840s, and in Russia in 1871, 1891, and into the twentieth century. The rest of the world experienced similar problems, but with the period of subsistence crises lasting much later, and with larger amounts of disruption to the traditional supply systems as a result of wars and colonial expansion.

Western colonialism is no longer seen as a benign process of modernizing the uncivilized world. There is a growing realization of the costs of the destruction

of the local domestic economy and of the traditional coping practices, which made it difficult for these societies to respond adequately to the serious natural and political challenges that they faced at this time. The serious famines of the 1880s and 1890s in India, China, South America, and Egypt are presented rather provocatively as “Victorian Holocausts” (Davis 2001) in which colonial administrators hindered the local government from responding to the challenges in the El Niño Southern Oscillation.

Twentieth-Century Famines

During the two major world wars of the twentieth century, both sides attempted to disrupt their enemies’ food supply channels and to cause famine and social disruption. The rationing and food securing operations of the main developed countries largely succeeded in avoiding this outcome. In several of the poorer countries in central and Eastern Europe and Asia, however, there were very serious consequences. Americans provided large amounts of food and famine relief to Belgium throughout World War I and to large areas in central and Eastern Europe and Russia after both of these wars. This did largely contain the crisis in these areas. There was, however, a major famine in Russia in 1921–1922, which was partly related to the continuation of civil war following World War I and the revolution. During World War II there was a famine in the occupied Greek islands, in the Netherlands after the Battle of the Bulge in 1944, and throughout the war in occupied and besieged parts of Eastern Europe and Russia. The famine in blockaded Leningrad is perhaps the best-known case.

In Asia World War II contributed to serious famines in China (1937–1945), India (Bengal, 1943), and Vietnam (1942–1944). In subsequent years famines have often accompanied minor military engagements between poorer countries.

There has been much controversy over the relationship between famine and Communism. While it is true that the three major famines of the twentieth century (USSR 1921–1922 with 3 million deaths, USSR 1930–1933 with 6 million deaths, and China

Man can and must prevent the tragedy of famine in the future instead of merely trying with pious regret to salvage the human wreckage of the famine, as he has so often done in the past. • **Norman Borlaug (1914–2009)**

1958–1961 with 15–20 million deaths) all occurred in Communist countries, it is somewhat superficial to blame these famines on Communism per se. Both Russia and China had frequently suffered from famines before they became Communist, and in both countries the Communist revolution had taken place during and following a period of major economic collapse that had been associated with major famines. In China this was the extended period of troubles from the 1850s to 1948; in Russia it was a shorter period, from 1917 to 1922. During these troubled periods the major cities experienced extensive famines as the state structure weakened and the traditional supply system broke down. The successor revolutionary states that were born out of these troubled times were anxious to develop the economy and rebuild supply structures.

In the railway and industrial age there appeared to be great prospects for these states, which both experienced remarkable growth in the first decades of their revolution. In both cases the second decade brought about excessively ambitious plans to escape from the poverty trap, which in combination with unexpected poor weather led to the onset of a series of factors that resulted in the largest famines of the twentieth century. Attempts were made by both regimes to conceal these “Great Leap” famines and to deny their existence. It was only years later that the true scale of these disasters became apparent.

Despite these early Communist disasters, the USSR and China did develop their economies and industrialized to a certain extent. They have proved to be no match for the advanced Western economies, but their experience in central planning was for a while highly popular in the newly independent former colonies, which were also looking for a way of industrializing in a hurry. It is the underdeveloped world that has failed to industrialize that continues to experience famine, especially in sub-Saharan Africa.

There are some scholars who claim that the Great Irish Famine of 1841–1845 and the Russian famine of 1931–1933 were both cases of genocide in which a major colonial power, Britain or Russia, attempted to weaken and control a troublesome region. Although in both cases the colonial power can be accused of

acting insufficiently vigorously to reduce the famine, there is little evidence to support the case that these famines were caused on purpose.

Famine and Disease

Before the late nineteenth and early twentieth centuries famine had always been associated with major epidemic diseases, often typhus. Relatively few people had died from starvation, because other epidemic diseases killed them first. This applied to the Great Irish Famine of 1847, the Russian Famine of 1921–1922, and the Bengal Famine of 1943. But epidemic diseases have played a less important role in subsequent famines and especially in the Soviet Famine of 1931–1933 and the Chinese Famine of the Great Leap Forward, 1958–1961. We are now in a new age of famine demography in which simple medical and sanitary intervention can greatly reduce the likelihood of death from disease. Unfortunately, this has not resulted in an absence of great mortality in famines. It has, however, reduced the scale of mortality, which otherwise would have been considerably greater.

Outlook in the Twenty-First Century

The Malthusian threat of population growth outstripping growth in food supplies has failed to be realized in the twentieth century and is unlikely to emerge in the twenty-first century.

The threat of major world wars to cause famines by disturbing major supply channels also failed to emerge in the major countries in the twentieth century, although it has been an important factor in smaller poorer countries. It would be extremely rash to presume that any major conflict in the future would have a similar result. Disruptions in food supplies to the underdeveloped world are unfortunately continuing. Famine will remain a major challenge to the world in the twenty-first century, despite the ability of the world to produce food surpluses.

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Fascism

Mussolini invented the name *fascism* for the regime he inaugurated in Italy after World War I. Hitler subsequently adopted it for his Nazi movement, and similar militaristic and reform movements in other countries are often called fascist, too. A core fascist idea was that national interests ought to override everything else; and that war or preparation for war was essential for national survival.

What is fascism? That is a question that has been debated since its appearance in the turbulent years following World War I. Defining what fascism is and, just as importantly, what it is not is crucial not only for understanding movements that appeared in the twentieth century, but also those that may arise in the twenty-first.

It is a common mistake to label any tyrannical, or seemingly tyrannical, political entity or individual as *fascist*. This applies both to premodern dictatorships and to more recent military dictatorships, which, while they may be authoritarian and oppressive, are not fascist. For while the few fascist movements that actually achieved power, such as in Italy and Germany, have been more or less tyrannical, most of the world's tyrants have not been fascists, for they do not adhere to the core beliefs of the true fascists, such as a strident antiliberalism, anticonservatism, and especially anticommunism.

A more difficult delineation can be made between fascist movements and authoritarian regimes. The concern of authoritarians is to create a strong and stable nation and they usually do not alter society in any appreciable way. While these governments may espouse some tenets of fascism, such

as anticommunism, they generally leave traditional elite structures—powerful regional families, church officials, military leaders, and entrenched economic cartels—in place. Authoritarian governments rule over a largely passive or, perhaps more correctly, pacified populace, but they do not try to reshape those masses into instruments of radical social change. True fascist movements on the other hand attempt to energize and mobilize the masses in an effort to restructure and refashion society along specific ideological lines. The historian Robert O. Paxton (2004) has argued, and this is sure to be contested, that Franco's Spain, Salazar's Portugal, and Peron's Argentina, while ruling in an authoritarian manner, never envisioned nor attempted to create a new order, a world radically transformed through “redemptive violence.”

The Emergence of Fascism

The word “fascism” is rooted in the Latin *fascis* (“bundle,”) and the *fascēs*, an ax girdled by a bundle of rods that was carried before the magistrates in ancient Rome. The *fascēs* symbolized both unity and authority as achieved through the absolute rule of law. Benito Mussolini (1883–1945), an Italian socialist turned rabid nationalist by World War I, employed the term *fascismo* to express the sentiments of those who united in support for the Italian war effort and subsequently rejected those socialists and communists who, as internationalists, opposed it. Mussolini eventually formed a movement he termed the *Fasci di Combattimento* (Combat Group), to promote what was variously termed national syndicalism, national corporatism, or national socialism (a term that was bandied about Europe after World War I and used



This 1942 broadside shows three unsigned cartoons depicting ideological enemies of Benito Juárez, the nineteenth-century, five-term president who symbolized Mexican democracy; the text comments on ideals threatened by fascist elements in Mexico. *Artistas Libres de Mexico, Mexico City, 22 Marzo 1942.*

most notably by the German National Socialist or Nazi movement).

This "Third Way," as many supporters called the path of fascism, hoped to combine the passionate nationalism of traditional conservative elites (while at the same time rejecting aristocratic hierarchies in favor of a meritocracy founded on strong male leadership) with a socialism based not on class conflict, but on a cooperation of classes that would result not only in more equitable economic distribution, but in a more unified and powerful nation. The fascists hoped to create a new order, a transformed world that eliminated or at least ameliorated what they saw as negative aspects of modernity, such as capitalism and its attendant consumerism (understood as

wanton materialism), feminism (understood as an unnatural rejection of male supremacy), liberalism, and especially communism (understood as leading to an equally unnatural social leveling that allowed mediocrity to rise to the heights of power). This rejection of the "corrupting" influences of modernity led many Christian clerics to support various fascist movements around Europe (Feldman 2008). Since Mussolini's fascist movement was the first to achieve power and notoriety, the term fascism was quickly picked up by, or attached to, a number of similarly focused groups that emerged in the following decades throughout Europe, Latin America, Asia, Africa, and elsewhere.

Fascism as a Response to Modernization

The fascist rejection of prominent aspects of the modern world led some contemporaries and later scholars to see the movement as a reactionary rejection of modernity. Consequently opponents argued that fascism was an antimodern triumph of barbarity and irrationality—little more than nihilism empowered. But such a view is at best only partially accurate. A closer look at the interrelationship of fascism, modernization, and modernity is warranted.

Modernization is a process of rapid change rooted originally in the Industrial Revolution. The many changes wrought by industrialization radically altered traditional political, social, and economic structures and patterns of behavior. For instance, urbanization and the resultant migrations of people from rural areas to cities changed patterns of work, which in turned changed traditional familial and gender relationships, often experienced against a backdrop of shockingly new cultural forms in art, music, and literature. All this change, often occurring rapidly, generated a strikingly new culture that was a tenuous fusion of remaining elements of the traditional preindustrial culture and the new industrial world. It is this fused culture that we call modernity.

While modernization originally began in western Europe and the United States, the process quickly



began occurring in other parts of the world, first generated by Western imperialism, but later through indigenous efforts to modernize traditional political, social, and especially economic structures. Although modernization as a process is fairly uniform, the traditional cultures around the world that have been and are being affected are myriad. Therefore the modernity that results from the fusion of traditional preindustrial and industrial societies will be different each place modernization occurs. It is best then to speak of multiple and culturally varied expressions of modernity.

Fascism is most likely to arise in those places where the delicate negotiation between traditional and modern elements breaks down. In other words, fascism tends to emerge where modernity fails. The fascist rejection of elements of modernity, such as unchecked capitalism, liberalism, communism, and feminism, is more than simply antimodernism. Indeed most fascist movements embraced modern technology, such as radio, film, amplified sound, planes, and automobiles, as a means not simply to return the nation to its preindustrial culture, but to transform the new industrial world into something different. Fascists are not simply rejecting modernity, but attempting to create an alternate modernity (Griffin 2007).

Core Myths and Mobilizing Passions

Recent scholarship has taken a closer look at how the fascists interpreted the modernity they lived in, and how they envisioned the alternate modernity they hoped to create. The historian Roger Griffin (in *The Nature of Facism* 1993) and Paxton (2004), while disagreeing on many issues, both see important similarities in what they term respectively the core myths or mobilizing passions of the fascists. These central beliefs impelled the creation of the movements, shaped their development, and mobilized the masses that supported them.

The fascists believed that the modernity they lived in was decadent and degenerate. It was in a state of extreme crisis approaching apocalyptic proportions.

The nation, in fact the world, had reached a historic turning point, a time of apocalypse or salvation. The degenerative forces of modernization were often associated with what was variously termed Westernization or Americanization (meaning materialism or consumerism, female liberation, indecent art and music) and, in the case of Nazism, localized primarily in the imaginary machinations of the Jews. Cleansing the nation of those degenerating forces would lead to a rebirth of the nation and indeed, a regeneration of the world. The fascists saw themselves as a chosen elite under the command of a leader to whom they were attached with near messianic devotion (Kallis 2008). The leader and the led believed they had a mission to purify modernity, often through violence that was conceived as a redemptive. The nation resurrected and the world saved, the fascists hoped to usher in a new age, an alternate modernity that would combine desired aspects of an often mythologized glorious preindustrial culture with elements of the industrial world that were desired (such as the energy of the accelerated pace of urban life, which, if properly channeled, could transform the industrial masses from a chaotic horde into a unified, mobilized, and redirected community). The fascist conception of rebirth therefore is as future-oriented as it is backward-looking, combining the myth of the golden age with the myth of the emerging new age.

The Italian scholar Emilio Gentile (1996) called this use of myth a “sacralization of politics,” and argues that fascism is a form of political religion. However, it can be counterargued that fascism also includes a secularization of millennialism, as the core myth detailed above is clearly apocalyptic, millennial, and messianic. This is certainly the case with Nazism, a movement that was interpreted by its followers as being a spiritual response to a spiritual crisis of apocalyptic proportions. They believed their leader was sent by God to save not only Germany, but also the world (Redles 2005). Millennialism itself is but one possible response to rapid and radical change brought on by any number of converging catalysts, the forces of modernization being but one. Seen in this light

Perhaps America will one day go fascist democratically, by popular vote.

• William L. Shirer (1904–1993)

fascism may be a modern variant of millennialism, secularized in some cases, still sacred in others. Most likely it is a fusion of both the secular and the sacred, since fascism, like the modernity it responds to, is a hybridized phenomenon.

The Future of Fascism

When communism fell in the late 1980s, many Eastern European countries were challenged by sudden entry into free market economies, loss of welfare safety nets, and the rapid influx of Western and especially American culture. All this rapid change was accompanied by an increase in organized crime and a proliferation of prostitution and even sexual slavery. Not surprisingly, the 1990s and the dawn of the new century have seen the appearance of fascist or at least neofascist movements in former Soviet bloc countries like Germany, Poland, Hungary, and Slovenia and in the Balkans, as well as in the Soviet successor states Russia and Ukraine (Fenner 2004).

Western Europe, however, has not been immune from neofascist or populist movements, as socialist welfare systems struggle under an aging population and increased use of immigrant labor that has generated intense resentment amongst indigenous workforces. Moreover, one can argue that the shift from industrial to postindustrial economies creates a new variation of modernity, as societies create a new cultural fusion of former industrial society with the emerging new postindustrial culture. Where this new modernity struggles to develop, fascist-oriented movements may continue to arise.

The United States, while it has never seen a single fascist movement with broad populace support, has had numerous right-wing movements that overlapped with fascism in both ideology and practice, such as the Aryan Nations of Christ and even the Ku Klux Klan (Berlet 2000). Many of these movements have had a strong evangelical Christian core, interpreting modern America as culturally decadent and morally bankrupt, and further believing that the country is both the seat of the coming New Jerusalem and a battleground with those liberal forces they believe are

threatening apocalypse. The millennial core shared with fascism is clearly there, as is the rejection of modernity and the desire to create an alternate Christian modernity, a new America cleansed of ungodly materialism, liberalism, and Hollywood degeneracy. Most scholars believe, however, that a profound political crisis, unlike any seen in U.S. history, would be necessary to take such Christian fascism from the margins to the mainstream.

The failed modernity that has occurred in much of the Middle East (western Asia) and Indonesia, and the subsequent rise of radical Islamic militancy, has led some to interpret events like the Iranian revolution of 1979, the Taliban takeover in Afghanistan, and the rise of the al-Qaeda terrorist organization as forms of Islamic fascism. Contrary to traditional fascist movements, Islamic fascists hope to resurrect, not a strong, unified nation, but a purified multinational caliphate. However, unlike actual historical caliphates, which were often models of pluralism and religious tolerance, the new Islamic fascists hope to cleanse their countries of all degenerate influences. Like earlier fascists, the degenerate forces of modernity are usually associated with the West in general, the United States in particular, and quite often projected upon the Jews of Israel. The Islamic fascists also share with other fascists an overly militarized culture that favors male dominance as being both natural and divinely inspired. The emphasis on the control or protection of women is rooted less in Islamic religion than it is in a rejection of the so-called corrupting influences of modernity. Women therefore become pawns in a game between an imagined coming purified caliphate and the corrupt modern world. Much more research, however, needs to be done to ascertain if movements such as those that arose in Afghanistan or Iran are truly a form of clerical fascism, or simply religious tyrannies that share with fascism a rejection of modernity and employ a similar symbolic vocabulary.

If we see in fascism one possible response to the rapid and radical change brought on by modernization, and if we further see modernization as an ongoing and never-ending process, then we can expect

fascist movements to continue to arise. Fascism then, unfortunately, may still have a future.

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See also Hitler, Adolf; World War II

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The term *feminism* was coined in the late nineteenth century, nearly a hundred years after Mary Wollstonecraft's pioneering advocacy of education for girls in Europe. It has come to encompass a broad range of political, cultural, and intellectual movements. An underlying vision of a more just society, where males and females have equal or equivalent opportunities for work, service, and personal development, connects feminist individuals and organizations worldwide.

In 1913, Rebecca West (1892–1983) famously wrote: “people call me a feminist whenever I express sentiments that differentiate me from a doormat or a prostitute.” Even today, it is sometimes easier to determine who the feminists are by watching their opponents than it is to describe a version of feminism that would fit all the common kinds of feminist activities. In part this is because the word *feminism* was first used in the late nineteenth century, and thus postdates many of the earliest activities and thinkers it is used to describe. As used today, *feminism* is a broad term encompassing political, cultural, and intellectual movements as well as the worldviews of individuals.

Since the early nineteenth century feminist activists in many parts of the world have sought to provide women with legal recognition, human rights, protection within the family, suffrage, maternity leave, day care, sexual freedom, equal opportunity to employment, access to health care, and dress reform, among many other issues. Some feminists turn their commitment to women's rights into full-time employment; some work as volunteers; some support political

parties, charities, nonprofits, and/or nongovernmental organizations they perceive as having a pro-woman agenda; and some simply try to act out of feminist principles in their daily lives. Individuals and organizations that self-identify as feminist have a wide variety of outlooks, histories, and agendas, with the result that there is often considerable disagreement among them. Sex work and religious obligations are among the most contentious issues of the current day, for example, while universal male suffrage was the hot-button topic of nineteenth and early twentieth century First-Wave feminism.

What connects feminists is an underlying vision of a more just society, where males and females have equal or equivalent opportunities for work, service, and personal development, and where the government provides men and women with equal or equivalent protection and responsibility. Contemporary organizations that self-identify as feminist almost universally voice and may provide support for movements seeking ethnic, racial, and class equality. Many also support the legal equality of lesbians and homosexuals, including the right to form legally recognized families. Individuals who self-identify as feminist are more divided. In any case, assigning women legal rights, access to education, sexual and financial independence, and responsibilities equal to those of men required and continues to require vast changes in the structure of families, production, government, and social interaction.

History

“First Wave” feminism began as a self-conscious organized political movement in 1848 in Seneca Falls,

This photo, labeled “Colliery lasses marching during the British coal strike,” was taken between 1910 and 1915. George Grantham Bain Collection, Library of Congress.



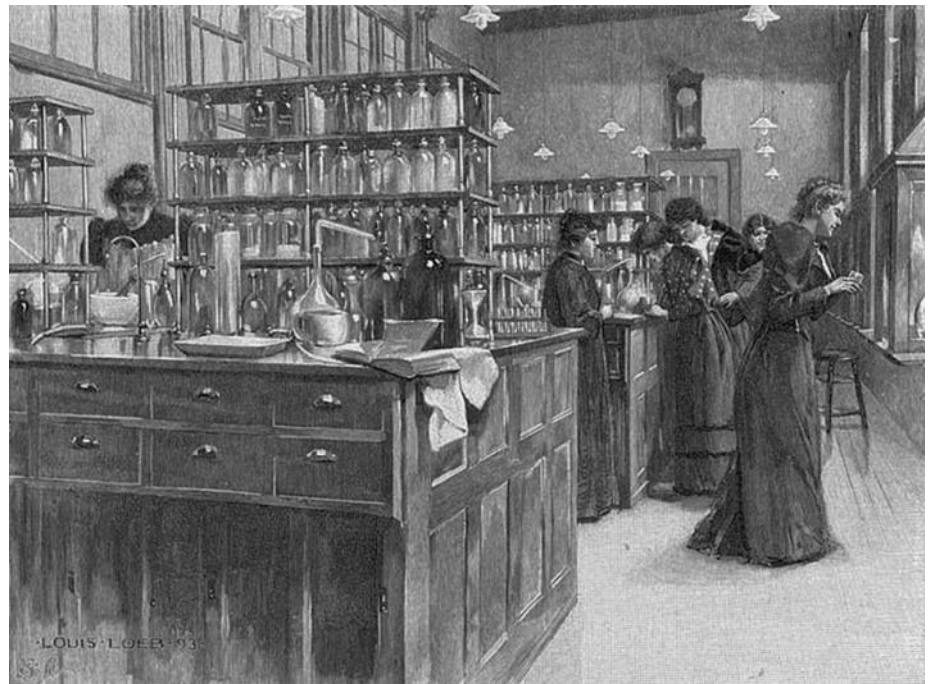
New York, where Elizabeth Cady Stanton (1815–1902), Lucretia Mott (1793–1880), and Susan B. Anthony (1820–1906) held the world’s first Women’s Rights Convention. The leaders of what would become the Women’s Rights movement published a Declaration of Sentiments modeled on the United States’ Declaration of Independence, saying that men and women were created equal under the laws of nature and of God, and that women should “have immediate admission to all the rights and privileges which belong to them as citizens of the United States.” Using the political language of Thomas Hobbes, John Locke, and Thomas Jefferson, they demanded legal and political rights equal to male citizens. Thus, although the first feminist body called itself the National Women Suffrage Organization, members actually campaigned for a variety of legal remedies. For instance, their first political victories increased married and widowed women’s ability to own property and make contracts.

Although U.S. women probably had more experience as political activists than women in other countries, women in the European and Latin American world had also been voicing feminist sentiments and supporting political movements prior to 1848. U.S. activists corresponded and worked with individuals and organizations in many other areas of the world, and newspapers around the world wrote stories and editorials about the Women’s Rights Convention and

the NWSA. The first college (Oberlin College graduated its first women students in 1841) and many of the earliest colleges to grant degrees to women students were in the United States, and the arrival of women from all parts of the globe helped disperse the political language and strategies of the women’s rights movement. Within a very few years there were organized feminists in western and eastern Europe, Brazil, and Mexico, and by the end of the nineteenth century there were feminist movements and organizations in India, China, North Africa, and much of the rest of Latin America.

Feminists were particularly influenced by Mary Wollstonecraft (1759–1797), whose *Vindication of the Rights of Women* had asserted that women deserved to have educations on par with men, as well as greater legal equality. It was Wollstonecraft’s realization that social inequalities were not simply natural, but instead at least partly created by cultural norms. Women in European society, she said, were indeed less capable than men of acting wisely and effectively to support themselves, their families, and potential responsibilities as citizens. She perceived this as being the inevitable result of weak education, however, rather than of any mental or biological incapacity of girls and women. A girl educated to support herself and to actively engage in public life would grow into a woman capable of doing so, and so the education of girls lay at the heart of Wollstonecraft’s vision for

Female students in the Department of Domestic Science—Chemistry, (1893). Illustration by Louis Loeb, engraved by C. Schwarzbürger for *Century Magazine*.



achieving women's rights. Early feminists the world over considered Wollstonecraft's ideas indispensable; the NWSA sponsored its widespread distribution, and a translation of the *Vindication* was the first book actually published by a Brazilian woman.

The campaign for women's suffrage was considered the most radical branch of the women's rights movement, and opponents described suffragists as anti-male and irrational. On the other hand, campaigns for girls' education met with less resistance. There were several reasons for this. First, as industrial economies progressed, more and more women had to undertake wage labor outside the home, making some form of childcare a necessity. Schools provided a partial solution to that problem. Second, nineteenth-century gender ideology depicted mothers and wives as housewives whose most important task was building their children's characters and educating them for citizenship in the modern world. To do this, women required an education.

Third, the image of the appropriately educated and independent modern woman was an important piece of imperialist and anticolonial ideology. The leaders of colonizing powers, of independent states resisting colonialism, and colonized elites all believed that women's dress, activities, and public presence were critical indicators of modernity and national health. Therefore, in some countries elite men made the earliest attempts

at feminist social change and created the first institutions that supported it. Muhammad Ali (1769–1849), a pasha of Egypt, supported education for girls and midwives in Egypt; affluent men organized the first Chinese movements opposing foot binding and female slavery, and tried to persuade their families to educate daughters and find educated wives for their sons. Finally, women's organizations and individual women all over the world worked hard to promote the idea that women's education was an indispensable part of modernity; in many places, the first professional jobs women held were as schoolteachers. Whether they were in India or Indonesia, these small numbers of educated unmarried women started a surprisingly large number of publications and organizations devoted to various aspects of women's interests. They made up the backbone of women's organizations in general, not just the women's rights movement. Less radical feminists organized for goals like child welfare, protection of minor girls from prostitution, support for widows, and the cure and prevention of alcoholism (so that men would not spend all of a family's income on drink or beat family members while drunk).

Not all women's organizations and movements involved themselves in overt political activism on behalf of women's legal rights, in part because there were relatively few countries where open political protest was legal, and even fewer where most



Changing role patterns: mom reads the newspaper while dad prepares dinner and keeps an eye on the family. Haarlem, The Netherlands, 1982.

adult men had the right to political participation as voting citizens. Radical women in more repressive societies like Russia and India tended to align themselves with revolutionary or independence movements as much as with women's movements. European activist women often became socialists, and in the various colonies they frequently joined women's auxiliaries of nationalist independence movements. Feminists in these movements saw women's rights as being dependent on (and naturally flowing from) political freedom for their countries as a whole.

In the 1950s, feminist movements accelerated as international independence and civil rights movements began to bear fruits in the form of decolonization and greater recognition of the human rights of minorities. Originating in countries where women already held the franchise, this Second Wave of feminism continued the work toward equal rights and the protection of women and girls so important to the First Wave. Also often called the Women's Liberation movement, the Second Wave has emphasized the importance of changing gender ideology and gender expectations feminists perceived as limiting and coercive for both sexes. Some feminists refer to the current period as a "Third Wave" of feminism, but aside from

the changing generation of leadership there seems to be no clear agreement as to how the Third Wave differs from the first.

Opposition

Feminist movements typically encounter considerable opposition, in part because even small feminist changes create large-scale social and political change. It is not possible, for instance, to simply grant women the vote and go on doing business as usual. In countries with large Roman Catholic populations, for instance, Liberal parties typically feared granting women the franchise because women supported the church more than men. When widows retain a greater share of their husbands' properties they were able to use those funds to do things like endow public buildings and charities, support political candidates, build private women's colleges, live alone, support a (male or female) lover, or any other legal activity they pleased. Laws raising the age of sexual consent or of legal marriage cause girls to marry later, have fewer children, and generally be more capable of opposing the wishes of their husbands or in-laws if they so choose. Women with access to contraception—and there continue to be many women who do not have such access—are able to choose for or against childbearing and control the number of children they have. Implementing feminist reform inevitably transforms the lives of boys and men and forces reexamination of their roles in society. Moreover, it is not only husbands but also parents, including mothers and mothers-in-law, who experience a loss of authority. Grandmothers, mothers, and mothers-in-law often hold great authority in highly male-dominated societies, so that basic feminist reforms providing greater freedom for girls and women can have the impact of removing younger women from the authority of older women. Feminism is therefore criticized as being incompatible with traditional family values.

Another current critique of feminism has been that it is a movement of middle class and Western women. For much of the history of feminism, middle class

Remember, Ginger Rogers did everything Fred Astaire did, but she did it backwards and in high heels. • Faith Whittlesey (b. 1939)

and/or educated women have made up the backbone of the movement, while the financial and social backing of wealthy women has often been critical to the survival of particular organizations. This is, however, also true of most organizations dedicated to political and/or charitable activity. Perceptions of feminism as a Western, imperialist project derive from the connections so often drawn between modernization, civilization, and women's status during the colonial period. It therefore is still the case that many organizations and individuals working on agendas that feminists would support nevertheless refuse to self-identify as feminist. This is similar to the way some women's organizations of the nineteenth century worked for "women's issues" such as education, sanitation, and other forms of social welfare while avoiding official support for suffrage.

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See also Birth Control; Liberalism; Matriarchy and Patriarchy; Nationalism; Women and Literature; Women's and Gender History; Women's Emancipation Movements; Women's Reproductive Rights Movements; Women's Suffrage Movement

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Festivals

Peoples throughout history have engaged in festivals—joyful, playful, and celebratory occasions, usually occurring at regular intervals—that often have a religious or cultural significance. Festivals can often provide an atmosphere conducive to achieving a number of societal goals, including the creation, preservation, and encouragement of societal unity.

Festivals occur in all societies and range from performances associated with major religious traditions to localized ritual entertainments and celebrations. Festivals share a sense of license and play. They allow participants to express meaning on a number of levels. Representative meaning is the first: people attempt to convey the essence of what the festival portrays. Next is an iconographic level: the thing represented, for example, is not just a bear or a woman but rather a sacred figure, a bear deity or the Virgin Mary. The next level is interpretive or metaphoric, allowing symbols to address issues in the wider society, perhaps conflict or tension.

Festivals perform a number of functions in society. The anthropologist Frank E. Manning (1983) placed festivals in the category of *celebration*. Festivals and other forms of celebration give power to those people who normally do not exercise it, providing an opportunity for people to comment on the political powers in society, for example, and to pretend or suggest that things may be other than they seem. Finally, the festival performance itself has a social and cultural context. Festivals have a cultural function; that is, they extend beyond themselves to shape identities and communities.

Often that unity must be maintained in the midst of diversity, whether of diverse people within society

or of competing political and economic interests. An example from the United States illustrates this point. Because of the massive influx of immigrants into the United States after World War I, the government published a manual of suggestions to promote U.S. national solidarity and patriotism. Basically, the manual suggested performances of festival activities to promote “Americanization” of immigrants. One suggestion was to have immigrant children climb into a giant shoe that was wheeled onto a stage. Then the shoe would be unveiled as “America.” Children wearing clothing symbolic of their home countries would emerge from the shoe, take off their symbolic caps and kerchiefs, and appear transformed as “Americans.”

The element of reversal—immigrant children transformed into U.S. citizens—is present in most festivals. Newfoundland mummers (performers in a pantomime), for example, perform for what most people would term simply “fun.” Certainly the riotous fun of their performance and its accompaniment provide a good time. But the good time allows even the most conservative members of the community to break the rules. It is a time of license, of what anthropologists refer to as “ritual rebellion” or “ritual of inversion.”

Festivals Celebrating Unity

Festivals embody the world of play, imagination, and creativity. Occasions of festival or carnivalesque license tend to reaffirm unity. They not only provide breathing room, but also point to problems within society. By holding these problems up to ridicule, festivals enable people to laugh and prod those who have the power to fix the problems.



National Powwow, 2007. Traditional Native American dances from past centuries have evolved to include contemporary aspects. Photo by Cynthia Frankenburg for the Smithsonian Institution.

The Palio festival of Sienna, Italy, is an example. The Palio is both a parade and a horse race. It is also a religious and political event. The people of Sienna use this festival to seek the regeneration of their city. The competitions that comprise the Palio—parade competition, horse races, political and religious maneuvering—are on a lower level of urban life. However, a higher level of urban life keeps these competitions within limits and works toward their resolution, leading to a restoration of unity.

Festivals of the dead are also common throughout the world as affirmations of life and unity. They frequently take place a year or more after the death of a person and involve villagers, relatives, and age mates of the deceased. The cost and preparation are enormous. The festivals feature a great deal of eating, dancing, singing, and celebrating. Revelers sing songs and tell stories that recall the events of the deceased's life. Objects associated with the deceased are displayed and may be given away. The festivals serve to renew ties within the

community, bringing together old friends, relatives, and others.

The Iroquois of western New York showed the incorporating purpose of festivals quite clearly. Among the Iroquois, prisoners were never exchanged. If the Iroquois did not kill a prisoner, they adopted him, which meant that the prisoner had to change his identity. At the next religious festival elders pronounced the prisoner's new individual name, tribe, and family to the community. The opposition between the old identity and new identity was ended in the religious festival, as was the opposition between the former prisoner and his new nation.

The Ox Dance (Boi-Bumbá) festival in Parintins, Amazonas, Brazil, is performed the last three days of June. It has become the largest and most magnificent folk festival in northern Brazil. It, too, supports the idea of seeking unity in opposition. On the one hand, it asserts *caboclo* (mestizo—a person of mixed European and Native American ancestry) identity through use of cultural and ritual themes. On the other hand,



it asserts that identity in a positive fashion as part of being Brazilian.

Anthropologists have long viewed U.S. town festivals as equivalent to public ritual in traditional society. Again the theme of a public ritual's ability to reflect community values and contemporary relations is present. For example, the U.S. West celebrates a number of festivals similar to the Frontier Days of Cheyenne, Wyoming. These festivals include competitive events that are resolved in unity, including parades, rodeos, carnivals, bazaars, livestock shows, and musical performances. These festivals unite people in a common heritage while releasing tensions and fostering pride and unity.

New Year Festivals

Many societies, most famously the Chinese, stage New Year festivals. The Chinese observe a lunar calendar; thus, their New Year falls on a different date than that of the Western calendar. A number of rituals are associated with the festival, beginning about a month before the new year starts. People begin to purchase presents to give away, special food, clothing, and decorations. The festival preparation includes a massive house cleaning, including a thorough broom cleaning to sweep away bad luck. People also repaint doors and windows, usually in the lucky color red. The Chinese then decorate doors and windows with paper decorations representing happiness, wealth, and longevity. For many people the highlight of the festival takes place on New Year's Eve. In fact, people pay greater attention to details of food, customs, and rituals on the eve of a new year than on the first day. Food such as seafood and dumplings represent good wishes. Other foods also have symbolic value: prawns represent liveliness and happiness, and fish salad is said to lead to good luck and prosperity. People usually wear red to ward off bad spirits and avoid black and white clothing, which represents sorrow and mourning. After an evening spent in family celebration, people watch midnight fireworks.

On New Year's Day married people give children and unmarried adults money wrapped in red

envelopes. Families go visiting, wishing people happiness, indicating their willingness to forgive and forget offenses and asking others to do so in return. The festival seeks to restore peace and harmony in the community.

African Festivals

Throughout history African festivals have provided people with a means for making social and political commentary, even a structured form for rebelling and changing governing policy. Into the present day these festivals have the same social functions—to keep society open and to allow for commentary on mores, customs, and political organization. African festivals fit well within the ludic framework. The song, dance, and costumes are entertaining, but their playfulness adds to the possible subversion of commonly accepted definitions of reality. These festivals both reflect and aid changes found in society, helping to ensure that changes appear to fit well within the cultural traditions of the group.

The names of these festivals may change over time, but their purpose remains familiar. During the transformation of Hausa society that resulted from colonialism, for example, the *Wasan kara-kara* ceremony underwent changes, including a change in name. During colonialism, white administrators and other members of colonial society became the butt of humor. The Hausa introduced “white masquerades” because no white man would portray another white man during an African masquerade in a derogatory manner. Consequently, Hausa masqueraders put on a white face to mimic the white colonial administrators and to satirize those with political power so that they could mend their ways.

In other parts of West Africa the Poro and Sande/Bundu associations used festivals to maintain societal order. The Poro and Sande used spirits to aid in their occupations. Similarly, the Egungun masquerade societies of Yoruba in southwestern Nigeria used spirits to establish and control social order.

Dance and Festival

Generally in Africa, a festival is not a festival without masquerade dancers. These dancers are members of religious societies. Four kinds of masqueraders exist. Each kind has a particular role: (1) to represent gods or spirits of nature, (2) to embody ancestral spirits, (3) to soothe the gods through dance, and (4) to entertain.

Different kinds of masks also exist. The animal mask is common. It has different styles and represents different forms of animals. Some masks are small and graceful, whereas others are large and adorned with swaying raffia (fiber of the raffia palm). Dancers adapt their style of dancing to fit the kind and size of the mask they wear. For example, the Ikpelweme ancestral masqueraders of the Afemai people of Bendel State, Nigeria, wear costumes that are skin tight and deeply colored. They also wear masks and headpieces made of embroidered cloth. These dancers are able to execute rapid dance movements. The Yoruba Egungun ancestral masqueraders, on the other hand, wear carved headpieces and loosely flowing robes. The masks are quite heavy and prohibit rapid dance movements.

Entertainers everywhere have evolved from ritual societies. They generally are hired to perform for a fee. They might perform, for instance, at a ritual festival, but they also might perform at a private party. They are generally obliged to sacrifice to an ancestral spirit. After the sacrifice they perform acrobatic dances, tinged with magical quick changes. They also ridicule strangers, especially any Europeans in their view.

Dance in Africa is joined with music and song and defines the function of individuals and groups within the community. In Tanzania the ritualist who circumcises a child may also perform a dance. The ruler in a complex African society must perform a formal ritual dance to state his authority. Among the Yoruba of Nigeria the ruler leads masqueraders through town while dancing within a carriage. His wives dance, as do subordinate chiefs. Then other members of society perform dances appropriate to their ranks—hunters, palace chiefs, women market chiefs, and so on until all have paid homage through dance.

Secret Societies and Festivals

The Poro and Sande associations of West Africa are generally presented as preeminent models of secret societies. However, other secret societies exist in Africa. The Egungun masquerade societies of the Awori and Egbado territories of southwestern Nigeria, for example, are of fundamental importance in the life of the people. The masqueraders play a basic role in the political life of the community, as they have for many centuries.

The Ogun festival is supposed to be a celebration of Ogun, the god of iron. However, the Yoruba masqueraders, in defiance of many born-again Yoruba Christians and the traditional ruler, use the festival to celebrate the prowess of the Yoruba people. The young men who take part in the festival assert their right to control Yoruba political life and help define the meaning of culture.

Thus, the masqueraders present another example of old forms being adapted to new circumstances, in this case, the changing political scene and the struggle between older and newer definitions of political power and culture.

Masks and Festivals

Essentially three types of masks exist. One type is worn for theatrical effect. These masks impress instantly by their size. They exaggerate reality by being larger than the wearer's body, for instance. Other masks conceal one's human individuality. The person wearing such a mask takes on another identity, usually that of a more powerful person. Finally, some masks embody power, the ancestors. Because they are so powerful, such masks are not worn. Rather, masqueraders drag these masks behind them.

People usually wear masks at religious festivals. Such festivals feature dances and music. The dances tell a story; usually the story refers to good or bad ghosts. Good ghosts aid the harvest and chase the bad ghosts who try to spoil it.

Depending on whether the main crop is grain or yam, people stage either a grain or a yam festival. A yam festival generally is held at the end of the rainy season in early August. In Nigeria and Ghana people



offer yams first to the gods and ancestors to give thanks. In Ghana people also celebrate the Homowo festival. It is a traditional harvest festival among the Ga people. The word *homowo* translates as “hooting at hunger.” It comes from the mythical origin of the Ga and refers to their migration into Ghana. On that migration they were on the edge of starvation. However, through their mutual aid, they survived. When they succeeded at producing a surplus they had their first Homowo festival. The festival includes a masquerade, with people representing various royal figures.

Characteristics of Masquerades

Each masquerade has a number of statuses within its formal structure. Each group has a particular role to play in the overall cult. The cult helps keep the political process going. Within the lineage organization of Yoruba society each family group has its own particular function. Interestingly, the Yoruba use the masquerade as the Hausa use the Wasan, namely to control the political situation.

Essentially, the masquerade is a ritual that reflects the surrounding political structure. Behind the masks of uniformity, many interests compete. Masks represent these interests. Members of different groups negotiate which groups will control various aspects of the festival and, consequently, political life. Masks identify individuals as members of competing groups who ultimately work to control political decisions.

In Ikole in southern Nigeria the official and most important festival is the Ogun festival. The Odun Egun, a biannual masquerade festival in late spring, also is important. It lasts seventeen days and features masquerades that reflect the shift in power from the old to the young. The young masquerades get to be performed more frequently than the old ones as power shifts from one generation to another.

The fact that festivals are rituals in themselves and contain a series of rituals also allows them to mask change under the rubric (rule) of continuity. Festivals are frequently centers of competition,

and the competition is incorporated within the formal structure of the festivals. By observing the same festival over time people see these changes. Festivals, therefore, both encapsulate much of the cultural history of the group and provide a means for change.

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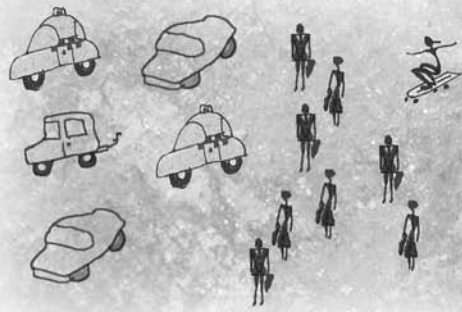
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Feudalism

Feudalism is a much-contested term in world history. Scholars most often use it to describe certain political (and sometimes economic) systems in the preindustrial world, but they have not agreed on the characteristics that define a system as feudal. As a term that is paradoxically both too vague and too precise, an increasing number of historians consider it best avoided except in very restricted historical fields of study.

Feudalism has most often been used to describe the political fragmentation and arrangements for raising military manpower that allegedly arose in Europe around the ninth century and theoretically persisted for many centuries thereafter. Most historians of medieval Europe, however—especially military historians, for whom the term should ostensibly be most germane—now consider it a misleading term that does more to obscure than to illuminate our view of the past.

History of the Term

Though based on the medieval word *feudum* (Latin for *fief*), reformers in the eighteenth century coined the word *feudalism* to describe (unfavorably) the system of rights and privileges enjoyed by the French aristocracy, especially with regard to their landholdings and their peasant tenants. This broad socioeconomic meaning was taken up and extended by Marxist historians, for whom the “feudal mode of production” succeeded the classical mode and preceded the capitalist mode. For military historians, this definition has always been far too broad. Indeed, if a privileged landholding class and a subject peasantry constitutes feudalism, then most civilizations before

the industrial revolution were feudal, and the term loses its analytic usefulness. In this sense *feudalism* also becomes conflated with *manorialism* (the organization of rural production into manors held by lords and worked by subject peasant labor).

Feudalism and Military History

Military historians have usually taken a more restricted view of feudalism. For them, it is the system of raising troops in which a lord grants a fief—typically a piece of land—to a vassal (Latin *vassus*). In return, the vassal gave the lord a defined and limited term of military service, usually forty days a year and usually as a knight—a fully armed and armored horseman. Sometimes the lord provided the armor and weapons, but often the vassal provided his own. The fief was the payment for service and was also known as “the knight’s fee.” Feudalism in this sense has often been taken as the sign of a weak central authority with limited cash resources, forced to substitute land for cash and to devolve local power to its aristocracy; in fact *feudal* is often used simply as (somewhat misleading) shorthand for “decentralized polity dominated by a powerful warrior aristocratic class.” But not all decentralized polities raised troops using land-for-service arrangements, nor were all polities that did utilize such arrangements weak, poor, or decentralized.

Indeed, these arrangements did not even characterize what has been regarded as the prototypical feudal society of northwestern Europe from the ninth to the twelfth centuries. Recent research has traced modern conceptions of feudal service to the terms and definitions of the *Libri Feudorum*, an Italian legal handbook written in the twelfth and thirteenth centuries. Its



The feudal Castle at Himeji, Japan, built in the fourteenth century and renovated in the seventeenth, is famous for the complex maze of paths leading to the main keep. New York Public Library.

academic view of fiefs and vassals became the basis for the sixteenth-century interpretations of feudal institutions that have held sway ever since. However, this picture of feudal service and the legalistic hierarchy of landholding rights associated with it does not fit the medieval evidence. *Feudum* and *vassus* were vague and mutable terms, and European military systems from the ninth to the fourteenth centuries were far more varied, flexible, and rational than conventional interpretations have supposed.

Restricted service in return for granted land was inherently limited as a basis for a military force—leaders always needed soldiers available for more than forty days a year, at the least—and this system has been overrated as the source of medieval European armies. Soldiers did serve for land, but often they were “household knights”—young men who lived with their lord and served him in military and non-military capacities—who were rewarded for long service with land of their own and served in anticipation of this reward. Even service for land already granted was far less defined and restricted than the traditional “forty days a year” formula implies. “Feudal” service (unpaid service by the vassals of a lord) worked best on an informal basis: a lord in need of armed support in his local disputes and in serving his own lord (if he had one) called together the young men who were his friends, relatives, hunting and drinking companions, and social dependents, and they campaigned together, sharing the risks and rewards of warfare.

Social cohesion in the lord’s military household (Latin *familia*) translated into military cohesion, and constant hunting and fighting together imparted small-unit skills. Restrictive and legalistic terms of service played almost no role in such arrangements.

There are also problems, however, with defining feudalism more generally as a landed support system for unpaid military service. First, individuals and groups also served for pay in medieval Europe from an early date, wherever economic conditions made it possible and even when they owed “feudal” service. Paid service became increasingly common in the period after 1050. Second, in a global context there have been many forms of “soldiers’ lands” in different times and places, in combination with paid and unpaid service. Some involved the granting, not of possession of a particular piece of land, but of income rights over the land. Income rights were often, in fact, granted from several different pieces of land. Arrangements such as these, which entailed no direct link between the military manpower supported by landed income and the peasant manpower working the lands, differ fundamentally in type from arrangements in which the warrior who was granted the land assumed legal control over the peasant population and managerial control over the output of the estate. Indeed, in some cases the military manpower supported by designated “soldiers’ lands” was not in a position of social and political dominance—it was not, in short, a warrior aristocracy, but instead

Mercenaries and auxiliaries are useless and dangerous. • Niccolò Machiavelli

constituted a sort of militia. Arrangements such as these also differ in type from those that were set up for a dominant warrior elite.

Therefore, to call all land-for-service systems of supporting military manpower “feudal” is to arrive again at an overly broad definition, akin to the problem of the Marxist definition of feudalism, which makes no useful distinctions between systems and their individual characteristics. To try to distinguish some such systems as “feudal” while excluding others has inevitably involved privileging the characteristics of the European model in order to arrive at criteria for inclusion, for no reason than that it was studied (and called *feudal*) first—a pernicious instance of Eurocentrism. Military historians are thus increasingly avoiding the term, and are turning instead to functional descriptions of the world’s (and Europe’s) varied military systems of landed support, militia service, and the social hierarchies that accompanied them.

Feudalism and Legal History

Legal historians of high medieval Europe, on the other hand, can more confidently lay claim to the term *feudal* in their sphere of inquiry: in the more settled European conditions of the twelfth century and later, the informal arrangements of an earlier age tended to crystallize into formal legal arrangements with defined terms of service and inheritance rights on the part of the vassal. This process marked the decline of “feudalism” as a viable military system, but the rise of feudalism as a fundamental legal system. Indeed, the lord-vassal tie of landholding became crucial as one of two key bonds (along with marriage, which it resembled) among the European aristocracy. The twelfth-century English system of fief law became the basis of most later English estate law and thence of modern American property law.

Feudal property law has a definite history, but perhaps because that history is so clearly tied to the specific times, places, and legal systems that generated it, legal historians—whose stock-in-trade tends to be particulars rather than generalities—have not been tempted to see feudal property law as a transcultural

historical phenomenon. The mistake for nonlegal historians is to read the legal history of high and late medieval Europe back into the political, military, and economic spheres of early medieval Europe, and then to extend that misreading to other areas of the world in the search for a general type of society.

Feudalism and Comparative History

An example of such a historical misreading is provided by the study of “feudalism” in Japan between the twelfth and sixteenth centuries. The dominance in Japan from Kamakura times of a rural warrior aristocracy in the context of somewhat weak central government has long invited comparison of Japan with medieval Europe, where similar conditions prevailed. Such comparisons have almost always been cast in terms of feudalism: since the traditional model of feudalism arose from the study of western Europe, looking for feudalism elsewhere risks shoehorning non-European histories into a European mold. This raises the possibility of misreading the evidence to find anticipated feudal characteristics, or, if a different trajectory is seen, of explaining what went “wrong” in the non-European case.

This tendency has afflicted Western views of Sengoku Japan, the period during the sixteenth century when Japan was divided into warring domains headed by daimyos, or local lords. The feudal model has led many historians to see the Sengoku age as the epitome of feudal breakdown and anarchy. Daimyo domains are equated with the small castellanies and lordships of northern France, the feudal kingdom (French and Japanese) taken as the unit of comparison because of the prominence of weak central authority in the feudal model. By emphasizing the division of the larger political unit, however, this view obscures important forces of unity and political cohesion that were developing within the daimyo domains during this period. Without the feudal preconception, daimyo domains appear more readily as independent polities within a Japan that is more akin to Europe as a whole than to any one kingdom within Europe.



At a lower level of the feudal model, the European norm has inspired numerous comparisons of the structures of warrior society—for example of Japanese landed estates with manors, and of Japanese income rights, granted to warrior families by the central government in exchange for military service, with fiefs—that often obscure the important differences between the two societies more than they illuminate their commonalities. This problem, too, is most critical in the Sengoku age, when massive daimyo armies must be explained, in the context of the feudal model, in terms of a more “impersonal and bureaucratic feudalism” than existed in Europe (J.R. Strayer, cited in Morillo 2003). “Bureaucratic feudalism” is a self-contradictory concept that dissolves on close inspection.

Application of the feudal model to Japan has also invited the equating of terms that occupy apparently analogous places in the model but that may not be so similar. The comparison of samurai to knights is the best example of this: the terms *knight* and *samurai* do not designate closely similar phenomena; the class connotations of the former make it closer to the *bushi* of pre-Tokugawa Japan. Equating samurai and knights also implies similarities between the fighting styles and techniques of the two kinds of warrior, when in fact their tactics differed significantly—especially, again, in the Sengoku age, with its samurai armies of disciplined massed infantry formations. The case of so-called feudalism in Japan thus serves as a caution against the hasty comparison of terms and models derived too narrowly from one culture.

A Term in Decline

In short, “feudalism” in world history is a historiographical phenomenon, not a historical one. “Feudal” and “feudalism” are terms that have failed to cohere into agreed-upon concepts. They purport to describe a type of society that is valid across cultures; but describing the fundamental elements of such a society entails imposing a Eurocentric privileging

of a European model that itself does not conform well to the most basic elements usual to a definition of the term. The alternative to clarity seems to be a broad definition of feudalism that fails to make useful conceptual distinctions among the societies to which the term is applied. As a result, it has become a term in decline.

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See also Early Modern World

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Fire

Humans learned to control fire at least 400,000 years ago. Cooking over fire increased the variety of foods. Fire kept dangerous animals away from campgrounds and warmed living spaces so humans could leave tropical Africa and spread round the Earth; people burned dry vegetation as they migrated to improve hunting and thereby changed natural ecological balances. No single skill did so much to expand human power over nature.

The history of humankind is closely connected with the history of fire—so closely that the connection has become almost reciprocal. Of course, fire is much older than humankind; but ever since humans learned to exert some control over it, the frequency of fire and, even more, its manifold forms have increasingly been determined by human activities. Of all the fires burning on the planet Earth today, only a tiny portion have “natural” causes; in the great majority of cases the source of ignition has been human—intentionally or unintentionally.

These observations raise a whole range of intriguing problems concerning the history of the relationship between humankind and fire. How did this relationship begin? What were the conditions that made it possible? What were the feedback effects or functions that sustained it? How has the connection between humans and fire affected the course of history?

Our image of the first phases in the human domestication of fire was long dominated by mythology—as if the stories about Prometheus or other culture heroes who allegedly had stolen fire from the gods were the last word. Today we know better: with the aid of ecology and archaeology, of anthropology and

sociology, it is possible to reconstruct the general trajectory of the historical relationship between humans and fire.

Origins

Like all natural forces, fire has a history. Chemically, fire is a process of highly accelerated oxidation of matter (fuel) induced by heat (ignition). Three conditions are necessary for it to occur: oxygen, fuel, and heat. During the first eons in the history of the Earth, at least two of these—oxygen and fuel—were absent. Oxygen did not become available in the atmosphere until life emerged between three and four billion years ago. And it was less than half a billion years ago, during the Devonian geological age, when life assumed the form of plants, providing matter suitable for burning. From then on, most places on Earth with seasonally dry vegetation were regularly visited by fire, ignited on rare occasions by falling rocks, volcanic eruptions, or extraterrestrial impacts, but mostly by lightning.

Its domestication by humans opened an entirely new episode in the history of fire. Humans thoroughly altered the incidence and intensity of fires. They brought fire to regions of the planet where it seldom or never burned spontaneously, and they tried to banish it from places where without human interference it would have burned repeatedly. Thus, increasingly, “natural” fire receded and made way to “human,” or, more precisely, *anthropogenic* fire.

Wherever humans migrated, they took their fire along. The presence of humans-with-fire deeply altered the landscape, including flora and fauna. The



Eanger Irving Couse (1866–1936), *Indian by Firelight*. When handled carefully fire can protect against the cold and keep predatory animals at bay.

human impact is amply documented (though still controversial) for Australia—a continent that was colonized by humans rather late. Everywhere on the planet, areas such as rain forests, deserts, and the polar regions that were not receptive to fire proved to be hard to penetrate for humans too.

A Human Monopoly

Humans are the only species which has learned to manipulate fire. Control over fire has become a “species monopoly,” with an enormous impact on other species, both animals and plants, and on the civilizing process of humanity itself.

Evidence about the very first phase of the domestication of fire is insufficient and open to various interpretations. The most conservative estimates are from archaeologists who hold that the oldest undisputable evidence of human control of fire can be dated back at most 250,000 years. Other scholars, such as primatologist Richard Wrangham, argue that *Homo erectus* may already have been tending the remains of natural fires as long as 1.8 million years ago. According to the anthropologist Francis Burton, the turning point may be dated at even 5 to 6 million years.

While acknowledging these controversies over the actual chronology of the first domestication of fire,

we can still draw up some defensible propositions about its “phaseology”—the succession of phases. Three phases can be distinguished. During the first phase, there were no human (or hominid) groups possessing fire; there were only groups without fire. Then, there must have been a second phase, when there were both groups with fire and groups without fire. We do not yet know how long this phase lasted, but we do know that it was a transitional stage, leading up to the phase in which humankind has now been living for thousands of generations: the phase when there are no longer any groups without fire. For many thousands of generations, all human groups have been groups *with* fire.

The three phases are connected by two transitions. The first transition was marked by the initial domestication of fire by some human or hominid groups. Apparently they found it worthwhile not just to forage at the smoldering remains of a natural fire, but to see to it that the fire kept burning. They tended it, they protected it against rain, and they “fed” it with fuel. None of these activities were programmed in their genes; they had to be learned, and then transmitted, as traits of culture. But the *capacity* to learn all this had to be there, as a set of traits acquired in biological evolution. Those traits included physical features such as a bipedal gait, flexible hands, and a complex

A little fire is quickly trodden out; Which, being suffer'd, rivers cannot quench. • William Shakespeare, from *Henry IV*

brain, as well as concomitant mental and social features such as an ability to cooperate and to defer immediate gratification for the sake of consciously conceived goals.

Considering this combination of requisite traits we may find it almost self-evident that the control of fire became a monopoly, uniquely held by humans. The full significance of the monopoly can only be appreciated, however, if we regard it also in connection with the second transition, in which the monopoly became universally human. Whereas earlier hominid, and possibly human, groups had been able to survive without fire for many thousands of generations, a time came when apparently that was no longer possible.

If this sketch of phases and transitions is realistic (and it is hard to imagine why it should not be), it leaves us with an unavoidable conclusion: human societies with fire were in the long run more “fit to survive” than societies without fire. If we then ask why all societies without fire eventually disappeared, there seems to be only one plausible answer: because they had to coexist with societies *with* fire—and in the long run that proved impossible.

Implied in this line of reasoning is the idea that a change in some human groups led to changes in other human groups. If Group A had fire, and the neighboring Group B did not, Group B had a problem. It could either try to minimize contact with Group A, or do as Group A had done and adopt a fire regime—which should not pose insurmountable difficulties as long as the potential to learn from the other group was sufficient.

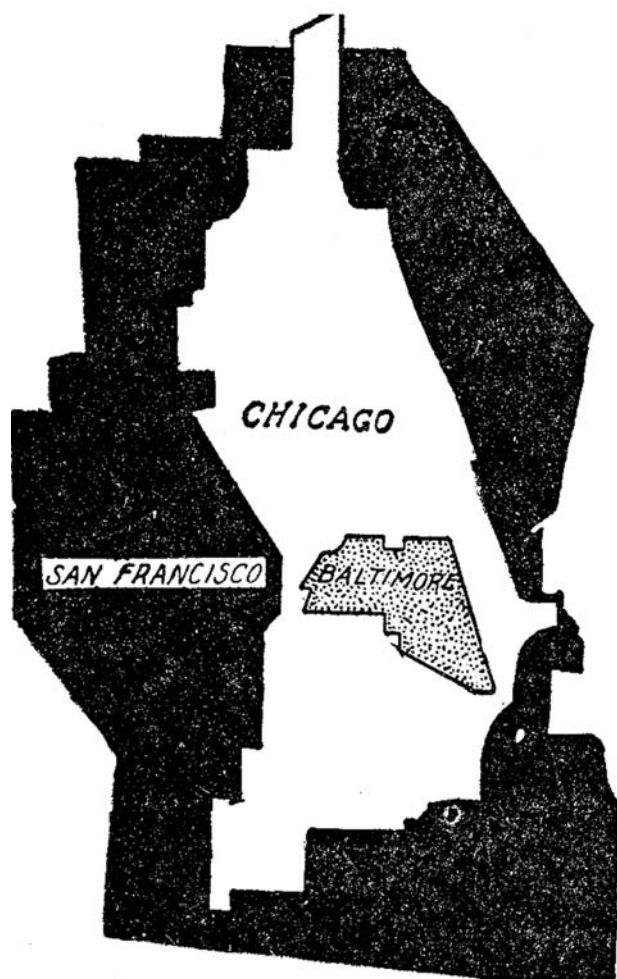
In terms of its formation and spread, the fire regime may be regarded as a paradigm for other regimes developed at later stages in human history—a paradigm in more than one sense. First of all, the regime by which humans learned to extend their care of and control over fire could subsequently serve as a model for taking care of and controlling other nonhuman natural resources such as plants and animals. Secondly, we may regard the domestication of fire as a model case in a “heuristic” or methodological sense, since it shows us some basic principles which are at work in social evolution and human history.

Hearths and Torches

The establishment of the species monopoly of control over fire amounted to a big step in the differentiation of behavior and power between humans and related animals, ranging from other primates to wolves or mammoths. As a new item in the behavioral repertory, tending fire tilted the interspecies balance of power greatly toward human dominance. The original breakthrough may have been precarious and fraught with risks; but it had far-reaching consequences—which were, of course, unforeseeable at the time. The history of the domestication of fire clearly illustrates the intertwining of intentional actions and unintended effects.

Fire became the focus of human group life in the form of the hearth. Here fire was tended and thus kept regularly available so that group members no longer had to go searching for it. Around the hearth they could create small enclaves in the wilderness where the nights were less cold and dark and which offered some protection against predators. On the fire itself they could cook their food—again a form of behavior which, like the domestication of fire upon which it is based, is both uniquely and universally human. Through the destructive force of fire, substances that otherwise would be too tough to eat, or even poisonous, could be made edible and palatable—a good example of “production through destruction” (or, to use the economist Joseph Schumpeter’s term, “creative destruction”).

A second way in which fire was used from early on was by lighting the end of a stick in the hearth and turning it into a torch. Torches could be applied to burn down dry vegetation, thus clearing land and making it safer and more hospitable for human habitation. Many prairies and similar secondary grasslands in various parts of the world were created by such burning practices. On a smaller scale, but no less effectively, humans could apply their torches to scare away big predators. Caves long inhabited by bears or hyenas were taken over by humans armed with fire.



This map shows the comparative areas of three major urban fires in U.S. history. Wherever buildings were constructed from wood, fire was a constant hazard and often spread quickly from building to building.

Fire and Socioecological Transformations

If fire was the first great socioecological transformation in human history, it was a precondition for two more that followed: agrarianization and industrialization. Both were far more momentous in scope, but neither would have been possible without fire.

The rise of agriculture and animal husbandry, or “agrarianization,” in many respects resembled the domestication of fire. Humans added new sources of energy to their own as they had done before by taming fire, this time by incorporating specific plants and animals into their societies. Certain wild plants were

cultivated, certain wild animals were tamed, and all these species were made part of the human domain, the anthroposphere.

In most parts of the world, the conversion of savannahs and forests into fields and meadows was accomplished by means of fire. Flames and smoke marked the frontiers of agrarianization—as they still do today in Amazonia and elsewhere. Often agriculture remained closely associated with burning, as in the widespread practice of swidden farming, or shifting cultivation, in which tracts of land would be periodically burned and cultivated and left fallow again for a number of years, in a cyclical sequence.

Many agrarian societies passed through a phase of shifting cultivation, but then adopted more intensive techniques of working the land with higher average yields. As these societies gave rise to villages and towns, new uses of fire and new attitudes toward fire developed. During the long first phase of human fire use, the main concern always had been to keep the communal fire burning. In the agrarian towns, however, fire was no longer scarce. Its uses became increasingly more varied. Specialized pyrotechnic crafts emerged, such as blacksmithing and pottery. Public concern now turned mainly to keeping the many fires within their containers. Fire was regarded with greater anxiety, for with the proliferation of fires the risks of conflagrations increased, and with the accumulation of property, people had more to lose. Not surprisingly, blazes figure prominently in the local histories of towns and villages.

Of course, the eventual cause of destruction always lay in the very nature of the combustion process. But with the progressive domestication of fire, this natural force manifested itself more and more through manmade fires. With all the lamps and furnaces burning in a city, one moment of carelessness might spark a conflagration. People had to rely on other people’s caution. Arson ranked second only to murder as a capital crime deserving the severest punishment. Among the worst fears of both farmers and city dwellers was to become



the victims of organized murder and arson known as war.

In the cities of medieval Europe it was mandatory to “cover” all fires before nightfall: an institution known as *couvre feu*, or curfew. The directive to cover fire almost symbolizes a general tendency in urban environments toward reducing the omnipresence of fire, and certainly toward making it less conspicuous. That tendency was interrupted for a while, however, by the onset of industrialization.

The Industrial Age

A highly significant, but rarely noticed, aspect of the original domestication of fire was the invention of fuel—the discovery that dead wood, seemingly worthless material lying around to rot, could be most valuable if it was used for burning. No other animal ever made this discovery. Nor did any other animal ever learn the great potential of fossil fuels.

During the ten thousands years of agrarianization, wood remained by far the most important fuel. This was to change dramatically in the course of the two hundred and fifty years of industrialization, starting in the early eighteenth century, when ways were discovered of exploiting other sources of fuel as well: coal, oil, gas.

Industrialization began, like agrarianization, with great displays of fire. Its frontiers were marked by the fire and smoke of steam engines driven by burning coal. Humankind was entering, to use the image of Rolf-Peter Sieferle, a newly discovered “subterranean forest,” containing the fossil remains of hundreds of millions of years of organic growth, stocked in the mantle of the Earth as unburned fuel.

Industrialization was the third great ecological transformation brought about by humans. It involved, once again, the tapping of newly exploited natural resources—first coal, later also oil and natural gas—and incorporating these into human society, as had been done before with fire and with certain selected plants and animals.

Just like the transition to agriculture, when forests were burned down to create fields and meadows, the

rise of modern industry was heralded by a huge and conspicuous use of fire. The familiar pictures of the early industrial landscape in Lancashire readily evoke the manifest ubiquity of fire, with smoke rising from the factory stacks at day, and a red glow illuminating the sky at night.

As industrialization advanced, fire continued to be important in practically every variety of industrial production; but its presence has become less prominent. The vital combustion processes tend to be hidden away, in the furnaces of power stations or under the hoods of motorcars. Partly as a result of this general tendency, cities in the advanced industrial world today are far better protected against the risks of fire than were preindustrial cities. The incidence of conflagrations in peacetime is much smaller now than it used to be until a few centuries ago. In times of war, however, the twentieth century has seen urban blazes of unprecedented size and intensity.

Current Developments

Ancient Greek cosmologists used to distinguish four elements out of which the world was composed: earth, water, air, and fire. While earth, water, and air are indispensable for all land animals, only humans have also come to rely upon fire. Furthermore, all known human groups have done so. The use of fire is not just an exclusively human attribute; it continues to be universally human as well.

In retrospect, we can detect a clear sequence in the history of humans and fire. First, there were no groups with fire. Then there were some with fire, but still none with fields cultivated for agriculture and animal husbandry. Then, there were some with fire and fields, but none with factories for large-scale industrial production. Today, all human groups take part in a socioecological regime extending over the entire planet, involving fire, fields, and factories.

For thousands of generations, the control of fire has deeply affected the human condition. It has made human groups, on the one hand, more productive and

robust, but at the same time also more destructive and more vulnerable. Seen in this light, the control over fire appears to be a double-edged sword, eliciting the same ambivalence that is typical of the present human self-image in general.

Nowadays fire is continuously present in all human societies. It is used in many different forms, some mainly ceremonial and highly visible, most others primarily technical and largely hidden from public view and consciousness. The moment we consider the part played by combustion processes in transport and production, it becomes clear how thoroughly our lives are enmeshed in structures which are kept going by fire and fuel. We live in highly fuel-intensive economies, and most fires burning today are generated by those economies. Fire has become overwhelmingly anthropogenic, or manmade. Where there is smoke, there is fire; where there is fire, there are people.

We may safely assume that every single step in the long-term process of increasing use of, and control over, fire has been the result of planned human action—of the deliberate and consciously steered efforts of individuals who knew what they were doing. It is more difficult to imagine that the increases in dependency were also deliberately planned. And it is extremely unlikely that our early ancestors in the foraging era ever drew up a comprehensive plan covering hundreds of millennia and leading all the way to our present plethora of gas furnaces and internal combustion engines; the very idea is absurd. Clearly the succession and interaction of short-term planned activities has produced long-term processes that were neither planned nor foreseen. Here is one more way in which the

control over fire can be seen as paradigmatic. It shows something of the stuff of which human history is made.

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See also Anthroposphere; Deforestation; Energy

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Food

Food is the collective noun we use to describe the vast range of animal and vegetable products that we human beings consume for nutrition and survival. At its most basic biological level, food is the fuel that is required by the body for biological functioning, and it is extracted from other organic matter in the form of energy. In order to live, we must eat food. Food also has a fundamental role in the formation of culture.

The act of exchanging food connects human beings with other species, with other human beings across diverse geographical regions, and with a notion of a divine being. Food is an integral part of world history on biological, social, and cultural levels because it is fundamental to networks of ecological and human exchange

Food connects humans with the plant and animal kingdoms within a complex web of interconnections, commonly called an “ecosystem,” thus bringing human existence into close symbiosis with the natural environment through processes of adaptation. Rock paintings in Europe, Africa, and Asia from more than twelve thousand years ago depict the collection of honey, one of humankind’s most ancient and durable foods, and represent the symbiotic relationship between flowers, bees, and human beings. From the Cheyenne people of the U.S. western plains to the Jews, from the Greeks to the Amazonians, honey has also been an enduring motif in the creation myths and legends of world cultures.

The act of exchanging food is central to social organization, to cultural identity and to religious practice. The great Hindu epic, the *Bhagavad Gita*, states that all beings come into existence from food. The ancient

Greeks worshipped Demeter (goddess of agriculture), and the Romans paid homage to their agricultural god Ceres (from whom we get the word *cereal*) in order to secure good harvests of wheat and barley. For the Aztecs, Chicomecoatl was the provider of maize from the heavens. The cultural importance of bread in both Christian and Jewish religious ceremonies is a further example of the cultural significance of food, and the Arabic term *halal* (sanctioned by Islamic law) and the Yiddish term *kosher* (sanctioned by Jewish law) remind us that rules of preparation and social interaction are guided by the sacred place of food in the human imagination. Moreover, the prohibition or reverence of certain foodstuffs in world religions (the taboo on eating beef for Hindus and the taboo on pork in Islam and Judaism, for example) speak of the symbolic role of “purity” and “pollution” in maintaining social rules of group inclusion and exclusion. In Hinduism, caste rules are maintained through complex and intricate food regulations designed to maintain social order.

Food Surplus and Emergence of Agrarian Civilizations

Archaeological evidence suggests that the earliest hominids (erect bipedal primate mammals comprising recent humans and extinct ancestral and related forms) in east Africa, *Australiopithecus afarensis*, probably ate roots, leaves, berries, and fruit as well as fish and insects that were caught by hand but that they did not consciously manipulate the natural environment. But not until the evolution of the direct ancestors of modern humans (*Homo erectus*) do we see changes in the varieties of food gathered and the



Open-air markets in Italy, famous for abundant and colorful displays, invite comparison shopping.

manner in which food procurement formed the basic structure of societal organization. In particular, in the hunter-gatherer groups of 100,000 years ago we see a way of life that was socially organized around the search for nutrition. Anthropologists have used their studies of hunter-gatherer groups such as the !Kung San of the Kalahari Desert in Africa, the Hadza of Tanzania, and Australian aboriginal peoples to provide a window into the world of preagricultural human communities. Sometimes called “foragers,” these groups had a mobile way of life with few possessions, moving from food source to food source and eating a wide variety of nutritious vegetables, seeds, berries, and nuts as well as hunting the occasional animal or catching fish. Food was shared equally throughout the social group. Depending on the availability of food in a given area, subsistence changed, and the group moved to exploit new areas for nutritional purposes. In terms of labor and energy usage,

hunter-gatherer groups have a relatively large amount of time to rest, sleep, and spend with each other in comparison with agricultural communities. For more than 90 percent of human history, the principal mode of food procurement was foraging.

The phenomenon of domesticating plants and animals with the intention of preserving food supply and the result of producing a surplus to hoard or exchange marks a fundamental shift in human history known commonly as “agriculture.” In simplest terms agriculture is the shift from food collection to food production involving what the historian David Christian calls “a shift from extensive to intensive technologies” (Christian 2004, 207). Due to the change in energy usage, the expenditure of labor power, and the fact that communities now tended to stay in permanent settlements, these practices gave rise to the emergence of the first agrarian civilizations. From the third to the middle of the first millennium BCE, these



civilizations were found only in Afro-Eurasia, first clustered around the fertile banks of the Tigris and Euphrates rivers in southern Mesopotamia and the Nile River in Egypt but later emerging in the Indus River valley of Asia and northern China. The cultivation of cereal crops and the subsequent domestication of animals in separate regions gave rise to a surplus of food that was used for hording, internal exchange, or external trade.

Food and Trading Networks

Foodstuffs were an important part of the trading networks of agrarian civilizations. Although staples such as wheat and millet in western Asia and rice in India and China always dominated internal trade, highly prized exotic and luxury food items were integral commodities of exchange along the ancient trade routes that linked civilizations. More than two thousand years ago Indian spices and coconuts were traded with the Romans in ancient Egypt via the seafaring route. During the time of trade along the Silk Roads from the Roman Empire to Han dynasty (206 BCE–220 CE) China, for example, foods such as anise seeds, dried dates, apricots, cherries, and pomegranates were exchanged. By far the most lucrative and profitable trade was in spices from the Malabar Coast of India, which was monopolized by Arab and Indian traders for centuries, pouring great wealth into the Indian Ocean area. Europeans in particular sought black pepper. In the heyday of the overland spice trade, the European demand for pepper meant that it was worth more in weight than gold, bringing social prestige to traders and bestowing wealth and opulence to cities such as Venice, which prospered during the Middle Ages to become a leading center of culture and commerce. The monopoly of the trade, however, and increasing demand for broader consumption pushed the quest to find an alternative route to the Islamic-Eurasian spice networks through European sea exploration. As an exchange good from ancient times to the fifteenth century CE, pepper typifies the manner in which specialized foodstuffs became commodities of high value in emerging commercial

networks, creating great profits for middle traders in particular. The trade in pepper ushered in the era of exploration as Europeans sought direct access to the market for lucrative spices.

The Columbian Exchange

The exploration of Christopher Columbus in 1492 did not find Indian spices but instead forged a new system of ecological exchange by which the trade in new foodstuffs would radically change global nutritional flows for the rest of human history. The opening of the sea route between Afro-Eurasia and the Americas brought together three world systems for the first time, and the European encounter with indigenous civilizations in the Americas would at once have a devastating effect on those civilizations as it also benefited the European quest for new lands, new markets, and new sources for better nutrition. The European encounter with the Americas was also a confrontation with species of plants and animals that were unknown in Europe and that had evolved in isolation due to unique patterns of evolutionary development. The subsequent transatlantic swapping of peoples, plants, animals, and diseases that culturally transformed both sides of the Atlantic is commonly known as the “Columbian Exchange.”

The discovery of new indigenous food sources in the Americas brought the emergence of new webs of commercial exchange that profoundly affected the European diet. New plant varieties, integral to the diets of indigenous Americans, Aztecs, and Mayans—such as kidney beans, peanuts, squash, peppers, pumpkins, pineapples, and avocados—were introduced to the European diet, whereas rice, wheat, barley, oats, coffee, sugarcane, bananas, melons, and olives came to the Americas from Afro-Eurasia. Of particular significance for the increase in trade to Europe was the introduction of the potato, which radically changed net yields of crops per acre, was higher in calories than any European grain, and provided a new source of carbohydrates that was to eventually become a staple food for the northern and western European working class during the Industrial Revolution. Indigenous



These drawings illustrate the variety of cooking utensils used over time and across cultures: (1) broiling sticks (Japan) and broiling fork (Sioux, North America); (2) gridiron (colonial United States); (3) stone frying pan (Korea) and frying pan on earthenware stove (Portugal); (4) soapstone baking dishes (Hupa, California); (5) pit oven (Samoa); (6) iron pan (United States); (7) boiling basket (Native American, northwest U.S. coast); (8) coiled boiling pot (Hopi, Arizona); (9) earthenware tripod boiling pot (Zuni, New Mexico); (10) shoe-shaped pot (Hopi, Arizona); (11) chafing dish; (12) rice boiler; (13) steamer.

peoples in the Andes of Bolivia were cultivating potatoes and other tubers ten thousand years ago. Maize was domesticated seven thousand years ago in the Tehuacán Valley in Mexico and produces almost double the yield of wheat. Maize was introduced to Afro-Eurasia for both human food and livestock feed, providing a new source of protein.

Sugar also was a lucrative food commodity whose production and trade were intimately entwined with the slave trade as a result of this new network of exchange among Europe, the Americas, and Africa. An expensive and highly prized commodity, sugar had reached both the ancient and medieval European worlds via Arab traders, but its production shifted to the Mediterranean by the fourteenth century. By the fifteenth century sugar production flourished in the Portuguese plantations in Algarve and Madeira due largely to the free labor of slaves who were transported from the west coast of Africa.

The opening up of the New World provided traders with an opportunity to satisfy the increasing demand for sugar as production moved to the Caribbean, where it began to thrive during the early sixteenth century. The expansion of the plantation system was

a direct result of the increasing demand for sugar in Europe. The demand increased as beverages such as coffee and tea became lower in price, lost their luxury status, and became popular with the masses. Cargo ships left Europe loaded with manufactured goods such as textiles, glass, tobacco, and gunpowder and headed for the West African coast, where these goods were bartered for slaves who were taken to the Caribbean and then to America to work on the sugar plantations. Sugar was the first major “cash” or export crop cultivated in the Americas to satisfy market demand in Europe, and its production using slave labor exemplified the exploitive nature of new global networks of food exchange that operated not to provide nutrition but rather to serve the interests of European capital and demand in a new global market.

Industrialization and Imperialism

Hence, Europeans colonized foreign lands and used slave labor to increase their supplies of food. Yet this was not a new political phenomenon. In ancient world societies with rising population growth, such

Economic reforms opened China to the world in the late 1970s. This menu at an Italian restaurant in Beijing in 2004 shows how global cuisine has permeated Chinese culture.



as Greece and Rome, an adequate domestic surplus was not sufficient to feed their own people. Through political conquest and military invasion, such empires secured plentiful food supplies from external sources. Hence, Greeks and Romans secured their wheat from Egypt and exotic fruits, such as cherries and peaches, and spices from the Mediterranean and Persia. During the modern era, however, as the population of Europe rose substantially during the nineteenth century, demand was even greater for an external food supply. That demand was created by quite different circumstances. The twin processes of overpopulation and industrialization caused mass emigrations from Europe across the Atlantic and to Australasia and a corresponding need to import large quantities of food from the rest of the world. This need created a global trade in foodstuffs on a scale never seen before in world history. In 1850 world exports of food were less than 3.6 million metric tons but by the 1880s had increased to 16 million metric tons and to 36 million metric tons by 1914.

The conversion of new lands for cultivation in places such as Argentina, Australia, and New Zealand during the nineteenth century and the appropriation of colonial food sources from Asia enabled people to import food items to Europe from overseas markets and to move bulk food items over long

distances in parallel with advances in shipping technology. Countries such as Britain shifted the focus of their food imports from exotic or luxury food items to the bulk staples that formed the basis of their diet, such as cereals, dairy products, and meat. By the early 1880s the use of refrigerated cargo ships enabled frozen animal carcasses to be exported from Australasia to Europe, allowing the export of bulk meat products. In sum this export was a movement of mass foodstuffs to feed millions of people. Moreover, the shrinking of the domestic agricultural sector in Britain in particular occurred in tandem with the consolidation of an overseas empire, creating a market for the export of manufactured goods to be traded for primary produce.

Entitlement and Deprivation

While food is an integral part of world history on biological, social, and cultural levels, it is also integral to the development of political movements, actions, and sensibilities. While the lack of basic foodstuffs due to poor harvests can lead to starvation, a natural shortage of food is not always the cause of a breakdown in food distribution mechanisms. On the contrary, food riots in world history have occurred when a breakdown in the entitlement to basic foodstuffs such as bread affected subsistence levels as a result of rising

Tell me what you eat, and I will tell you what you are. • Anthelme Brillat-Savarin (1755–1826)

prices. What the sociologist E. P. Thompson calls a “moral economy” amongst the poor develops to galvanize resistance to this deprivation, leading to a demand that prices be lowered so that subsistence levels are maintained. Protests about bread prices provided the political impetus for the events leading to the French Revolution of 1789 but they have also been a standard feature of revolutionary activity worldwide. The emphasis on the mechanisms of food distribution and exchange has also changed our understanding of famines. A widespread shortage of food leading to mass starvation has been a persistent phenomenon in world history. Famines occurred throughout Europe during the Middle Ages and the early modern period, especially in England and France, causing significant population decreases. Crop failures also caused widespread famine in China, India and parts of Africa. Nineteenth and twentieth century famines were characterized by their scale, devastating effect and the implications of political neglect. The Great Irish Famine of 1845–1849 emphasized the extent of that country’s dependence on the potato, a Peruvian tuber, but also on the pressing need for government assistance and support. The famines of the modern era have been located mainly in Africa and Asia where unequal distribution of resources and the impact of colonial rule have underscored nutritional vulnerabilities. While harvest failures and inclement weather conditions provide the precipitating conditions for mass starvation, it is often breakdowns in the distribution of available food that often leads to the inability of the poor to afford basic foodstuffs. Causes of starvation are often inflated prices for the available food and not a decrease in the overall food supply that underscores the politics of famine. The economist Amartya Sen’s famous analysis (1983) of the Bengal famine of 1943 provided an explanation of how the rural poor were deprived of the entitlement to food in a manner that the urban middle-class were not. As food prices become intimately enmeshed in the vagaries of global capitalism, food becomes a commodity to be sold and bought in a market where human need has become less important than profit.

Globalization and Crisis

These changes in the manner in which food is distributed and exchanged on the world market have meant that the need to fulfill nutritional requirements has been replaced by the needs of global capital. Food has changed from being a source of nutrition exchanged for the purposes of survival to being a commodity traded for profit in a global system of trade, a phenomenon that has benefited the West. Processes of economic and cultural globalization leading to the rise of an affluent middle-class in parts of Asia, Africa, and Latin America has seen “fast food” culture transform urban eating habits across the world. The rise of the global “fast food” outlet has been perceived as a process of rampant Westernization where the erasure of cultural differences and the transformation of local eating habits have mirrored the homogenizing effects of global capital.

The difference between global “fast food” culture and the nutritional struggle of the world’s poor could not be starker. With food prices indexed to inflation and currency exchange rates, fluctuation in value often means that the poorest communities in developing countries cannot afford it. The division between “developed” and “developing” nations and the continued prevalence of famine in parts of Africa and Asia are the legacies of this unequal distribution by which networks of commercial food exchange have favored both the appetite and the economic growth of the West. The global financial crisis was in many respects precipitated by a world food price crisis bringing economic uncertainty and social unrest to many parts of the developing world. The price of basic staples has risen beyond the reach of the poor. The specter of the bread riot has re-emerged in recent years in places such as Egypt and Mexico as a timely reminder that access to basic nutrition is a social entitlement rather than an economic privilege.

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See also Agricultural Societies; Famine; Foraging Societies, Contemporary; Pastoral Nomadic Societies

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Foraging Societies, Contemporary

Until about 10,000 years ago, humans of all cultures were foragers who gathered their food from the natural environment. Although purely foraging societies no longer exist, some peoples involved to varying degrees in economies and political systems still rely on foraging lifeways. The study of modern foragers can provide historians with knowledge, albeit limited, about the diversity of human experience.

Anthropologists call human groups who subsist by collecting foods from the natural environment *foragers*. Unlike food producers—groups who subsist by herding, gardening, or farming—foragers grow little or no food of their own. They hunt animals, fish, and gather plants, reptiles, insects, and other food-stuffs. Because their primary forms of food acquisition are hunting and gathering, they are also commonly referred to as hunter-gatherers or collectors.

For the 2–3 million years of human existence up to about ten thousand years ago, all humans were foragers, and therefore all cultures were foraging cultures. Foraging began to be replaced by herding and farming in western Asia about ten thousand years ago, and since then the percentage of humans who are foragers and cultures that are foraging cultures has steadily declined. In the modern era (since about 1750) foraging has been the primary subsistence strategy of only a very small percentage of people on Earth. As foraging peoples have come into contact with or under the rule of nation-states, many have disappeared, been absorbed into the dominant culture, or been reduced to a marginal existence on the fringes of society. Dominance by modern nation-states is now so complete that in 2010 there

are no purely foraging cultures, and there probably have not been any for several decades. Sensational claims in the media of the discovery of Stone Age peoples, such as the Tasaday of the Philippines in 1971, have proven on closer examination to be false or exaggerated. Those peoples that have continued to rely on foraging lifeways in recent times have rarely lived entirely independently and have been involved to varying degrees in local, regional, national, and global economies and political systems.

If modern foragers are so few in number and have minimal political and economic significance, why are they important in world history? They have drawn and continue to draw attention that far exceeds their numbers because they are viewed as surviving representatives of the foraging (Paleolithic) era, from whom it is often assumed that we can learn about the human past. Unfortunately, while the study of modern foragers can and does inform about the diversity of the human experience, much recent research suggests that there are narrow limits to what can be learned about our foraging ancestors from the ways of life of foragers in the present.

Distribution and Lifeways of Modern Foragers

In modern times foragers have lived on every continent except Europe, although their distribution has typically been limited to specific regions. In North America, modern-era foragers included the Inuit peoples of Alaska, Canada, and Greenland, the desert peoples of the American West; and the forest peoples of the northwest coast, the Great Basin, and the subarctic regions. In South America foragers were encountered



A Native American pictograph shows a buffalo hunt in progress.

in Amazonia, the Grand Chaco, and Tierra del Fuego. In Africa there were two major dispersals—in the tropical rainforests of central Africa and in the Kalahari Desert in the southwest. In Asia, foragers were found in the rain forests of the south and southeast (in India, Sri Lanka, Malaysia, Indonesia, and the Philippines) and in Arctic Siberia. Finally, in the Pacific, the aboriginal peoples of Australia were foragers. Among the foragers who have drawn considerable anthropological and popular attention are the Mbuti and Efe of central Africa, the San of Botswana, the Andaman Islanders in the Andaman Sea, the Copper Eskimos in Alaska, the Chukchi in Siberia, the Ache of Paraguay, the Yir Yoront and Tiwi in Australia, and the Semang and related groups in Malaysia.

Anthropologists now recognize that foraging societies are similar to one another in many ways, but they also differ in significant ways. The key difference is one of scale, with some groups being small and having a relatively simple social and political organization, while other groups are more complex, with larger populations and more specialized and differentiated social and political systems. To some extent, this variation is best viewed as a continuum, from simple to complex or, as it is sometimes labeled, from classic foragers to affluent foragers. Some of the

better-known foragers fall at the classic end of the continuum; these include the Mbuti, San, Inuit, and many Australian Aborigines. Among those at the affluent end of the continuum were the Ainu of Japan, the Tlingit and several other cultures of the Pacific Northwest, the Tiwi, and several native peoples of central and northern California.

Classic foragers lived traditionally in small, migratory bands of less than a hundred people. They moved about to seek the best living conditions and to acquire food. Movement was not random, but was based on experience and knowledge of nature. The basic social group was the nuclear family of a father, mother, and their children. Bands were formed by groups of related families and grew or shrank in size in accord with available natural resources such as water, game, and plant foods. Social relations were based on ties of kinship, friendship, and trading partnerships. Exchange was based on reciprocity, and in the absence of personal property, sharing was the rule. The division of labor was based on sex and age, with women usually doing all or most of the gathering of plants and other foodstuffs, water, and firewood and caring for the children. Men did the hunting, sometimes alone and sometimes in groups, and were usually responsible for dividing the products of the hunt and for trading with other groups. Food was consumed soon after it was obtained. Conflict was resolved through gossip, physical fights, public ridicule, and ostracism. Leadership was fluid, generally going to the person best at the task, although men with much kin support or with oratorical skills might occupy a position of informal leadership. In some cultures animism and shamanism were the religious systems, with the environment often seen as uncertain and even hostile. Religious ritual generally centered on influencing the supernatural world of spirits and other forces to look and act benevolently toward the human world.

The key difference between classic and affluent foragers was that the latter lived in richer environments and thus were able not only to collect but also to process and store food for future use. The Tlingit gathered salmon and other fish in large quantities from spawning streams, and Native American

groups in northern California gathered acorns and processed them into flour. Affluent foragers also developed more sophisticated technology to exploit the environment. The rich environment and steady supply of food led to other differences from classic foragers. Affluent foraging communities were larger and permanent or semipermanent. There was more personal property, and there was occupational specialization, with some people acting as leaders, some specializing in crafts, such as canoe making, and some acting as religious specialists. Social status based on wealth, personal abilities, and family status was the rule, and individual families were defined in terms of their place in larger lineages or clans. Leaders of these larger kin groups were usually men who were socially adept at managing kin relations and marrying off or marrying in women to create kin networks loyal to them. The economic system was based on trade, not only of goods but also of personal services. As with classic foragers, conflict was not unknown, and relations with neighboring groups were often hostile.

Impact of the Outside World

The impact of the outside world, and especially of Western colonists on modern-era foragers, has been shaped to a significant extent by several stereotypes of foragers. Perhaps the earliest stereotype, adhered to by many colonial officials, soldiers, and missionaries, was that foragers were primitive savages who were intellectually and morally inferior to the colonizers and who needed to be civilized and converted to Christianity. This view empowered colonial officials and their agents to take land and other resources, enslave foragers, relocate them, force them to convert to Christianity, remove their children for education in white-controlled schools, and enmesh them in a market economy. It also empowered scientists to study them as objects, to acquire, store, and exhibit forager material culture in museums, and in some cases to exhibit the foragers themselves or bones of their ancestors.

In many cases, what the colonists most wanted was the valuable natural resources found in the



A Tohono O'odham (Papago) woman in Arizona collects fruit from a giant cactus.

traditional territories of foragers. Those resources included sea mammals, fish, animal fur, minerals, trees, and the land itself for use in farming or ranching. Given their small numbers and lack of sophistication, foragers were rarely able to offer much resistance, and many individuals and groups disappeared either through extinction or assimilation. Perhaps the most notorious case was the purposeful hunting down and killing of the Tasmanians by agents of the British Empire, which left no pureblood Tasmanians on Earth by the twentieth century. As destructive as colonial actions were, the infectious diseases that colonialists brought with them were equally or more destructive. It is not hard to understand, therefore, why the foraging lifeway has disappeared as a distinct type of culture.



Purepecha Indians in central Mexico fish with traditional style, butterfly-shaped nets used for centuries by their ancestors.

A version of the noble savage stereotype, which developed in the 1960s, was the near opposite, with foragers idealized and romanticized as Earth's first environmentalists, living in harmony with nature. Because their numbers were small, it is true that by and large foragers have left a much smaller ecological footprint on the Earth than have food producers. But it is also true that affluent foragers often heavily exploited the environment and sometimes used wasteful techniques, such as driving animals over cliffs or netting enormous numbers of fish, to obtain what they wanted. In addition, since many modern-era foragers lived in economically marginal environments, they tended to view the environment as an uncertain and even hostile place.

Since the 1960s, as part of the broader indigenous rights movement, some foragers have used public opinion and the political and legal system to regain some rights, including political representation, control or ownership of some of their traditional territory and natural resources, and the return of their material culture and remains of their ancestors. Among the success stories are the growing indigenous rights movement in post-Soviet Union Siberia, protected areas set aside for groups in Brazil, legislation in the United States mandating the return of remains and material culture to Native Americans, the establishment of the Inuit homeland of Nunavut in northern Canada, and the legal recognition of land rights for Aboriginal peoples in Australia.

Learning from Modern Foragers

Anthropologists now generally agree that foragers in the modern era cannot be considered living guides to the lifeways of foragers of the past. This is the case for several reasons. First, no presently existing foraging society is a simple survival from the past. Rather, every society has its own history and has changed over time. Second, some contemporary foraging societies were not always foragers. For them foraging is a recent adaptation to the environment and represents a devolution from a former lifeway based on gardening or farming. Third, nearly all foragers of the modern era live in harsh environments—deserts, tropical forests, the Arctic north—while foragers in the past lived in a wider range of environments, some of which were less hostile to human existence.

Fourth, most foragers of the modern era did and do not live in isolation. Rather, they have had extensive and long-term exchange relations with other foragers and nonforagers. For example, many aboriginal groups in Australia were directly or indirectly involved in trade with the Chinese and Malay for hundreds of years. Some Bushmen groups in south-west Africa have lived a symbiotic existence for over a thousand years with neighboring Bantu-speaking farmers and herders. After Western contact, foragers in North America and Siberia were quickly drawn into the fur trade. And some anthropologists argue that tropical forest foragers such as the Mbuti in the Congo have always had trade relations with neighboring farmers.

Fifth, in the twentieth century all foragers that were not already so involved have come under the political control of nation-states and become part of local, regional, national, and global economic exchange networks. For example, forest products such as soap produced by foragers in Amazonia, bark art created by Australian aboriginals, and soapstone sculpture by Inuit peoples are all marketed internationally.

Despite these limiting factors, there is some recent research that suggests that we can learn something about the human past from modern foragers if we are



careful about what questions we ask and what information we use to answer those questions. For example, the lifeways and adaptations of modern foragers do tell us something about how humans adapt and have adapted to different and changing environments. Social relations among foragers tell us something about conflict and cooperation and the significance of kin relations in human evolution. Forager worldviews and religious beliefs tell us something about human cognitive processes. Finally, comparison of foragers with other primates can tell us something about the life course of prehistoric humans and the evolutionary processes that shaped the human journey. Research on these and other questions is in its early stages and may well produce noteworthy findings.

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Freedom

The understanding of freedom as “an absence of restraint” took shape with the Protestant Reformation in the early sixteenth century: religious freedom represented a denial of church authority. This view is vastly different from that of most cultures in world history, including Europe until the Renaissance, where freedom was understood as the opportunity to fulfill human potential.

Defining the term *freedom* poses several challenges for world historians. (Freedom is usually regarded as synonymous with liberty, the term *freedom* being a descendant of the German language and *liberty* of the French. Some commentators use liberty to refer primarily to the political context of freedom.) In the modern West (itself a problematic term, here defined as Europe and its cultural descendants in places like North America), freedom has most typically been understood in a negative sense, as an absence of constraint. In most other cultures in the world, however, as well as in Europe itself until the Renaissance, freedom was—and is—more often understood in a positive sense as representing the opportunity to fulfill potential that is latent in the human personality. This essay will first consider the modern definition, then the global (and traditional Western), concluding with some reflections on the larger significance of freedom.

Modern Definition

The dominant modern Western understanding of freedom as an absence of constraint is a consequence of numerous developments beginning with the Protestant Reformation. The assertion by Martin Luther

at the beginning of the sixteenth century that the individual conscience is the ultimate arbiter of orthodox doctrine undermined the universal claims of the Christian church. Religious “freedom” thus came automatically to represent a denial of the authority of the church. At the same time, the philosophical school of natural law—by that time a synthesis of Stoicism, Aristotelian thought, and Christian theology—began to change its focus from an emphasis on duty to an emphasis on rights. The conviction grew that the individual was an autonomous (that is, a “law unto oneself”) moral and political entity over which the church, and then the state, had only limited authority. To assert a “right,” therefore, meant to throw off the chains, or constraints, of those in either ecclesiastical or political power—hence the emphasis on negative freedom as an absence of constraint.

In its modern political form, this worldview contributed to the doctrine of popular sovereignty and liberalism. In some cases, it also contributed eventually to the rise of democratic institutions in the modern West beginning in the United States and Great Britain. To be sure, democracy had existed elsewhere as well. It may well have characterized the participatory interactions of hunting-gathering societies before the advent of agriculture. Nevertheless, most historians believe that the roots of historical democracy lie in the West, where it flourished for a short time in classical Athens and republican Rome before disappearing for 1,500 years. After reappearing briefly in the city-states of Renaissance Italy, it then took on its modern form only after the rise of the nation-state in the seventeenth and eighteenth centuries, first in the United States and Great

Eugène Delacroix, *Liberty Leading the People* (28th July 1830). Oil on canvas. The painting commemorates the rebellion that brought Louis-Phillipe to the throne. Musée du Louvre, Paris.



Britain and then gradually spreading elsewhere in the last two centuries.

The economic expression of this modern understanding of freedom as an absence of constraint was best expressed by Adam Smith's theories of liberal capitalism, embodied in *The Wealth of Nations*, published in 1776. There he argued that the most efficient and productive economy is one in which individuals in the marketplace are allowed to make choices without interference by the government. Adam Smith's views were eagerly appropriated by the middle class in Britain, intent upon removing all obstacles to free trade (thereby increasing their profits). From that time on, the philosophical basis of liberal capitalism—expressed most notably in the twentieth century by Friedrich von Hayek—has been this definition of freedom.

The social counterpart of laissez-faire economic doctrine in the modern West was the social contract theory, which began with the work of thinkers like Thomas Hobbes in the seventeenth century. This theory holds that in a state of nature human beings are entirely solitary. At some point they realize that the benefits of living together outweigh the loss of some of their natural freedoms, which sociability requires them to surrender to society. Society, therefore, is

held to be an artificial construction of the individual human will, whose purpose is to serve the interests of the individual. The individual is primary; the society is secondary. The rights of the individual thus take precedence over duty to society, the purpose of the latter now being only to serve the former.

Global and Traditional Western Views

The modern Western understanding of freedom and rights is separated from that of the rest of the world, and from the traditional Western understanding, by a vast gulf. From the perspective of most cultures in world history, freedom was understood in its positive sense, as the opportunity to fulfill the human potential. In its political form, freedom was a condition that could not be separated from its complementary partner, namely, responsibility (or duty). Like two sides of a coin, each was understood to have meaning only in relation to the other. Politics, therefore, was inseparable from morality. The purpose of government was not to cater to individual wants, but to foster a society that fulfilled the noblest aspirations of the human personality. For the early Greeks, for example, that meant serving the community through perfecting



Mural with Martin Luther King Jr. and Winston Churchill, two of the most influential leaders of the twentieth century, in Battery Park, New York, August 2001.

the rational and moral faculties. In all cases, it was assumed that the purpose of life was not primarily to serve oneself but to serve others, and the proper exercise of freedom—or choice—was therefore to carry out one's responsibility to the common good. In this understanding, politics was also education, in the root sense of the term, to "lead out" (*e-ducere*) that which is latent in each individual. Education and politics and morality, then, were intimately linked with freedom.

In its social context, this traditional, and global, understanding of freedom worked itself out in much the same way. The relationship between the individual and society was not adversarial but complementary. Freedom was understood to be not a natural attribute of individual autonomy but a gift that can exist only within the larger context of social responsibility and moral authority, without which it degrades into license. The purpose of freedom, therefore, was to carry out the responsibilities that come with each role we are called to play in life. In India, for example, those responsibilities were expressed in following the dharma (law), appropriate to one's station in life.

In the economic realm of the premodern West, as well as most of the rest of the world, freedom and politics have been closely related. In the premodern context of world history, the role of government was not usually seen as inhibiting prosperity but facilitating it. The doctrine of mercantilism, against which Adam Smith wrote his masterpiece, embodied this understanding. The freedom of merchants to conduct their business depended on the peace and security (and high tariffs) provided by the state. Whether one speaks of the economic prosperity of the Mediterranean world under the Pax Romana or the countries served by the Silk Roads, the political responsibility of states to maintain law and order guaranteed the economic freedom of merchants to trade. Obviously, of course, when the state failed to carry out those responsibilities and became itself an instrument of oppression and exploitation, the economic freedoms of the people were compromised. When that happened, prosperity usually declined, and with it the eventual power of the state as well. To some degree this paradigm still holds true, as when critics of globalization argue that the real culprit is not the global

Whatever the man in authority said, it was not pleasant. Whatever the man in authority said, it was not right. • **Sumerian Proverb**

trade itself but the absence of a global structure of law capable of punishing those who abuse their power.

In its religious forms, the positive understanding of freedom contains a fascinating paradox in which the differences between it and the negative understandings of freedom tend to dissolve. From a negative perspective, freedom manifested itself as a liberation of the immaterial soul from the constraints of the material body [for Christians, it was salvation; for Hindus *swaraj* (self rule) and *moksha* (liberation), for Buddhists nirvana (extinguishing of self)]. From a positive perspective, however, this liberation could come only by surrendering oneself entirely to one's duty or to God's will. The only way to transcend constraint, in other words, was to accept constraint. The religious realm of human freedom also raises profound moral questions about the nature of good and evil. Put simply, the freedom to choose between good and evil, or right and wrong, implies that some will choose the former and others the latter. Evil, or suffering, in this view, is a necessary price of freedom. The most famous exposition of this problem is contained in Fyodor Dostoyevsky's (1821–1881) rightfully famous chapter from *The Brothers Karamazov* entitled "The Grand Inquisitor," in which Christ returns to Earth during the Spanish Inquisition only to be arrested by the Grand Inquisitor himself and interrogated in prison. In a long monologue, the Spanish priest accuses Christ of having made a tragic mistake by giving freedom to humankind. No sooner do people have the power to choose, he asserted, than they abuse it by making choices that cause needless suffering to themselves and others. Better to take away their freedom and force them to do what is right. Since the Grand Inquisitor's proposition leads to tyranny, of course, we reject it, but often without remembering that the possibility of freedom—which insures that some will choose badly—contains a tragic imperative that can be mitigated but never eliminated.

In its artistic incarnation, freedom takes the form of the creative power of the imagination to express the deepest yearnings of the human spirit. The creative impulse in the human personality has been

evident from the very earliest transition to modern *Homo sapiens* 100,000 years ago. Tools and ceramics were made to be not only practical but also beautiful. The astonishing diversity of cultural expression throughout the world, in every realm, whether music, dance, literature, painting, sculpture, ceramics, or a host of others, is wonderful testimony to the creative power of the human imagination. Those who worry that globalization will inevitably bring about an inevitable homogenization of culture can derive some comfort from knowing that this drive for freedom will resist that process. Cultural interaction, in the end, has been both a stimulus for artistic development, as well as, occasionally, an obstacle. The Silk Roads, for example, brought many influences from West to East, and vice versa, but in all cases the cultural life of the Eurasian continent was immeasurably enriched. Some of the most splendid examples of world architecture, such as the Taj Mahal, are witness to this remarkable capacity of humankind to absorb influences from without and then produce a synthesis that represents an entirely new level of achievement.

In science and technology the exercise of freedom in developing new tools has vastly increased the power of the human species to dominate both nature and other people. In terms of the interaction between people and the environment throughout world history, freedom has made it possible for humans to control the processes of nature far more than any other animal, but has also, especially when divorced from its complementary twin—responsibility—raised the specter of the potential extinction of the species. The tragic, as well as the beneficial, potential of human freedom is perhaps best illustrated by the progress made in the last 10,000 years in technology and science. The domestication of fire, for example, brought about a much greater array of human freedoms than ever before—humans conquered the night, overcame the seasons, and migrated to all regions of the world. But fire can destroy life as well as serve it. Just as a knife can kill game, it can also kill one's neighbor. Every advance in choice brought an equivalent burden of responsibility, right down to the detonation



of the first atomic device in 1945. It was, in fact, a failure of ideas and institutions to respond responsibly to this tragic potential of science and technology that led to the terribly destructive world wars of the twentieth century. Whether the human species, at the dawn of a new century and a new millennium, will be able to balance our new technological freedom with responsibility and thus avoid extinction is an open question.

In world histories written in the nineteenth-century West, freedom was the core organizing principle for a generation of historians who inherited the Enlightenment faith in progress and saw all history as the gradual growth of human freedom. The great German philosopher Georg Wilhelm Friedrich Hegel even went so far as to remark that all human history is an unfolding of the consciousness of freedom. In the twentieth century, however, historians shied away from freedom as an organizing principle. Perhaps freedom had been so intimately linked with the nineteenth-century faith in progress—blasted to bits by World War I and II—that it no longer seemed relevant. In any case, for those involved in political movements that sought deliverance from colonialism or other forms of oppression, freedom has remained a core value. From Mohandas Gandhi to Martin Luther King to Nelson Mandela and Desmond Tutu, the human quest for freedom was far more than an intellectual exercise. Their example, and that of all those alive today who continue to struggle and suffer in the name of freedom and human rights, remind us that the highest expression of freedom is to serve the noblest values of the human spirit.

Implications

Freedom, in its negative sense of an absence of constraint, has been identified in this essay as the underlying ideology of liberal capitalism and (in the nineteenth century) of human progress. This optimistic view of capitalism, it should be said, was challenged by socialists who held that free-market competition had produced an unacceptable level of

inequality and exploitation. The ensuing conflict between those champions of capitalism on the right who defined justice in terms of freedom and those advocates of socialism on the left who defined justice in terms of equality has lasted to the present and shows no signs of disappearing. The former praise globalization; the latter attack it. Both assume that freedom and equality are incompatible, and that an increase in one can come only with a decrease in the other. The two sides might find more common ground for agreement if they were to take an intellectual bath and then change into a new suit of definitions. By defining freedom in its positive sense as human fulfillment, and defining equality in terms of opportunity rather than condition, the proponents of “capitalist” and “socialist” views of the world might discover many of their differences melting away. In addition, they would be much more likely to cooperate effectively to reduce what both find most harmful to human progress, namely global poverty. If it is true, as the nineteenth-century writer Samuel Taylor Coleridge is once supposed to have remarked, that people are usually right in what they affirm and wrong in what they deny, then one could argue that each party in this dispute is right in affirming its own definition of justice and wrong in denying the other’s. In the end, the richest fruits of freedom are to be found through a positive understanding of its deepest meaning.

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See also Human Rights; Law, Natural; Luther, Martin; Religious Freedom; Smith, Adam

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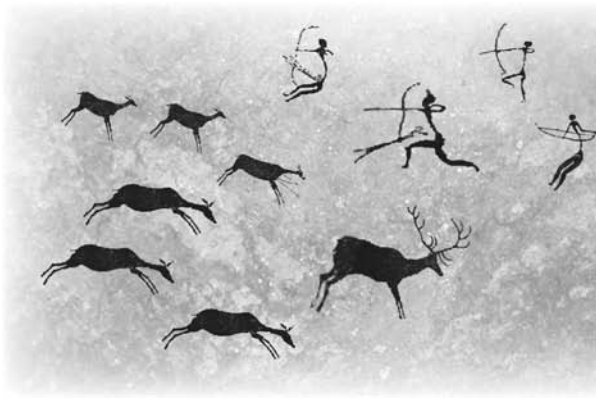
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French Empire

The French Empire, which began in the early 1600s, developed sporadically and in successive stages of gain and loss, establishing colonies in North America and the Caribbean, and in West Africa and Indochina, until it reached its heyday in the 1930s. By 1960, having lost its African colonies and Vietnam to independence, the French Empire ceased to exist.

The first French Empire was founded in the seventeenth century. Around 1600 the French had begun to travel to Asia, and in 1604 the French East India Company received a royal charter. This enterprise was not a success, however, and its activities were discontinued in 1609. In 1642 the Company of the East was founded, which never really got off the ground either. In the same period French colonization in North America (Canada, Louisiana) and in the Caribbean (Martinique, Guadeloupe, Saint Domingue) had also begun.

Under the monarchy, France built up a colonial empire of consequence, but by the end of the Seven Years' War (1756–1763) most of it had been lost. Under the terms of the Treaty of Paris (1763), France's Louis XV (1710–1774; reigned 1715–1774) relinquished to England all of France's possessions in North America to the east of the Mississippi and ceded to Spain all French possessions to the west of the Mississippi (in 1803 Napoleon would recover the latter possessions from Spain and subsequently sell them to the United States, the so-called "Louisiana purchase"). France also gave up all political claims to India. This largely put an end to the first French colonial empire. What remained, however, was the French West Indies (French Antilles), which became very

important in the eighteenth century. The pearl of the French West Indies was Saint Domingue—the French, western part of the island of Hispaniola (present-day Haiti and the Dominican Republic). The basis of the French West Indies' prosperity was sugar and coffee, grown on the islands, which only French companies were allowed to trade. The French West Indies, which produced half the world's sugar and coffee, were the richest colonies in the world. In the second half of the eighteenth century Saint Domingue became the largest producer of sugar in the Caribbean. In the 1780s it also produced half the world's coffee.

The French Revolution put an end to the economic foundation of the French colonial economy, namely, slavery. After the revolt in 1791 led by Toussaint Louverture (1743?–1803), Saint Domingue was lost to France. Napoleon reintroduced slavery, however, and tried to regain control of the island. This resulted in a war, which lasted until 1804, when Saint Domingue gained its independence and changed its name to Haiti. During the days of Napoleon (1769–1821; reigned as emperor 1804–1814, 1815), France itself became an important producer of beet sugar, and therefore the interests of the sugarcane planters overseas had to be weighed against those of the sugar beet farmers at home. During the same period, the English took possession of the remaining French colonies one by one, and only a few of them were eventually restored to France. By 1815, therefore, France had very few colonies. The only French possessions in the Indian Ocean were the island of Bourbon (called Réunion after the French Revolution) and a few trading posts on the coast of India, such as Pondicherry. On the western coast of Africa, the French held sway in a few cities in Senegal, such as Dakar, Saint-Louis, and Gorée. France's most



Joseph Parrocel, *The Crossing of the Rhine by the Army of Louis XIV, 1672 (1699)*. Oil on canvas. While the French Empire expanded to North America and the Caribbean, armies were busy on the home front. Musée du Louvre, Paris.

important colonies were still those in the West Indies: Martinique, Guadeloupe, and several smaller islands and, on the mainland, French Guyana. But they were no longer as important as they had been.

A Colonial Interlude, 1815–1881

The Bourbon monarchs, who were restored to power after the defeat of Napoleon, were not very interested in colonial expansion or in military adventures. All the same, the final act of the last Bourbon king, Charles X (1757–1836; reigned 1824–1830), was to launch an expedition to Algiers. The reasons for this are to be found in French domestic politics. The

regime was very unpopular and the only means of restoring its prestige—or so it was thought—was to launch a successful military expedition. Therefore on 31 January 1830 the decision was taken to send an expeditionary force to Algiers to punish its ruler (the dey) for an insult inflicted on the French consul.

On 14 June 1830 the French troops landed, and on 5 July the dey surrendered. It was too late, however, to save the Bourbons: Charles X fled the country after the July revolution, which brought a new king, Louis-Philippe of Orléans (1773–1850; reigned 1830–1848), to the throne. The new king did not know what to do with Algeria. The aim of the expedition had been to punish the dey, not to turn Algeria into a



Hippolyte Bellangé,
Returning from Battle
(1841). Oil on panel.
Bellangé's scene evokes
images of French troops
defeated by Abdelkader,
the capable leader of the
Algerian resistance.

French colony, although that happened all the same. The French decided to stay, and eventually Algeria became France's most important overseas possession and its one and only colony of settlement. The surrender of the dey had been quick, but it was a long time before the country was under French control. Abdelkader (1808–1883) was the very capable leader of Algerian resistance, and he defeated the French on several occasions. The French marshal Thomas Robert Bugeaud (1784–1849), who knew about guerrilla warfare from his years in Spain during the Napoleonic era, finally prevailed, eliciting Abdelkader's surrender in 1847.

A colonial administration was set up. Algeria was considered a part of France and administratively followed the French model. There were three *départements* (provinces) each with a prefect at its head, who was directly responsible to the minister of the interior in Paris. This so-called assimilation policy would later become the model for French colonial administration in general.

During the reign (1852–1870) of the emperor Napoleon III (1808–1873), France saw some colonial revival. An active policy was followed in West Africa whereby the old French possessions in Senegal formed the base for further colonial expansion. Under Napoleon III, France also became active in Indochina (present-day Vietnam, Laos, and

Cambodia). The reasons for this were partly economic (colonial expansion was increasingly seen as a means of promoting economic growth, particularly in port cities and industrial cities such as Lyons, Bordeaux, and Marseilles) and partly political: the British and Americans had become active in East Asia, and if France was also to continue to play a role there, the feeling was that it had better hurry up.

In 1859 the French took Saigon, and in 1862 the Treaty of Hue, signed by the emperor of Annam (a kingdom in the eastern portion of present-day Vietnam) granted France sovereignty over Saigon and the neighboring area. In 1863 the King of Cambodia placed himself under French protection. But, like in Africa, true French expansion in Indochina did not gain momentum until the Third Republic.

The New French Empire, 1881–1962

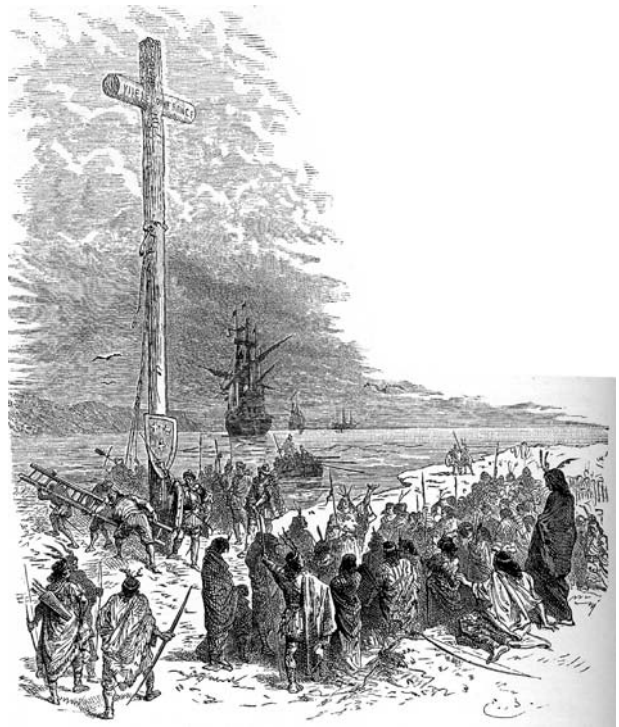
After France's defeat in the Franco-Prussian War of 1870–1871, there was only one urgent call: *revanche!* (revenge). Therefore in the beginning colonial expansion was out of the question. But by the 1880s, as revenge turned out to be an illusion, new ideas about French foreign policy developed. Propagandists of colonial expansion argued that it was possible to restore French grandeur by expansion overseas. The main advocate of this policy

was Jules Ferry (1832–1893) who served as prime minister from 1880 to 1881 and again from 1883 to 1885. Ferry was not only the man behind two major interventions (in Tunisia in North Africa and in Annam and Tonkin in Indochina), he was also a colonial theorist. His motives were partly economic (he advocated the export of capital and goods, not of people), partly humanitarian (the higher races, he reasoned, had a duty to civilize the lower ones), but primarily political: he wanted France to recover her former glory and to take up her place in the sun.

North Africa

The first French expedition was to Tunisia. An incident on the Algerian-Tunisian border provided the pretext. A French expeditionary force crossed the border and marched for Tunis. On 12 May 1881 the bey (head of state) of Tunisia signed the Treaty of the Bardo, which placed Tunisia under French protection. The protectorate was a new concept, and implied that the bey would remain sovereign in name. In fact, however, the French representative (with the title of resident-general) was all-powerful. The protectorate formula was later also used in Indochina and Morocco. It was a break with the French tradition of assimilation and direct rule, though in actual practice the protectorates were almost as strictly controlled by the French as the colonies proper.

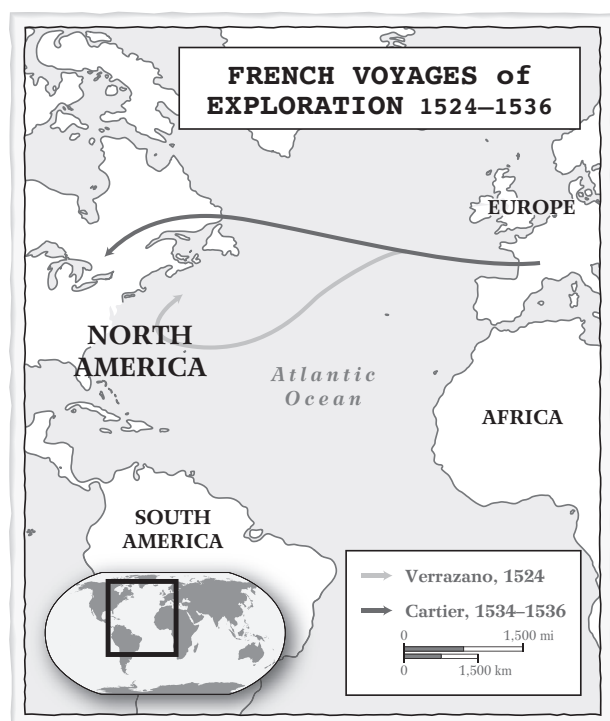
With the acquisition of Tunisia the eastern border of Algeria had been secured, but not the western border, with Morocco, and thus that country now became of compelling interest to France. The Sherefian Empire, as Morocco was known at the time, was in decline in the nineteenth century. European penetration took place in an informal way, by economic influence and special privileges for Europeans. Spain, Italy, Britain, and Germany were France's competitors for influence in Morocco. France compensated Britain for giving up its claims in Morocco by permitting Britain a so-called free hand in Egypt; Italy was compensated in the same way with Libya. Spain was promised a part of Morocco, and after two major diplomatic crises, Germany was compensated elsewhere (in western



Jacques Cartier claiming Canada for the King of France in 1534. The French Empire expanded sporadically; by the seventeenth century it also included Louisiana.

Africa). After that it was possible for France to install its protectorate in Morocco in 1912. However, it took a long time before the whole of Morocco was effectively brought under French control. The name of Louis-Herbert-Gonzalve Lyautey (1854–1934), the first resident-general of Morocco, is inseparably connected with the subjugation of Morocco.

In 1911 Algeria's population was 5 million, 715,000 of them Europeans, of whom 500,000 were French. The European population was concentrated mainly in the cities, the most important of which were the capitals of the three *départements*: Algiers, Oran, and Constantine. There were also colonists elsewhere who engaged in farming and winegrowing; the state put free land at their disposal. After the Franco-Prussian War of 1870–1871, most of those who took advantage of this opportunity were Frenchmen emigrating from the regions of Alsace and Lorraine that had been transferred to Germany. Tunisia's population was much smaller. In 1911, of a total population of just over a million, there were 148,000 Europeans (the great majority of them Italians, not Frenchmen). In Morocco, European immigration had



also been concentrated in the port cities. In the three years between the establishment of the protectorate in 1911 and the outbreak of World War I in 1914, the European population grew from nearly 10,000 to nearly 50,000, of whom 25,000 were French.

Agriculture (grain, wine, tobacco, and olive oil) was important everywhere in North Africa. There was no industry to speak of, though phosphates were important in Tunisia. In Morocco their presence was known, but it was not until 1914 that the Service des Mines first started prospecting. France controlled foreign trade. Algeria was responsible for two-thirds of all trade from North Africa. Before 1914 Morocco's economy was hardly developed, the value of its foreign trade being only one-sixth that of Algeria.

Algeria had been conquered in order to restore the prestige of the monarchy, Tunisia in order to restore the prestige of the nation. In neither case there had been a grand design. Morocco was a different matter. It was part of a geopolitical concept that had been developed in the 1890s by the *parti colonial*—the French colonial lobby. According to that vision, North Africa had to be turned into a new France on the

other side of the Mediterranean, and French West Africa was to form the hinterland for that.

French West Africa

The French presence in West Africa goes back to 1659, when Saint-Louis was founded, on the mouth of the Senegal River. In the 1850s Senegal became the starting point for French territorial expansion into West Africa. French colonial policy in West Africa was dominated by the military, which often ignored the wishes of and orders from Paris. It aimed at penetrating Africa via the Senegal River, eventually reaching from the Upper Senegal to the Upper Niger. This policy led to a series of wars with local Islamic empires that lasted until the end of the 1890s. In February 1890, Ségou, the capital of the Tukolor Empire, was taken by the French without much difficulty. This broke the power of its ruler and actually put an end to the Tukolor Empire. Meanwhile the French had become entangled in a much more protracted and difficult conflict with the man who would become their most formidable opponent in West Africa: Samory.

Samory (c. 1830–1900) was a born leader with great military and organizational skills, and he built a big empire in West Africa. French expansion brought them into conflict with him. This led to a number of campaigns and battles in the years 1881–1885 that turned out badly for Samory because of the superiority of French firearms. Therefore on 28 March 1886 he concluded a peace and trade treaty, the terms of which included the demarcation of the borders between the French sphere of influence and that of Samory. In May 1891, however, Samory broke with France after a series of border incidents. This marked the beginning of the so-called Seven Years' War against Samory. After a long interlude from 1894 to 1898, the French launched a new campaign in the spring and summer of 1898, and on 29 September Samory was captured. The French governor banished him to Gabon, where he died of pneumonia on 2 June 1900. In the meantime France had also acquired possessions on the Côte d'Ivoire and in Dahomey. After a delimitation of the French and British spheres of

Patriotism is when love of your own people comes first; nationalism, when hate for people other than your own comes first. • **Charles de Gaulle (1890–1970)**

influence, the French became masters of the majority of West Africa.

The French territories in West Africa originally consisted of a number of separate colonies. These were later united to form one large federation, *Afrique Occidentale Française* (AOF), or French West Africa. The total area of the AOF eventually amounted to 4,674,000 square kilometers (in 1919). This made the AOF by far the largest colony in Africa, covering a territory more than eight times that of France itself. With a population of 12 million people, the AOF was the showpiece of French Africa. It was a federation consisting of the former colonies of Senegal, Côte d'Ivoire (Ivory Coast), Dahomey, Guinea, Upper Senegal–Niger (in present-day Mali), Mauritania, and Chad–Niger. The governor-general, who exercised total power over these territories, had his seat in Dakar. The governors of the various regions were subordinate to him. Although local rulers were kept on at first, they were gradually phased out. The kingdom of Abomey, for example, was abolished in 1900 simply on the orders of the governor of Dahomey. It took a long time, however, for the whole of the AOF to be brought under French control. The rain forest regions and the Sahel (semiarid edges of the Sahara) were particularly difficult to subdue. The decisive phase in this process took place between 1908 and 1912. In Mauritania pacification took even longer to accomplish.

Trade in French West Africa consisted mainly of bartering. The trading houses supplied European goods (textiles, hardware, trinkets, as well as weapons and liquor), and exchanged them for African agricultural products (peanuts, palm oil, rubber, and ivory). Trading houses from various European countries were active at first, but trade gradually became the near monopoly of a few large French enterprises. In the Sudan and Senegal these companies came mainly from Bordeaux, those active on the coast of Guinea chiefly from Marseilles. There was relatively large-scale public investment in the AOF, in any case more than in the French Congo. In 1914 the total length of the railway network in use in the AOF was 2,494 kilometers. These lines had been funded primarily by subsidies from France or loans guaranteed by the

colonial government. There was very little mining. French West Africa was therefore of limited economic importance.

French Central Africa: The AEF

After the Berlin Conference of 1884–1885, in which European colonial powers negotiated the future course of central Africa, two Congos came into being: the French Congo and the Congo Free State of the Belgian King Leopold II (1835–1909; reigned 1865–1909). Initially the French Congo comprised various administrative units—Gabon, Congo, Shari, and Chad—which were governed in different ways. In 1906 a federation was established, and in 1908 a governor general was appointed for the territory that in 1910 would be renamed *Afrique Equatoriale Française* (AEF), or French Equatorial Africa. This federation consisted of three colonies: Gabon, Middle Congo, and Ubangi-Shari. Its total area—2,510,000 square kilometers—was slightly more than half that of the AOF. With only 3 million inhabitants, it was sparsely populated and of very limited economic importance.

Madagascar

The interest France took in Madagascar, most of which was ruled at the time by the local Merina kings, was prompted mainly by Catholic missionaries and by the French colonists on Réunion. After some incidents in which French inhabitants were killed, the decision was taken to send a French force to the great island. In December 1894 the navy occupied the harbor of Tamatave and several other ports. A large expeditionary force was raised. On 26 September it reached the capital, which surrendered a few days later. The next day the treaty was signed that made Madagascar a French protectorate. But the protectorate system did not work out well: revolt and anarchy were the result of it. On 20 June 1896, Madagascar was annexed, and in September a governor-general was appointed, in whom all military and civil authority was vested. This governor-general was Joseph Gallieni (1849–1916); his second-in-command was Hubert Lyautey. Together they set about pacifying the island. By the



time Gallieni left the island in 1905, it had largely been brought under French control.

Indochina

The French presence in Indochina went back to Napoleon III's Second Empire, when Cochin China (in present-day southern Vietnam; the region had been ruled by the emperor of Annam) was acquired and Cambodia came under French protection. This was the starting point for a further expansion of French power. During the Second Empire, expeditions had already been undertaken from Cochin China—via the Mekong and the Red River—to the north, in the direction of China. These were resumed after 1870. A fleet was brought together, the Gulf of Tonkin blockaded, and an army of four thousand men was raised. On 18 August 1883, Hue, the capital of Annam, was bombarded and occupied. On 25 August a treaty was concluded, whereby Tonkin was separated from Annam and brought under French rule. Annam itself became a French protectorate. Revolt broke out in Annam in 1885, but it was put down with the capture of the emperor of Annam in 1888. Rebellion in Tonkin was more protracted, lasting twelve years and falling into two phases. In the first phase (1885–1891), the French military presence was very limited, being confined to no more than a few posts and a number of mobile columns deployed to pursue the enemy. In 1892 a new phase began with the arrival of Gallieni. Pacification was now taken in hand systematically, reaching a successful conclusion in 1898. From 1892 to 1896, Gallieni held the reins, and from 1894 he was assisted by Lyautey. These two men are remembered as the greatest generals in French colonial history.

In 1891 the whole of Indochina was placed under the supervision of a governor-general. Subordinate to the governor-general were the lieutenant governor of Cochin China and the *résidents-supérieurs* in the remaining territories, who were charged with the day-to-day running of the government. The remaining power structure of the Annamite monarchy was dismantled. Tonkin was completely separated from

Annam and was administered as a colony rather than as a protectorate.

The last—and largest—of the five territories of French Indochina to be brought under French rule was Laos. The various Laotian principalities had been subjected to the suzerainty of their neighbour countries, with Siam being the most important of them. In 1889 a treaty was signed by France and Siam which recognized French influence in Laos. This treaty however did not bring a definitive solution for the Franco-Siamese rivalry over Laos and in 1893 an armed conflict came into being. By the Treaty of Bangkok (3 October 1893) Siam accepted the French claims on Laos.

Economically and financially, Indochina presented a paradoxical picture. Although the government was rich and the levels of public investment were relatively high, the economic importance of the area was small and French private investment and trading activities remained limited. The reason for the government's wealth was simple: The tax burden on the Indochinese population was high. The consequences of this were predictable: protests and resistance, which in turn, fueled the nationalist movement.

When pacification had been completed, Paul Doumer, who was governor-general from 1897 to 1902, set up a new fiscal system. In place of the old Annamite poll tax and forced labor, direct taxes were introduced, namely, a land tax and a personal tax. The most painful burdens, however, were the government monopolies of opium, liquor, and salt. The salt monopoly in particular encountered a lot of resistance. Administratively, the system was a success, however. There was a budgetary surplus, and the budget of Vietnam even exceeded that of Algeria. The surpluses made it possible to float colonial loans, creating a substantial public debt. Government revenues also made it possible to invest heavily in the infrastructure. Because private capital was not forthcoming, the government offered financial support and developed initiatives itself. The largest project was the construction of the railways.

From World War I to the End of the Empire

With the acquisition of Morocco the French Empire had almost reached its final form, although there was still somewhat more to come. After World War I the colonies of defeated Germany were divided between the victors. Thus France acquired half of Togo and almost all of Cameroon. The Ottoman Empire, also defeated in the war, lost its former territories too: Syria and Lebanon became French mandates.

In the 1920s the French Empire—and Algeria and Indochina in particular—became of increasing economic importance, but like all tropical colonies, the French possessions suffered heavily from the depression of the 1930s. In the same years the French finally acquired a colonial consciousness. They had had an empire for quite some time without being very much aware of it. Now this changed. The great colonial exhibition in Paris of 1931, which colorfully evoked the size and variety of the French Empire, strongly contributed to this awareness.

Thus the 1930s were the heyday of French colonialism. But even in that decade the end of the empire had already become visible. Nationalist movements in the colonies were growing in importance, particularly in Vietnam, where it had begun as early as 1904. The soldiers who returned to Africa from World War I's Western front were also influenced by nationalist ideas. World War II was the shock from which the empire would never recover. During the Japanese occupation of Indochina, the nationalist leader Ho Chi Minh (1890–1969) waged guerrilla warfare against the Japanese. After the war he wanted independence. Negotiations with France broke down, resulting in a war that went badly for France. After a military disaster at Dien Bien Phu in 1954, the French withdrew from Indochina. In 1956 Morocco and Tunisia, and in 1960 all French colonies in Sub-Saharan Africa became independent. The bitter war that had broken out in 1954 in Algeria ended in 1962, with Algeria's independence. It had also brought about regime change in France itself, with

the establishment in 1958 of the Fifth Republic. The French colonial empire was no more.

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See also Napoleon; Napoleonic Empire; Revolution—France; Revolution—Haiti

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Frontiers

Throughout civilization frontiers have served as boundaries between strong states and stateless societies, or between populous and sparsely populated areas. Frontiers have been crucial for defense, and for cultural exchange and trade. But the development of frontiers has had devastating effects on indigenous populations residing in them and has resulted in ecological degradation.

The term *frontier* is used to denote the boundary between a society with a strong state structure and a society without a state, or, in some cases, the boundary between highly populated and relatively unpopulated regions. Frontiers have existed since the beginning of civilization and have played an important role in the interactions between different types of societies. Historically, the Roman frontier in western Europe against the Germanic tribes fostered the growth of militarism in Roman society; the vast stretches of Siberia conquered by Cossacks and other Russian pioneers from the late sixteenth century onward led to the creation of a highly centralized state; and the North American frontier from the seventeenth to the nineteenth centuries has, according to some, made the United States unique, different from western European societies.

How interaction across the frontier was regarded depended on which side one occupied. On the one hand, stateless societies have been eager to trade with or raid the more highly structured societies on the other side of the frontier, since highly structured societies tend to be richer in material goods than less complex societies. On the other hand,

although trade and other exchanges were often essential to both sides, structured states generally disdained and feared those on the other side, whom they considered barbarians. On occasion the less highly structured societies have conquered the states across the frontier. For example, in the thirteenth through fifteenth centuries, the Mongols, a frontier people from the north of China, conquered both the Chinese and Arab civilizations, bringing destruction but also creating one of the most extensive land empires of human history, and thereby making possible widespread trade and contacts between civilizations on the Eurasian landmass in ways that had not occurred before. Thus, an Italian merchant such as Marco Polo could travel from one end of the landmass to the other and back, bringing tales of European society to the Mongol court and tales of Asia home to Venice.

Military Considerations

Civilizations tried to protect themselves from marauders from the other side of their frontiers, with uneven success. Attempts at protection brought about some of the most important military engineering works in human history, such as the Great Wall of China, initially built around 200 BCE by the Qin emperor and later elaborated upon, especially during the Ming dynasty (1368–1644). Another famous wall meant to keep out barbarians was Hadrian's Wall, a Roman defense built in Northumberland, Britain, in 122 CE. The Romans built other defensive walls, called *limes*, in the first century CE on the central European frontier. Walls alone were never enough; they had to be supported by forts and, most



Attempts at protecting frontiers fostered important feats of military engineering, such as China's Great Wall.
Photo by Thomas Christensen.

importantly, by alliances with peoples on the other side of the frontier. Although tribal peoples were able occasionally to raid their neighbors across the frontier, usually the armies of those neighboring states were militarily superior. Only when strong states grew weak, as happened to Rome after 200 CE and to China at various points in its history, were tribal peoples able to overcome and conquer them. After the seventeenth century, the development of field artillery gave states the upper hand, and no stateless society was able to conquer a state again. The last victory for tribal peoples was the 1644 Manchu overthrow of the Ming dynasty in China; like the Mongols before them, the victorious Manchu embraced the state structure and established the Qing dynasty (1644–1911/12).

Along most frontiers there lived marginal people who moved between the stateless societies and the states, living at different times in either society. They served as buffers between those on either side and, when mobilized by the states, as troops. In Russia,

the Cossacks, peoples living in the northern regions between the Black and Caspian seas (and later along the Dneiper and Don rivers in western Russia) explored Siberia and served as the Czar's troops from the sixteenth century onward. Although the Russian state made use of them, it also feared them, and they came to have a reputation as unruly rebels. The Cossack Ermak, who initiated the conquest of Siberia, had been a river pirate before working for Ivan the Terrible (1530–1584). Likewise, in the nineteenth century the gauchos of the pampas in Argentina and the *llaneros* of the tropical plains of Venezuela and Colombia served as the soldiers of the patriot forces that liberated the continent from Spanish rule. They were the quintessential tough marginal peoples who, habituated to hard living on the frontiers, were superb soldiers.

Cultural and Economic Exchanges

Although much of the information we have on frontiers relates to defense (for defense preoccupied the



states, and it was the states that wrote the histories), frontiers have also been areas of vital cultural change and important in economic terms. Stateless societies adopted the cultural practices or technologies that suited them (such as ironworking), and on occasion the states adopted elements from the stateless societies (as with the Chinese court's adoption of "barbarian" musical modes or European colonists' adoption of the foodstuffs of the New World, introduced to them by the indigenous peoples). Frontier peoples also often provided labor, either coerced—prisoners of war were turned into slaves or serfs—or voluntary.

The North American Frontier Myth

One of the great frontiers was the one created in North America with the coming of the Europeans. Like the Russian frontier, the North American frontier engendered many myths that provided a sense of national identity. The U.S. historian Frederick Jackson Turner (1861–1932) asserted in 1893 that the United States was defined by its frontier. According to Turner, the frontier inspired and elicited individualism, democratic values, and vigor as the settlers moved westward. In his view, the most valued characteristics of the United States came from the struggle to claim new land from indigenous peoples and adverse conditions. Although a popular and enduring national myth, this analysis has many flaws. In the American South, for example, frontier development went hand in hand with slavery—a fact that does not sit well with the notion of the frontier as a place of democratic values. Nor did Turner's analysis address the moral problem of displacing the land's original inhabitants. By the time Turner wrote his essay, the frontier had effectively closed in the United States, but his analysis nevertheless resonated deeply and maintained a powerful hold on the national consciousness.

Frontiers and Environmental Degradation

Although the development of the North American frontier had calamitous effects on the Native

American populations, it and other frontier development from the late nineteenth century onward have had another devastating effect with long-term consequences: environmental degradation. Ill-conceived farming practices in the Great Plains resulted in the dust bowls of the 1930s; intensive cultivation of cotton along tributaries of the Aral Sea in Central Asia have reduced the sea's volume by 75 percent. Industrial development in Russia's Siberian frontier has resulted in extremely polluted sites, threatened the survival of wildlife, and affected the health of inhabitants. The development of the last great frontier, the Amazon, continues to be plagued by environmental problems, as mining brings with it such ills as mercury contamination, and the establishment of ranches and large-scale agriculture results in erosion and species loss. As with the development of earlier frontiers, it is indigenous populations and the marginal frontier populations that suffer the negative consequences of current frontier development most heavily.

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See also Frontiers vs. Borders; Imperialism; State, The

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Frontiers vs. Borders

The terms *frontier* and *border* can sometimes be synonymous, but historians make distinctions between them. Frontiers are areas of interpenetration between societies, while borders are established by states to separate their subjects and territories from other political jurisdictions.

Although people often use the terms *frontier*, *boundary*, and *border* interchangeably, and in some forms of usage the terms can be regarded as synonyms, historians have emphasized important distinctions between frontiers and boundaries. Frontiers are, above all, zones of interaction. They can arise as a result of cross-cultural encounters, population movements, and the absence of state authority or an effective monopoly of violence. The historian Leonard Thompson has defined a frontier thusly: "In our usage, a frontier is an area of interpenetration between societies. It contains three elements: a territorial element, a zone or territory as distinct from a boundary line; a human element, comprising peoples of initially separate and distinct societies; and a process element by which relations among such peoples commence, develop, and eventually crystallize. A frontier opens with the first contact between members of these two societies. It closes when a single authority has established political and economic dominance . . ." (Lamar and Thompson 1981, 87).

In contrast, boundaries are established by states to separate their subjects and territories from other political jurisdictions. The political geographer Ladis Kristof defines a boundary as the "outer line of effective control exercised by the central government" (Kristof 1959, 270). Borders are legal and political

infrastructures created by states to maintain boundaries and regulate movement. Frontiers and boundaries have been important factors in global history, but a truly global survey of their impact has not yet been written.

Frontiers

Although the term *frontier* can be traced as far back as medieval Spain, it has most frequently and famously been applied to North American history. For more than a century historians in the United States have debated the "role of the frontier" in U.S. history. In 1893 the U.S. historian Frederick Jackson Turner spoke of "the" frontier as a "meeting point between savagery and civilization," the "edge of free land," and "the line of most rapid and effective Americanization." He argued that in frontiers one could witness in rapid succession various forms of social evolution such as hunting, trading, ranching, farming, and finally manufacturing. Such characteristics of the United States as democracy, individualism, and idealism could, in his opinion, be attributed to the frontier experience. Many of Turner's conclusions have been disputed, disregarded and replaced by more nuanced models of interaction between settlers and indigenous populations in North America, but the frontier still persists in popular imagination and popular culture. Turner himself saw comparative possibilities for analyzing frontier influences beyond North America: "For a moment at the frontier the bonds of custom are broken and unrestraint is triumphant...each frontier did indeed furnish a new field of opportunity, a gate of escape from the bondage of the past." His concept of the frontier has been applied with varying degrees of success to such



Remains of a portion of Hadrian's Wall and an entranceway in Scotland. The wall was meant to keep the Romans from expanding the boundary of their empire further north. Photo by Chris Howell.

diverse areas as Australia, South Africa, Russia, medieval Europe, and the Roman Empire.

In 1952, Walter Prescott Webb, a Texas historian who had previously studied the Great Plains, published a study that attempted to apply the frontier model on a global scale. The discovery of West Indies by Columbus and the ensuing exploration of the Americas, in his opinion, opened up a “Great Frontier” for European expansion. The West, he argued, enjoyed unparalleled access to land and resources, creating an economic boom that lasted for centuries. The closing of the Great Frontier, however, presented a new challenge to the West. With land for settlement no longer available and resources no longer easily accessible, Western society, together with its capitalism, democracy, and individualism, faced the possibility of uncertainty.

The world historian William H. McNeill revisited the notion of the Great Frontier in 1983. He focused on European settler societies in certain areas of the world and evaluated the ways in which frontier conditions transformed the societies and economies created as a result of the migration of Europeans across oceans and across the Eurasian steppe (the

vast, usually level and treeless tracts in southeastern Europe or Asia) after 1500. The Great Frontier was characterized by a dichotomy between freedom and compulsion. In some cases the frontier promoted freedom and equality (the Cossacks, European colonists in North America), whereas in others the availability of land and relative shortage of labor led to enslavement or enserfment of workers. McNeill's work helped to frame frontiers in such a way that no single outcome could be considered characteristic of frontier processes.

Most recently the anthropologist Igor Kopytoff has applied the frontier concept to broad expanses of African history. In various places and periods networks of local frontiers formed a great process in African history. As a result of famines, conflicts, ecological pressures, and entrepreneurial pursuits, individuals and groups took up residence in “no-man's lands” beyond the jurisdiction of established communities. After they were successfully established, they formed a nucleus of a new group, which could serve as a magnet for the disaffected groups and individuals from neighboring societies. Given the right conditions (distance, ecological barriers, inability of existing

Before I built a wall I'd ask to know / What I was walling in or walling out.

• Robert Frost (1874–1963)

societies to extend control), new polities (political organizations) emerged at the margins of existing polities. Some of these new polities eventually became powerful enough to form new polities and absorb their older neighbors. Kopytoff's model effectively distanced frontiers from predetermined outcomes: "The frontier is permissive rather than determinant, it does not create a type of society, but provides an institutional vacuum for the unfolding of social processes" (Kopytoff 1987, 14). Thus, each frontier provides the possibility of generating multiple outcomes.

Comparative frontier studies have gradually abandoned the Eurocentric models promoted by Turner and his students. Historians in the United States still debate Turner's legacy, with some even rejecting the term *frontier* because of its cultural baggage, but many sophisticated studies of cross-cultural interaction, ecological transformation, and settlement owe an intellectual debt to Turner.

Applied on a global scale, the frontier concept provides a lens for examining how the forces of environment, cross-cultural interaction, and adaptation can create new communities and societies. Furthermore, frontiers demonstrate how important processes of change can originate at the margins of existing societies and how peripheries can become new centers.

The Question of Ancient Borders

Although people often consider borders to be characteristically modern, recent research by the Italian historian Mario Liverani has documented their existence in international relations of the ancient Near East. During the late Bronze Age (c. 1550–1200 BCE) interstate relations developed between emerging states in Anatolia (in modern Turkey), Egypt, Mesopotamia, and the lands adjacent to or between those states. Many of the rulers of such ancient states claimed to be universal rulers, but they nonetheless delineated fixed borders of effective control. In the ideology of kingship, the ruler should continuously expand his territory to the ends of the known world. Because the process of expansion would never be complete,

rulers often erected commemorative monuments at the extremities of the territories they had conquered or traversed. Liverani writes: "if we view the border as an elastic perimeter that follows the outward movements of the king, the stela [a stone slab or pillar used for commemorative purposes], which has his name and image inscribed upon it, acts as a substitute for his presence" (2001, 34).

Borders in the ancient Near East were fixed by treaties between two equal parties or between the victor and the vanquished. Existing treaties mention features of the landscape, names of cities, and lists of settlements subject to each ruler. A major question was the distribution of revenues, or who would pay tribute to whom. Treaties also defined penalties for raiding, promoted return of runaways, and included terms of trade. Safe conducts—documents guaranteeing the right to travel across a ruler's territory without bureaucratic hindrance from minor officials—originated in Near Eastern diplomacy to facilitate the movement of representatives of a ruler across foreign territories.

We should not view these ancient boundaries of control, however, as the exact equivalent of modern territorial borders. Rulers were mainly interested in controlling strategic points. Liverani states: "The territory controlled by the state resembles an 'oasis' . . . there is no need for a boundary line, but rather for 'gateways' channels of controlled communication with other states (or other inhabited areas) beyond the depopulated belt" (Liverani 2001, 52). Remote border posts acted as a filter to let desirable persons and things pass on into heart of the state and to keep out undesirables.

Imperial Boundary Maintenance in Eurasia

In global history the Eurasian steppe has been the scene of various attempts by sedentary societies to create artificial barriers to impede the movement of more mobile societies. These barriers required large investments of resources, and in some ways they foreshadowed the functional role of modern borders in



managing and controlling movement. Various states have used physical barriers in attempts to control the mobility of both their subjects and foreign adversaries. As late as the seventeenth century, Russia used the Belgorod Line, an earthen and wooden barrier created to prevent nomadic attacks, to also limit the outward movement of its subject serfs to freedom in areas of the steppe beyond state control.

In the historiography (the writing of history) of western Eurasia, the remnants of Roman military fortifications have long attracted the attention of scholars. European historians were intrigued by the possible function of structures such as Hadrian's Wall, which stretches virtually from sea to sea across Great Britain and once featured three layers of barriers: ditches, walls and watchtowers, and military roads, forts, and mobile patrols. One Roman source explains that the purpose of the wall was "to separate the Romans and barbarians" (Jones 1996, 47). The sixth-century Byzantine historian Procopius could even imagine the wall as a dividing line, beyond which human habitation was literally impossible due to pestilential air. Although boundary maintenance structures have been imagined as zones of extreme exclusion, the evidence points to a much more complex picture.

Because Roman frontier forts and garrisons ringed the diverse edges of the Mediterranean world, historians have tried to make sense of the role of border fortifications in diverse terrains. The military historian Edward Luttwak's *The Grand Strategy of the Roman Empire*, published in 1976, argued that a Roman unified system of defense in depth was developed by the Flavian emperors (second century CE) and subsequent emperors and was applied strategically to the empire's vast frontiers. Historians have debated whether these barriers indicate an aggressive or defensive posture, whether strategic thinking on an empire-wide level can in fact be documented, whether far-flung infrastructures were ad hoc (concerned with a particular end or purpose) local measures or were centrally planned, whether Roman ideology could ever admit a limit to expansion, and whether Greek traditions of building military barrier walls influenced Roman actions. Discussions have centered even on

the meaning of the word *limes*, which some historians have used to describe the frontier defense "system," but which others think referred only to military road networks. Because the "barbarian" invasions played a role in the fall of the Roman Empire in the West, discussions of frontier fortifications have implications for broader questions of imperial decline/transformation. Textual evidence is limited, but hundreds of miles of fortifications and thousands of archaeological sites in Africa, Asia, and Europe have yielded new information. At the very least the Romans seem to have been operating strategically in similar ways in different regions, in some cases setting the agenda, in other cases reacting to circumstances. Although barriers clearly were designed to deal with medium-intensity threats and were supported by intricate systems of garrisons and communication networks, the contemporary sources do not explicitly define the parameters of grand strategy.

Rather than separate Romans from "barbarians," the boundary fortifications often facilitated contact between Romans and their neighbors. The archaeologist Peter Wells has documented the impact of Roman expansion along the Rhine: "The Roman expansion into temperate Europe can be productively viewed as a process that involved interaction between peoples, negotiation with political leaders, and sometimes combat" (Wells 1999, 95).

Archaeology, inscriptions, and texts demonstrate that the lines between Romans and their neighbors were more blurred than previously thought. Many non-Romans were living in Roman territories and employed by the Roman army. Even groups living far beyond the border in an expansive frontier zone were influenced by Roman culture and participated in trade networks. Objects traded hundreds of miles from the farthest Roman forts suggest connections rather than separation.

Historians examining more than two millennia of interaction between China and Inner Asia have faced similar problems of interpretation. Here, too, walls provide visual evidence of ancient divisions, but these walls are subject to varying interpretations. In his classic study *Inner Asian Frontiers* the Asian studies expert Owen Lattimore spoke of the Great Wall of

China as a dividing line ordained by the environment. It roughly approximated an ecological fault line between lands to the south, which were conducive to agriculture, and to the north, which were the domain of pastoral nomadism. For him the Great Wall was a kind of “optimum limit of growth” for the Chinese Empire, but he emphasized that a linear boundary could not be established (Lattimore 1951, 238, 240). He focused attention on the struggle for control of marginal lands and a series of transitional zones between “full Chinese order” and “full steppe order” (Lattimore 1951, 498).

The historian Andrew Waldron has convincingly argued that “there was no single Great Wall in the Chinese past” (Waldron 1988, 69) and that pre-nineteenth-century Chinese observers rarely spoke of a single structure. European notions of a “Great Wall of China” evolved during centuries, influencing modern Chinese perceptions and culminating in the myth (developed during the late nineteenth century) that the “Great Wall” is the only human-made object visible from outer space. Waldron traces how simple earthen fortifications (first mentioned in 656 BCE) emerged, were unified in a system of walls under the Qin dynasty (221–206 BCE), and finally, many centuries later, became identified as an ancient structure ranging for more than 9,000 kilometers. These ancient walls were variously built, abandoned, repaired, and abandoned once again. Furthermore, wall building was only one of many strategies for dealing with the nomads. Furthermore, we can draw no direct correlation between wall building and the weakness of the Chinese state. Finally, the massive brick and stone walls that are commonly visited by tourists near Beijing were built relatively late, during a new period of wall building by the Ming dynasty (1368–1644).

Recent scholars have likewise looked at interactions across the Chinese walls. The walls themselves were never able to enforce a complete dichotomy between the Middle Kingdom (China) and the “outer darkness” beyond its borders. Several studies have demonstrated how nomadic confederacies thrived because of interaction with China. Anthropologist Thomas Barfield has argued that the success of nomadic confederacies depended upon a ruler’s abilities to secure resources

from China. To do this, he might organize raids or act as an intermediary between China and the steppe. Often nomadic confederacies avoided conquering Chinese territory and preferred to use their power to extract resources, subsidies, or access to trade. The historian Sechin Jagchid has argued even that trade was the “essential element that determined whether peace or war existed along China’s northern frontier” and has traced key institutions such as frontier markets, tribute, bestowals (acts of gift giving), and exchanges of brides between Chinese and nomadic rulers (Jagchid and Symons 1989, 1).

The resources necessary for boundary maintenance were enormous, and infrastructures were expensive to maintain. Policies such as diplomacy or trade proved to be cheaper and, in some cases, more effective. Even walls could not stop cross-cultural interaction because populations that appeared to be distinct when viewed from the perspective of the center were in fact often blurred when viewed at the margins.

Borders as a Global Framework

Boundaries and border infrastructures have not necessarily been pervasive in global history. In fact we do not know even how common boundaries were in certain parts of the world before the modern period. Many societies recognized some form of boundaries and created fortifications, but these were not necessarily linear or territorial borders in the modern sense.

The rise of Islam provides an interesting example of boundary conceptualization. Islamic political theory does not seem to have recognized the notion of political boundaries. According to Ralph Brauer, boundaries were noncanonical in Islamic law. Islamic jurists conceptualized the world as divided into two irreconcilable realms: the *Dar al Islam* (land of Islam) and the *Dar al Harb* (land of war). In theory Islam was expected to be ever expanding until the Islamic community was coterminous (having the same or coincident boundaries) with the whole world. Sanction for jihad (holy war) against non-Islamic states makes the boundaries of Islam permanently in a state of flux. Although Islamic statecraft recognizes temporary peace agreements with non-Muslims and



brief, strategic concessions, in Islamic statecraft there was apparently no such thing as a permanent boundary. This unique approach might be explained by the fact that linear boundaries were not practical in the desert nomadic culture that influenced early Islam. The fourteenth-century Arab historian Ibn Khaldun, for example, portrays Islamic states as surrounded by border zones rather than lines. Early Ottoman expansion seemed to confirm the notion that Islamic states should only expand their borders and dictate terms of surrender to their opponents, but eventually expansion stalled and pragmatism set in. After the Treaty of Karlowitz (1699) Ottoman diplomats recognized mutually delineated political borders between Islamic and non-Islamic states, creating a precedent for participation of Muslim countries in the modern international system.

Modern International System of Boundaries

Although various aspects of modern borders have ancient antecedents, the modern international system of territorially conceived sovereign states is usually traced to the Peace of Westphalia, which was concluded in October 1648. The text of the treaty did not specifically deal with the question of borders, but it did establish a principle of territorial inviolability. The treaty recognized its signatories as equal, regardless of size, religious confession, or previous imperial affiliation. It also confirmed each ruler's sovereignty over his or her subjects. By diminishing the power of Catholic Church and the Holy Roman Empire, it set the stage for an international system of states that regulate their affairs through common and mutually acknowledged patterns of diplomacy and international cooperation. This system, with mutually recognized borders and state sovereignty within them, was gradually expanded and applied to various parts of the world.

As the historian Peter Sahlin demonstrated, the territorialization of the state in Europe was a long and tortuous process. Sahlin examined the history of the border between Spain and France in one area of the

Pyrenees Mountains between 1659 and 1868. Even after the two states agreed in principle on partitioning the Cerdanya Valley between them, ecclesiastical, fiscal, seignorial (manorial), and local jurisdictions did not necessarily coincide with state borders. The creation of the border as an institution was often tied to local interests and grievances, which local people used to seek responses and resources from the national capitals. Although notions of "territorial violations" already had emerged during the late eighteenth century, the border was only vaguely demarcated and rarely patrolled. France first attempted to seal off its border in 1822 to prevent an epidemic, and only by 1868 was a well-marked linear boundary established. Sahlin has tried to dispel the notion that borders were imposed from above on unwilling populations.

Not enough detailed studies are available for us to determine whether the Spanish-French example was typical even for Europe. Nonetheless, the rough contours of the emergence of international borders are evident. During the early modern period (sixteenth to eighteenth century) maps became essential to the delineation of political boundaries, and rulers began to define the limits of their territories with more and more precision. Correspondingly, borders began to be delineated with increasing precision. Usually established by bilateral treaties, borders were demarcated in the landscape (most often by marks on rocks, trees, or special boundary markers) by commissioners representing each state in the presence of local witnesses. The general tendency of the eighteenth and early nineteenth centuries was to try to create rational and orderly boundaries (straight lines appeared for the first time on maps) that coincided with existing jurisdictions or natural landmarks such as rivers. Early efforts at migration control, which were not always necessarily enforced at the borders, aimed to limit the entry or exit of certain groups categorized as undesirable: beggars, carriers of communicable diseases, and politically suspect individuals such as spies, traitors, and revolutionaries.

During the second half of the nineteenth century border infrastructures in Europe became more

elaborate. Passports, which originated as diplomatic safe conducts, were not originally indicative of citizenship and were not universally required for international travel until World War I. As states increased their grasp over their territories, more officials were posted along border roads and in border towns. Often border guards and customs agents carried out fiscal and political surveillance of travelers, but they possessed neither the ability nor inclination to inspect every border crosser or to document every entry or exit (exceptions existed, such as Russia, which zealously monitored movement across its borders). During the last decades of the nineteenth century some European countries moved toward controlled entry policies: documenting the entry and exit of each traveler, whether citizen or foreign national. State efforts to regulate movement were largely confined, however, to ports, trains, and main roads. During the last decades of the nineteenth century some countries passed laws distinguishing foreigners from native citizens in order to protect local labor markets from foreign competition.

During the early twentieth century borders became pervasive on a global scale. Virtually the whole globe was parceled into sovereign jurisdictions, whether inhabited or not. Each state became territorially defined, and each government was authorized under international law to determine whom to admit. Passports became required for movement across international borders. Twentieth-century borders were strongly shaped by the activities of the European colonial powers. For example, in their race to claim huge chunks of Africa after the Congress of Berlin during the period 1884–1885, the European colonial powers ignored existing cultural divisions, drew straight lines across formidable features of the landscape, and even laid claim to territories that had never been seen by Europeans. Antarctica is now the only continent that does not have functioning international borders. By international agreement, most states agreed to renounce claims of territorial sovereignty in Antarctica.

During the 1930s states enacted the first attempts to achieve total control over their borders. Extreme boundary maintenance policies (most notably in

Nazi Germany, the USSR, other socialist states, and areas along politically sensitive tracts in other parts of the world) were often instituted for ideological reasons. State efforts to limit unauthorized movement across boundaries were facilitated by two advances in technologies for impeding movement: barbed wire (developed on the U.S. plains to control cattle during the late nineteenth century) and antipersonnel land mines (developed during the U.S. Civil War).

The Soviet border infrastructure, dubbed the “Iron Curtain” during the Cold War, was the earliest and most extensive of these structures. Although the Bolsheviks espoused internationalism, they also embraced borders. Early Soviet boundary maintenance began during the Russian Civil War (1917–1920) when secret police units were given jurisdiction over the internal lines of demarcation between Soviet areas and the various “counterrevolutionary” governments within the boundaries of the old Russian Empire. Fears of encirclement by aggressive capitalist enemies eager to undermine the Soviet state, coupled with economic pressures to stem the flight of specialists and millions of disaffected citizens, led Soviet leaders to solidify border patrols. By around 1930 more than 50,000 kilometers of Soviet borders were being guarded by forty thousand border guards who were assigned to ten border patrol districts. Borders tended to be more heavily patrolled in the west and in densely populated areas in other parts of Eurasia. In those areas patrol density averaged 2.5 men per kilometer of border, but fewer resources were devoted to areas in Asia or the far north that were remote and difficult to cross because of extreme terrains. An expensive and expansive infrastructure utilized patrols by land, air, and sea, networks of local informants, watchtowers, land mines, tens of thousands of miles of tracking strips (areas that were cleared of inhabitants and vegetation and specially maintained to make surveillance possible and footprints visible), thousands of miles of barbed-wire fences and, eventually, electronic signalization systems. Militarily sensitive areas might also be mined to prevent “border violations.” Access to border zones was rigidly controlled, and Soviet citizens could enter these areas only with official permission. As a result of these



measures, unauthorized entry and exit became virtually impossible between the 1950s and 1991. These measures were replicated in Soviet satellite states, most notably in Germany's Berlin Wall (1961–1989).

Although many such extreme borders disappeared with the end of the Cold War, many remained in place after 2000. Such borders continued to be maintained between India and Pakistan, between the two Koreas, in Israel, parts of the former USSR, China, and so forth. Economic migration has spurred the construction of new border infrastructures in certain areas. Administrative barriers to movement (primarily entry visas and residence restrictions) still limit and regulate movement from developing (or “southern,” Third World) countries to industrialized countries. Although the European Union abolished border controls among its member states in 1999, it strengthened its external borders in southern and eastern Europe. In particular, a highly sophisticated border infrastructure (a twenty-first-century Berlin Wall) was created to protect Spanish enclaves in Morocco from mass migration. The U.S.-Mexico border, which was only sporadically patrolled for much of the twentieth century, has become an increasingly complex border infrastructure. During the late 1990s border sectors near major metropolises such as San Diego, California, and El Paso, Texas, were equipped with walls, infrared scopes, underground sensors, and increased mobile and air patrols. By 2004, 9,600 kilometers of U.S. land borders were patrolled by roughly eight thousand officers, a figure that rivals the density of Soviet border patrol deployments during the 1930s. Thus, globalization did not bring about a “world without borders” during the waning years of the twentieth century.

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See also Cold War; European Expansion; Frontiers; Islamic World; Steppe Confederations

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Fur trading played an important economic role in Russia, Alaska, and North America by opening up the frontiers to settlers in the early 1500s. Native Americans exchanged furs for goods like firearms, blankets, and liquor with early European fisherman and settlers, and later with trading companies that sold the furs to luxury clothing manufacturers or to felting industries that made hats.

The fur trade of North America, which came to dominate the trade from Russia (the only other major supplier of furs), transformed the way Native Americans obtained their food and other subsistence needs and made available to them a wide variety of new consumer goods. It also led to the exploration of much of North America by Europeans. The fur trade grew out of the early contact between Native Americans and European fishermen who were netting cod on Newfoundland's Grand Banks off the eastern coast of Canada. Contact at first was haphazard, and only during the late sixteenth century, when the wearing of beaver hats became fashionable, were firms established to deal exclusively in furs.

The first firms to participate in the fur trade were French, and under French rule the trade spread along the St. Lawrence River, through the Great Lakes region, and down the Mississippi River. During the seventeenth century the English developed a trade through Albany, New York. Then, in 1670, a charter was granted by the British Crown to the Hudson's Bay Company, which began operating from posts along the coast of Hudson Bay in Canada. With the British conquest of New France in 1763, the French trade shifted to Scottish merchants operating out of

Montreal. In 1794, the year Jay's Treaty ceded territory from England to the United States, the fur trade along the Mississippi passed to U.S. interests, culminating in the American Fur Company under U.S. fur trader and financier John Jacob Astor. In 1821 the main Canadian participants merged under the name of the Hudson's Bay Company, and for nearly two centuries this merged company continued to trade in furs.

Prior to the rise of the American colonies in the fur trade, Russia was a major supplier of fur pelts to its near neighbors and to western Europe and parts of Asia. Since the Middle Ages Russia had been an exporter of fur via the Baltic and Black Seas. Long an important part of economic activities, pelts effectively acted as currency, being used to pay for a range of goods or services. With the opening up of Siberia from the sixteenth century, Russia gained access to a rich variety of pelts such as that of the Arctic fox, sable, lynx, and sea otter. In pursuit of animals such as the sea otter, Russian traders ventured into Alaskan North America. The fur harvest from Siberia, particularly the sable, enabled Russia to become the world's largest supplier of fur from the seventeenth century and well into the nineteenth century.

The fur trade was based on pelts that were destined either for the luxury clothing market or for the felting industries, of which hatting was the most important. Hats for centuries were a mandatory part of everyday dress for both men and women, and, although styles changed, the material from which hats were made—felt made from wool—remained the same. The wool came from various animals, but beginning in the sixteenth century beaver wool hats became increasingly popular, eventually dominating the market.



Fur trade with Native Americans led Europeans to explore and settle much of North America.

In Russia the felting industry was based on the European beaver (*Castor fiber*), but by the end of the seventeenth century Russian supplies were declining. Coincident with the decline was the emergence of a North American trade. The pelts of North American beaver (*Castor canadensis*) were classified as either parchment or coat. Parchment pelts were from freshly caught beaver, whose skins were simply dried before being presented for trade. Coat pelts had been worn by Native Americans for a year or more. By the middle of the seventeenth century felt makers were combining parchment and coat pelts to produce top-quality felt for the hat market.

The records of the Hudson's Bay Company allow us to see a clear picture of what items Native Americans were buying with the beaver pelts and other skins that they brought to trading posts. The items can be categorized by use. The producer goods category was dominated by firearms, including guns, shot, and powder. Native Americans traded for guns of different lengths. The 1-meter gun was used mainly for waterfowl and for game in heavily forested areas where game could be shot at close range. The 1.2-meter gun was more accurate and suitable for open spaces. Kettles and blankets were the main items in the household goods category. Luxury goods can be divided into two broad categories: (1) tobacco and alcohol and (2) other luxuries, dominated by cloth. The breakdown of categories varied by trading post

and through time. In 1740 at York Factory, the largest of the Hudson's Bay Company posts, the distribution in terms of value was producer goods, 44 percent; household goods, 9 percent; alcohol and tobacco, 24 percent; and other luxuries, 23 percent.

Like many Europeans and most American colonists, Native Americans were taking part in the consumer revolution of the eighteenth century. In addition to consuming necessities, they were consuming a remarkable variety of luxury products. Cloth, including baize, duffel, flannel, and gartering, was by far the largest class of luxury products, but Native Americans also purchased beads, combs, looking glasses, rings, shirts, and the pigment vermillion.

During the 1720s the price of furs began to rise in response to an increasing demand for beaver hats in Europe. The higher price in turn led to greater fur harvests. Thus, although some contemporaries described Native Americans as "lazy and improvident," Native Americans seized the opportunity provided to them by the strong fur market by increasing their effort in the commercial sector. The result was higher living standards, but also a use of European technology that permanently changed many aspects of Native American society.

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See also Hudson's Bay Company



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Gaia Theory

The Gaia theory holds that Earth's physical and biological processes are inextricably linked to form a self-regulating system that maintains its own habitability. The theory asserts that living organisms and their inorganic surroundings have evolved together as a single living system that greatly affects the conditions of Earth's surface. The theory is often described in terms of Earth acting as a single organism.

In 1969 the British scientist James Lovelock postulated that life on Earth regulates the composition of the atmosphere to keep the planet habitable. The novelist William Golding, Lovelock's friend and neighbor, suggested Lovelock call the hypothesis Gaia, after the Greek Earth goddess. Although in its early exposition and in the popular press the Gaia hypothesis was understood as saying Earth itself was a living organism, the theory as Lovelock came to articulate it said rather that Earth acts like a living organism, with its living and nonliving components acting in concert to create an environment that continues to be suitable for life.

Development of the Gaia Hypothesis

The idea that life is more than a passenger on Earth dates back to the work of scholars and researchers in a number of disciplines: the Scottish geologist James Hutton (1726–1797) and was held by the British biologist T. H. Huxley, the animal physiologist Alfred Redfield, the aquatic ecologist G. Evelyn Hutchinson, and the geologist Vladimir Vernadsky. In 1924 Alfred Lotka—a U.S. chemist, ecologist, mathematician, and demographer—first proposed the radical notion that

life and the material environment evolved together as a system, but few took him seriously.

In the late 1960s, as part of its search for life on Mars, the National Aeronautics and Space Administration (NASA) gathered information on the composition of planetary atmospheres. Lovelock, then a NASA consultant, noted that Venus and Mars both had atmospheres dominated by carbon dioxide and close to chemical equilibrium. In contrast, gases made by living organisms dominate the atmosphere, which, despite being far from chemical equilibrium, is stable in the long term. Lovelock realized that such stability required a regulator and, since the atmosphere was mainly a biological product, proposed that Earth's collective life forms played this role.

In 1971 he began collaboration with the eminent biologist Lynn Margulis, who brought her extensive knowledge of Earth's microorganisms and added flesh to what was otherwise a chemical hypothesis based on atmospheric evidence.

Criticism and Refinement of the Gaia Hypothesis

Lovelock and Margulis's joint work brought strong criticism, mainly from other biologists. W. Ford Doolittle and Richard Dawkins, two vocal critics, stated that there was no way for living organisms to regulate anything beyond their individual selves. Some scientists in particular were critical of the hypothesis for being teleological, or assuming that all things have a predetermined purpose. Lovelock responded: "Neither Lynn Margulis nor I have ever proposed a teleological hypothesis" (1990, 100). Doolittle argued that there was nothing in the genome



of individual organisms to provide the feedback mechanisms Gaia Theory proposed. Dawkins has argued that organisms cannot act in concert, as this would require foresight and planning. Stephen Jay Gould, the renowned U.S. paleontologist and evolutionary biologist, wanted to know the mechanisms by which self-regulating homeostasis is possible. This criticism was in the best traditions of science and required a proper response.

In 1981 Lovelock answered the critics by creating the numerical model Daisyworld, an imaginary planet on which there were two species of plant, one light colored and the other dark colored. The planet was warmed by a star that, like Earth's sun, grew hotter as time passed. When the star was cooler, each dark-colored daisy warmed itself by absorbing sunlight, until dark daisies predominated and warmed the planet; as the star grew hotter, each pale-colored daisy, by reflecting sunlight, kept itself and the planet cooler. The competition for space by the two daisy species kept the planet's temperature constant, thus sustaining a habitable condition despite changes in the heat output of the star. The model showed that even without regulating anything other than themselves, organisms and their environment evolve together as a powerful self-regulating system. This demonstration, along with successful predictions of mechanisms for the regulation of the Earth's climate and chemistry, put Gaia on a firm theoretical basis, which was strengthened by a further suite of models from the ecologists Tim Lenton (in 1998) and Stephan Harding (in 1999).

The Heart of Gaia

Gaia views Earth's surface environment as a self-regulating system composed of all organisms, the atmosphere, oceans, and crustal rocks, which sustains conditions favorable for life. It sees the evolution of life and the evolution of Earth's surface and atmosphere as a single process, not separate processes, as taught in biology and geology. Organisms evolve by a process of natural selection, but in Gaia, they do not merely adapt to the environment, they change it. Humans, clearly, are changing the atmosphere, the

climate, and the land surfaces, but other organisms, mostly microscopic, have in the past made changes that were even more drastic. The appearance of oxygen in the air two billion years ago is but one of them. Gaia stands to Darwinism somewhat as relativity theory stands to Newtonian physics. It is no contradiction of Darwin's great vision but an extension of it.

What use is Gaia? It has been a fruitful source of new research and an inspiration for environmentalists. It led to the discovery of the natural compounds dimethyl sulfide and methyl iodide, which transfer the essential elements sulfur and iodine from the oceans to the land. It showed how life in the soil and on the rocks increases the rate of removal of carbon dioxide from the air and so regulates both the levels of carbon dioxide and, consequently, climate. Its most daring prediction stated in 1987 by Robert Charlson, Lovelock, Meinrat Andreae, and Stephen Warren, was that the microscopic algae of the oceans are linked by their emission of a gas, dimethyl sulfide, with the clouds and with the climate. As Earth gets hotter, the theory says, these algae release more dimethyl sulfide into the atmosphere, which increases Earth's cloud cover, which in turn cools the Earth: without clouds, the earth would be hotter by 10–20°C. This idea is crucial to the proper understanding of climate change. The authors received the Norbert Gerbier Prize and medal from The World Meteorological Office for this theory in 1988. Ten years later hundreds of scientists worldwide were studying the links between ocean algae, atmospheric chemistry, clouds, and climate. Climatologists and even physiologists have used Daisyworld in their research. Over the years, Gaia has changed the way scientists think. There is no better example of this change than the Amsterdam Declaration of 2001. A conference of environmental scientists in 2001 issued the declaration, which had as its first bullet point: "The Earth System behaves as a single, self-regulating system comprised of physical, chemical, biological and human components" (Open Science Conference 2001). Although not yet a full statement of Gaia theory, it a substantial advance on the separated view of earth and life sciences that went before.

In recent years, the Gaia theory has become part of general discussion and popular journalism, especially in relation to global climate change. Its subject, the complex interdependencies of planetary life, is part of the academic curriculum under the name “Earth Systems Science.”

The Revenge of Gaia

In a 2006 book, Lovelock made the argument that environmental degradation and climate change are testing Gaia’s capacity to self-regulate and maintain Earth’s habitability. He believes that it is already too late to avoid significant climate change, thus rendering large portions of our planet much less hospitable for humans. Sustainable development and renewable energy are two hundred years too late to be of much help; it is now time to direct greater efforts towards adaptation. Lovelock is an advocate of nuclear power as a short-term solution for maintaining energy demands, but other clean alternative energy sources are thought to be too little too late. Given the range of environmental stresses, he claims that human civilization will find it difficult to survive as is, with the human population experiencing significant decline during the next hundred years. Lovelock claims that Gaia’s self-regulation is likely to prevent any catastrophic wipeout of life on Earth, but the present course of action is unsustainable, and there will be changes to life on Earth one way or the other.

James LOVELOCK

European Communities Information Office

See also Anthroposphere; Biological Exchanges; Climate Change; Environmental Movements; Universe, Origin of

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Galileo Galilei

(1564–1642)

ITALIAN PHYSICIST, MATHEMATICIAN, AND ASTRONOMER

Galileo Galilei (1564–1642) is considered the father of modern experimental science. He pioneered dynamics as an exact science of motion, and through the use of the telescope he demonstrated the validity of the Copernican thesis in the face of denial from Aristotelian academics and Roman Catholic theologians.

Galileo was born in Pisa 15 February 1564, the first of the six children of Vincenzo Galilei, a Florentine merchant and part-time musician. At the age of eleven he was sent to the Camaldolese School in Vallombrosa, and except for his father's opposition he would have become a monk. In 1581 he entered the University of Pisa to pursue a medical degree, but he soon developed a far greater interest in mathematics. With his father's reluctant consent, he abandoned medicine. Leaving the university without a degree, he led an impecunious existence from 1585 to 1589, scraping together teaching assignments in mathematics. During these years he published his first book, *The Little Balance*, inspired by his study of the mathematician Archimedes. It described a hydrostatic balance he had invented to measure the specific gravity of objects.

In 1589, with the recommendation of German Jesuit mathematician Christopher Clavius and fame achieved through lectures at the Florentine Academy, Galileo obtained an appointment at the University of Pisa, where for the next three years he taught mathematics based on the prevailing Aristotelian and Ptolemaic beliefs. In 1592 Galileo secured a more prestigious appointment at the University of Padua, in the Republic of Venice. His eighteen years at Padua, where he taught Euclid's geometry and Ptolemaic astronomy,

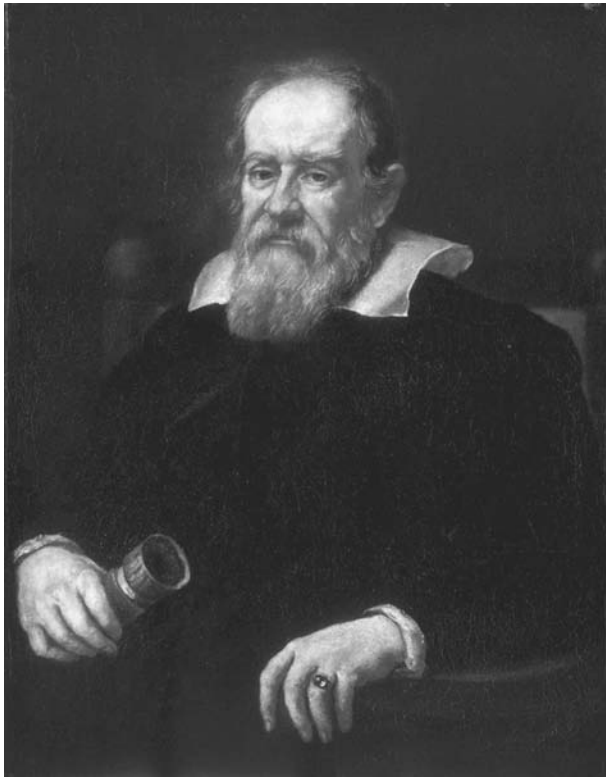
were the happiest of his life. During ten of these years, he had a relationship with a Venetian woman, with whom he had three children, a boy and two girls.

Galileo began investigating the Copernican theory in the early 1590s. In a letter to Johannes Kepler in 1597 he said that he had been a believer in Copernicanism for many years, but fear of ridicule prevented him from openly expressing his views. However, in 1604, when a new star appeared, Galileo began lecturing against Aristotle's astronomy. About the same time, he resumed an earlier study on motion, and using inclined planes, concluded that objects fell at the same speed regardless of weight.

In 1609 Galileo perfected a telescope that had been invented by a Dutch optician and used it to point out the fallacy of the geocentric theory. In his first major scientific publication, *The Starry Messenger* (1610), written in Italian instead of the traditional Latin, he described the lunar mountains, the Milky Way, and the satellites of Jupiter. To flatter Cosimo II, Grand Duke of Tuscany, Galileo dedicated the book to him, in the hope that a major appointment in Florence would follow. He was not disappointed: Cosimo named him "Chief Mathematician and Philosopher." In 1611 Galileo visited Rome, where the Academy of Lynxes, composed of the scientific elite, invited him to become a member, and the Collegio Romano honored him with a dinner.

Shortly after publishing in 1612–1613 his *Discourse on Falling Bodies* and *Letters on Sunspots*, Galileo entered the growing debate on the relationship between the Copernican or heliocentric thesis and the Scriptures, which supported the Ptolemaic, geocentric theory. In *Letter to the Grand Duchess Christina* (mother of Cosimo II) Galileo stated that

In questions of science, the authority of a thousand is not worth that humble reasoning of a single individual. • Galileo Galilei (1564–1642)



Giusto Sustermans, *Portrait of Galileo Galilei* (c. 1639). Galileo fostered an intellectual revolution that provided the basis for modern science. National Maritime Museum, London.

a figurative interpretation of the Scriptures was necessary because physical reality demonstrated that the sun was the center of the universe. Galileo was entering the theological domain at a time when the Counter-Reformation was at its height and the reigning pope, Paul V (papacy 1605–1621), was hostile to new ideas.

In 1616 the Holy Office (the Inquisition) unequivocally condemned the Copernican theory. Cardinal Robert Bellarmine, the pope's Jesuit theologian and an adviser to the Holy Office, was delegated to inform Galileo in person that he was forbidden to teach or defend Copernicanism either orally or in writing. But as Galileo seems to have understood, there could be a discussion of Copernicanism as a mathematical construct, but not as a philosophical truth. Accordingly Galileo carried on an extensive correspondence on this subject with his supporters throughout Europe.

His daughter, Sister Marie Celeste, who lived in nearby Arcetri, was very supportive and became a major presence in his life.

In 1623 Cardinal Maffeo Barberini, an old friend of Galileo's and a noted patron of the arts, was elected pope, taking the name of Urban VIII (papacy 1623–1644). Barberini as pope was far less receptive to Copernicanism than he had been as cardinal. In his audiences with Galileo, Urban clearly stated that God was omnipotent and that to speak of Copernicanism as other than hypothetical was to deny divine omnipotence.

Between 1624 and 1630 Galileo wrote the book that would lead to his condemnation by the Holy Office, *Dialogue Concerning the Two Chief Systems of the World: Ptolemaic and Copernican*. Published in Florence in 1632, the *Dialogue* represents Galileo as the epitome of the Renaissance man, reflecting as it does his ideas as an astronomer, physicist, and humanist. The book took the form of a discussion among three philosophers, one who ably defended Copernicanism, another who acted as a facilitator, and the third who ineptly supported the Ptolemaic thesis. Written in Italian in a popular style, the book speedily attracted a wide readership. The Holy Office ordered Galileo to appear in Rome on "suspicion of heresy." His trial, which began April 1633, ended 22 June 1633 with the Holy Office judging him guilty of the "suspicion of heresy." The condemnation was based primarily on his failure to abide by the Holy Office's injunction of 1616. For reasons that remain unclear, Galileo signed an abjuration. He was sentenced to imprisonment at the pleasure of the Holy Office and to the recitation of the penitential psalms once a week for three years. The sentence was subsequently commuted to house arrest in Arcetri.

Galileo spent the rest of his life in relative seclusion, beset by poor health and blindness. Nevertheless, he managed to have published in Holland in 1638 his *Discourses and Mathematical Demonstrations Concerning the Two New Sciences*, in which he developed his ideas on the acceleration of bodies in free fall. He died 8 January 1642 and was buried in the Church of Santa Croce.

In 1979 Pope John Paul II reopened the case of Galileo. In 1992, on the basis of the report of the investigating commission, he declared that the theologians had been mistaken in condemning Galileo. Thus nearly four hundred years after his condemnation, Galileo was vindicated. In the interval he had affected an intellectual revolution that provided the basis for modern science.

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See also Renaissance; Scientific Revolution

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Games and Play

Cultural anthropologists in the twenty-first century still rely on a 1959 definition of *games* as recreational activities that are organized and follow agreed-upon rules of play, involve competition with two or more sides, and use criteria for determining who wins. Games involving strategy, chance, and physical prowess remain popular, but electronics and computers have affected the social aspects of games and play.

Games are universal, or very nearly so, in the cultural inventories of known societies, past and present. In their classic article “Games in Culture,” the anthropologists John M. Roberts, Malcolm J. Arth, and John J. Bush (Roberts et al. 1959, 597) defined games as recreational activities “characterized by: (1) organized play, (2) competition, (3) two or more sides, (4) criteria for determining the winner, and (5) agreed-upon rules.” This definition has been particularly influential in anthropology and in the cross-cultural study of games even though it excludes some activities that are commonly referred to as games, including mother-infant activities such as patty-cake, or play activities such as top spinning or making string figures. Roberts and his colleagues referred to such noncompetitive play activities as “amusements.” Roberts and his colleagues also provided an extremely useful classification system for games. This system is based on the factor that is most critical in determining who wins and who loses. They indicated that:

Some outcomes are determined primarily by the physical abilities of the players, some by a series of moves, each of which represents a player’s choice among alternatives, and others either by non-rational guesses

or by reliance on the operation of some mechanical chance device, such as a die; some are determined by combinations of these patterns. All of these ways of determining outcomes are widely distributed among the societies of the world, and it is therefore possible to offer the following general classification of games: (1) physical skill, (2) strategy, and (3) chance. (Roberts et al. 1959, 597)

While others have developed alternate definitions of games and game classification systems, none of these has proven to be particularly useful in cross-cultural research on games and cultural correlates of game types.

The Origins and Evolution of Games

Archeologists and antiquarians have found numerous examples and large varieties of ancient artifacts of game play, such as balls, hoops, marbles, dice, game boards, board game pieces, and playing cards, in sites around the world. Possibly the earliest known game board with pieces was found in an excavation of a predynastic cemetery at El-Mahasna in Upper Egypt in 1909. Alquerque, the ancestor of draughts (checkers in the United States) was played as early as 600 BCE in Egypt.

Early Athletic Games

The development of sporting games, including track and field, wrestling, boxing, and archery, among the ancient Greeks and Romans is well known from archaeological, artistic, and narrative sources. Various forms of art, such as painting and sculpture, from around the world often depict game play. The Greek



Playing Games in December. This drawing from the early Edo period (1600–1867), part of a scroll that presented a month-by-month account of annual events and seasonal plays in Kyoto, shows children playing ball. World Digital Library.

historian Herodotus (fifth century BCE) described games and other pastimes in Lydia (in the west of present-day Turkey) and Egypt while the Roman historian Tacitus (55–120 CE) described dice games as played among Germanic tribes.

The Mesoamerican ball game is one of the best-known ancient games of physical skill. The game and its play are depicted artistically in frescoes, stone carvings, on painted pottery, and in clay figurines of players found in Mexico and Central America. The oldest known ball court, at the archeological site of Paso de la Armada in the state of Chiapas in western Mexico, dates to approximately 1400 BCE. The ball court at Chichén Itzá, the largest in Mesoamerica, was built between 900 and 1100 CE. Simplified versions of the game are still played in northwestern Mexico, principally in the states of Sinaloa, Sonora, and Durango.

Early Games of Strategy

While the precise origins of games of strategy (such as chess or *wei qi* in China; also known as *pa-dok* in Korea and Go in Japan and the West) are either unknown or contested, some aspects of their histories are relatively clear. *Wei qi* means “surrounding game” or “surrounding chess” and has as its goal the capture of territory on the playing board by the placement of markers. While some claim that the game was invented in China more than 4,000 years ago, others suggest that the game originated in Central Asia and diffused through Nepal and Tibet to China. The game is mentioned in the writings of the philosopher Mencius from around 400 BCE, and writings specifically about it date to the Tang dynasty (618–907). *Wei qi*

diffused to Japan in 754 as a gift from the emperor of China to the emperor of Japan.

Chess probably is a descendant of *shaturanga*, a four-player game from India that involved battle between armies that included infantry, cavalry, elephants, and boats, commanded by a raja (king). In a later version, called *shatranj*, the four armies were collapsed to two, much like modern chess. *Shatranj* diffused to Persia from India in the sixth century and reached the Arab kingdoms, Greece, and Medina by about 650. It probably was brought to Europe during the Crusades and became popular in southern Europe by the end of the fifteenth century. Thereafter it rapidly spread throughout the continent.

Mancala (also called *wari* or variants thereof), the third major game of pure strategy found in the preindustrial world, is widespread in Africa. It might have evolved there from an accounting system that used boards similar to those used in the game. *Mancala* boards carved into temple roofs in Memphis, Thebes, and Luxor indicate that the game existed in Egypt prior to 1400 BCE.

Early Games of Chance

Games of chance are based either on the use of a randomization device, such as a die, shuffled playing cards or a roulette wheel, or on non-rational guessing. Early dice included “knucklebones” (usually bones from the ankles of sheep or pigs) that were marked on several sides, but numerous other materials, including antler, pebbles, walnut shells, peach or plum stones, pottery disks, walrus ivory, and beaver or woodchuck teeth, were used as well. Greek and Roman dice were most often made of bone or ivory



A Mesoamerican ball court at Uxmal, in the Yucatan. Simplified versions of this ancient game of skill are still popular in northwestern Mexico.

but amber, marble, porcelain, and other materials were also used. Cubical dice are common, but dice of pyramidal, rectangular, pentahedral, and octahedral shapes also existed.

Playing cards were probably invented in China, perhaps as early as 1000, and may have been based on Chinese dominoes, a game played more like card games than the positional form of modern dominoes. From China, playing cards apparently diffused westward, arriving in Egypt by the twelfth or thirteenth century and Europe by the 1570s. Card games arrived in England around 1520, and the oldest surviving deck of cards from England dates to about 1590. Ordinances directed at regulating card-game playing passed in various parts of Europe in the late fourteenth century indicate both their rapid spread and the alarm that their appearance created among civil and ecclesiastical authorities. The primary concern

with cards, as well as dice, was with their use in gambling games, and prohibitions aimed at gambling have waxed and waned since the end of the fourteenth century. For example, Napoleon legalized casinos in France in 1806, but they were outlawed in 1837. In the American colonies, the Puritans of New England and the Quakers in Pennsylvania generally prohibited gambling, while areas colonized by other English settlers usually viewed it as a harmless pastime. Now, gambling is common worldwide except in those areas where cultural prohibitions still hold sway, such as in Muslim societies and most of China.

Guessing games of chance are also common worldwide. Native North Americans played numerous versions of the moccasin game, for example, in which the object was to guess the location of objects hidden under moccasins. “Rock, paper, scissors” is a modern example of a guessing game.

It should be noted that children at play are not playing about; their games should be seen as their most serious-minded activity. • Michel de Montaigne (1533–1592)

Games as Models

Roberts and his colleagues claimed that games model important real-world activities with greater or lesser degrees of verisimilitude. Chess, for example, is transparently a game of war between two armies, replete with ranks. *Wei qi* is more abstract but still a game of war. Risk is a relatively recent (first published in 1959) war game played on a stylized world map that, unlike chess and *wei qi*, involves chance as well as strategy. While there is no evidence to indicate that board games, such as chess or *wei qi*, were used for training purposes, other competitive events, including the knightly tournaments in medieval Europe and the Afghan horsemanship game, *buzkashi*, provided excellent training for warfare. Monopoly, a model of real estate transactions that also involves strategy and chance, became a popular board game during the Great Depression of the 1930s even though an all but identical game had been patented in the United States in 1903.

Games of chance are commonly held to be models of divination designed to seek supernatural guidance about, or assistance in dealing with, the unpredictable forces of nature that govern human existence. In his monograph *Chess and Playing Cards*, Stuart Culin, the great America game ethnographer, claimed that dice developed from efforts to divine the future by the throwing of arrows (or sticks, straws, or reeds) on the ground and interpreting the result while reciting magical incantations. The “casting of lots,” mentioned in the Bible, was a form of divination based on the interpretation of thrown sticks. Craps players around the world commonly recite “prayers,” saying things such as “Come on, seven!” or “Baby needs a new pair of shoes,” or put their essence on the dice by rubbing them between their hands or blowing on them in the hope of controlling the outcome of the game.

Games of physical skill commonly model either warfare or hunting. Examples include ancient sports such as wrestling, boxing, and spear or javelin throwing as well as the activities of medieval tournaments and fairs, such as jousting, the melee, and competitions

with bows and arrows. Modern sports such as soccer, rugby, and American football bring two opposing armies onto a field of battle while target shooting and trap shooting model hunting. Soccer, or association football, is the world’s most popular participatory and spectator sport. While the modern version was born in nineteenth-century Britain, precursors were played as early as the eighth century. Often known as “mob football,” these games involved an indeterminate number of players (sometimes whole villages pitted against each other), and rules were vague. The origins of mob football are uncertain but its play was associated with Shrove Tuesday. This game modeled combat closely enough to include numerous injuries and often fatalities. According to an ancient document from Workington, England, Shrovetide football players could use any means other than murder and manslaughter to get the ball to the goal. Because of the violence that it engendered, Edward II banned Shrovetide football in 1314, but it is still played in some areas, such as Ashbourne in Derbyshire.

Recent Developments in Games

New games in traditional formats are continually being developed and marketed by game manufacturers but the most radical development in the recent history of games is their mating to the computer. In 1971, Atari marketed the first commercially successful arcade video game, Pong, a two-person game in which an electronic ball was batted back and forth on a video screen by two paddles controlled by the players. Other arcade games such as Tank (1974), Asteroids (1978), and Pac-Man (1980) soon followed. Odyssey, marketed by Magnavox in 1972, was the first home video game. In 1975, Atari introduced a home version of Pong, and dedicated video game consoles from other companies were on the market soon after. Arcade games were introduced to personal computers in the late 1970s.

Contests between computers (and programs) and master players for classic games such as chess and *wei qi* have captured public interest in recent years. In 1997, an IBM computer named Deep Blue defeated



Chinese men gamble on a cricket fight in the late nineteenth century. Gambling, a component of games and sports in many cultures, dates back thousands of years.

reigning world chess champion, Gary Kasparov, two games to one (with three draws), and chess programs for personal computers can now play very strong games. However, to date, no computer has been able to defeat good human players at *wei qi*.

The Future of Games

New games are continually being invented, while older ones may either be modified or disappear. Watching others play games—spectatorship—is growing, as well. While games of physical skill, such as soccer, baseball, or tennis, draw the most spectators, championships in games of strategy, such as chess, and games of strategy with chance, such as poker, attract many viewers as well. The first casino (from the Italian word “casini,” meaning “little house”) opened in Venice in 1626, but the Monte Carlo casino in Monaco quickly became the world’s most glamorous gambling establishment after its opening in 1863. Each of the thirteen American colonies established lotteries and proceeds aided various public works,

including the establishment of libraries, churches, and universities such as Harvard, Yale, and Princeton, but all forms of gambling were illegal in the United States by 1910. The state of Nevada again legalized gambling in 1931 and the first state lottery was established by New Hampshire in 1963. As of 2009 only two states (Hawaii and Utah) do not have some form of state authorized gambling. The legalization of gambling in much of the world has led to increased participation in games of strategy with chance (such as blackjack, poker, baccarat) and games of pure chance (such as craps, roulette, and lotteries). Casino gaming and lotteries, while providing governments with a new source of revenue, outlets for recreational gamblers, and economic development in areas supported by casinos, also have negative aspects. Gambling addictions are now more common, and the need for policing, access roads, parking, and waste disposal strains local resources. So, while some forms of game playing, such as card games in the home, may be declining because the social gatherings that supported them in the past are themselves declining,



more people are participating in and watching games being played outside the home, and that trend is likely to continue in the future.

While traditional board games and card games may be waning in popularity, computer-based home video games, as well as online games, constitute a huge growth industry and one of the most rapidly expanding forms of entertainment worldwide. (A recent survey indicates that young people in the eight-to-eighteen-year-old range spend an average of 7.38 hours per day, or nearly 53 hours per week, exposed to “entertainment media” including television, music/audio, computers, video games, print, and movies—a significant number of hours that limits other forms of play.) Home use of video games, as well as the increased popularity of Internet game parlors, has led to a steep decline in the popularity of arcades and arcade games. As video and Internet games are most often played alone, either against the game program or distant opponents, they have resulted in less social play than takes place in traditional card or board games and even in arcade video games. Whether such games model the real world of today, as Roberts and his colleagues suggested in the late 1950s, is a question worth pondering.

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See also Leisure; Sports

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Gandhi, Mohandas

(1869–1948)

LEADER OF INDEPENDENCE MOVEMENT IN INDIA

Gandhi's significance as a twentieth-century philosopher, pilgrim, world leader, and writer lies in his uncompromising reliance on ahimsa—the Hindi and Buddhist doctrine of nonviolence and restraint from harming all forms of life—as a moral force for reforming and transforming unjust established authority.

Mohandas Gandhi (1869–1948) mobilized the largest nonviolent mass movement known in world history under the banner of *satyagraha*—the active pursuit of truth through love and nonviolence (ahimsa). Gandhi's ideas of truth and justice have contributed immensely to the development of moral and political thought, and his demonstrations of the positive and revolutionary power of nonviolence has had a worldwide impact. His support for nonviolent campaigns dedicated to social and political change around the world gave a sense of power to the powerless and of hope to the hopeless.

Although Gandhi was a prolific and inspirational author whose writings gave guidance to thousands of people around the world, as well as the founder of many ashrams (spiritual retreats) and communal settlements, his life was his biggest message. He is regarded as a mahatma, or great soul, and lived a life of simplicity, nonpossession, celibacy, truth, and nonviolence.

Mohandas Gandhi was born to Putlibai and Karamchand Gandhi on 2 October 1869, in the city of Porbandar, Gujarat, in western India. His father was the prime minister of Porbandar. At thirteen, Mohandas was married to Kasturbai, also thirteen, and in 1888 sent to Britain for higher education in the field of law. Unable to secure a job on his return to

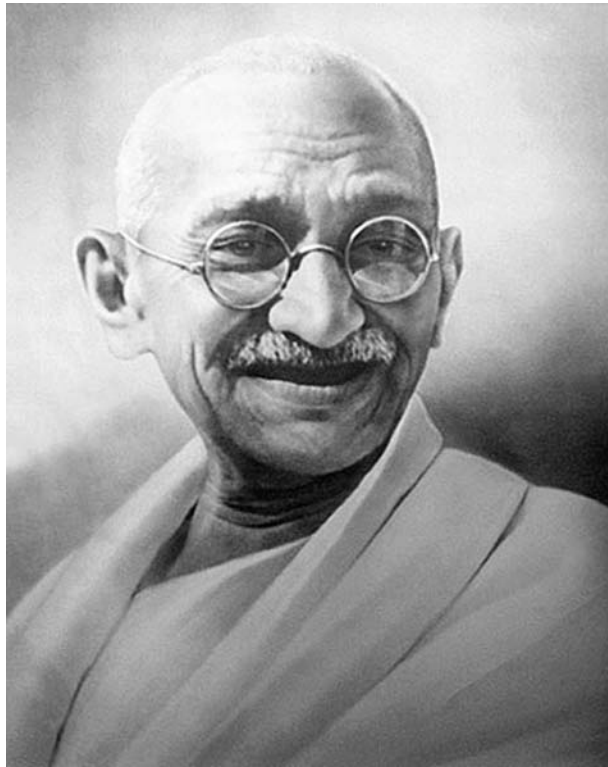
India, Gandhi sailed to South Africa in 1893. There he discovered the oppressive and unjust policies of the British when he was thrown off the train for having a first class train ticket and sitting next to white citizens of the Empire. This was a transforming event in Gandhi's life. A South Africa rife with racial discrimination against colored people became the laboratory for Gandhi's initial experiments with *satyagraha*. Later Gandhi built on these experiments to launch mass *satyagraha* movements during India's struggle for freedom from British rule.

On his return to India in 1915, he became a “pilgrim of truth,” uncovering the roots of mass poverty and unrest over the next five years, and in 1920 he assumed the leadership of the Indian National Congress, the body officially pursuing the struggle for India's independence from the British. Gandhi led several mass campaigns of nonviolent noncooperation and civil disobedience against British rule, and India gained its independence in 1947.

But for Gandhi, national self-government, or *swaraj*, meant more than just independence. To him it meant peoples' total moral authority over themselves so as to require no external coercion. Therefore, Gandhi became an active social reformer, crusading against the Indian caste system, the exploitation of women, and cruelty to animals.

Gandhi's radical insistence on the oneness of human beings, and his persistent efforts to keep Indian Hindus and Muslims united, set him in opposition to fundamentalist Hindus. Earlier attempts on his life had failed, but on 30 January 1948, he was shot during his prayer meeting at the Birla House in New Delhi by a Hindu nationalist, Nathuram Godse. Although Gandhi's assassination appears ironical to some, for

It is unwise to be too sure of one's own wisdom. It is healthy to be reminded that the strongest might weaken and the wisest might err. • **Mohandas Gandhi (1869–1948)**



Mohandas Gandhi, the leader of India's independence movement, was a proponent of peaceful resistance.

others it became a symbol of his fearless dedication to the principles of truth and nonviolence.

While Gandhi's nonviolent philosophy and actions evolved in response to larger social and political problems he personally experienced, he records in his autobiography three major influences on his life and thought: the religion of Jainism, with its core principle of nonviolence; *Unto This Last*, an 1860 collection of essays critiquing classical economics by the British writer John Ruskin; and Leo Tolstoy's treatise on Christian nonviolence, *The Kingdom of God is Within You*.

Gandhi tirelessly endeavored to understand the roots of political and social problems he confronted and to devise means to address them effectively but nonviolently. He felt that violence resulted from poverty, injustice, lack of self-discipline, selfishness, and

ill will. In his seminal work, *Hind Swaraj*, Gandhi offers an enduring solution to these problems in his vision of a civilization that encourages love, truthfulness, social service, equality, and cooperation. Gandhi's ideal society discourages politics without principle, wealth without work, commerce without morality, education without character, pleasure without consciousness, science without humanity, and worship without sacrifice.

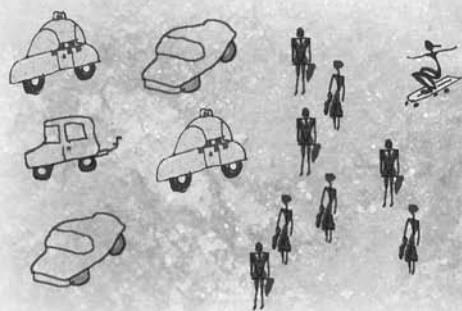
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See also British Empire; Civil Disobedience; Nonviolence

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Gay and Lesbian Rights Movement

Tolerance of (and attitudes about) gay and lesbian behavior varied throughout history as religious proscription gave way to punitive civil laws and “enlightenment” made homosexuality a mental illness rather than a crime. The first efforts at “gay liberation” were a phenomenon of the early twentieth century. Hot-button issues in the twenty-first include marriage rights for gays and the harsh persecution of homosexuals in more than seventy countries.

Gay men and lesbian women have existed throughout history, although attitudes toward them have varied in different eras. In ancient Greece people tolerated homosexual liaisons under certain circumstances, whereas certain verses of the Hebrew, Christian, and Islamic scriptures speak of homosexual behavior as a grave sin. Negative attitudes toward homosexuality often evolved from interpretations of these scriptures and were written into the civil law in numerous countries. In 2010 more than seventy countries have laws that criminalize homosexuality, and in some countries homosexuality is a crime punishable by death. In 2002, according to Amnesty International, Saudi Arabia executed four men for homosexuality; in June 2009 a homosexual man was decapitated and then publicly crucified in Riyadh after being charged with murder and abduction. In Brazil, according to the international AIDS charity AVERT, 2,509 gay men were executed between 1997 and 2007.

During the Enlightenment the punitive attitude toward homosexuals was replaced in many European countries by the belief that being gay is a mental disease. (The Enlightenment was a philosophic

movement of the eighteenth century marked by a rejection of traditional social, religious, and political ideas and an emphasis on rationalism.) Instead of being executed, homosexuals were committed to insane asylums. But in England the Labouchere Amendment (named after the British Member of Parliament Henry Labouchere) was passed in 1885, making homosexual conduct punishable by two years in prison. This law would be used to convict the Irish author Oscar Wilde in 1895. It was also exported to all of the British colonies, many of which still had a version of it on the books well into the 1980s. (It was repealed in England in 1967.)

For centuries people seemed to have a “don’t ask, don’t tell” attitude about sexual orientation. Famous people were believed to be homosexual, but modern historians often have a difficult time finding proof because in the past people considered writing in any detail about private sexual conduct to be vulgar. The so-called Boston marriage of Victorian times is a good example: Strong and independent women established loving friendships and lived together as companions, but few documents conclusively show whether these relationships included sex or were mainly platonic.

What we know as “gay liberation” is a comparatively modern phenomenon. In countries such as Germany people made sporadic efforts to change the laws or change society’s attitudes. In Berlin the little-known author Karl Maria Benkert (who later changed his name to “Karl Kertbeny”) became an advocate for the rights of homosexuals (in fact, he is credited with inventing the term); in 1869 he wrote several essays challenging the myths that homosexuals are effeminate or defective and stating his belief that homosexuality is natural (a person is born that way) rather than



In the United States same-sex marriage has become the next frontier for the gay and lesbian rights movements.

Photo by Emily Roesly.

a moral failing. Although he was a man ahead of his time, Benkert's assertions did not become the prevailing views of his era. Occasionally an enlightened doctor or educator would take up Benkert's views. In Germany in 1897 Magnus Hirschfeld, a neurologist, founded the Scientific Humanitarian Committee. Hirschfeld regarded homosexuals as a "third sex" and advocated unsuccessfully for the repeal of laws that criminalized their behavior. When the German Nazi leader Adolf Hitler took power in 1933, groups who taught tolerance of gays were banned, and thousands of homosexuals were later put to death by the Nazis.

In England in 1914 the psychologist Havelock Ellis co-founded the British Society for the Study of Sex Psychology. In addition to educating the public about human sexuality, Ellis taught tolerance of homosexuals; he believed that being homosexual (educators and doctors used the term *sexual inversion*) is not a disease and should not be considered a crime, but his ideas found little support in England at that time. In 1928, when the British novelist Radclyffe Hall published *The Well of Loneliness*, a book that was sympathetic toward its lesbian characters, the British government immediately judged it to be obscene, and all copies were seized.

Early U.S. Gay Rights Organizations

In the United States the Chicago Society for Human Rights was perhaps the first U.S. gay rights organization. Postal clerk Henry Gerber founded it in 1924,

but by 1925 Chicago police had shut it down. Gerber was briefly arrested, he lost his job, and his efforts at advocating for homosexuals received little public support.

In 1951 Los Angeles music teacher Harry Hay and several of his colleagues founded another U.S. homophile organization, the Mattachine Society. It was followed in 1955 by the Daughters of Bilitis, founded by Phyllis Lyon and Del Martin as an advocacy group especially for lesbians. These organizations provided support and encouragement but often did so quietly. Although they sought more respect and tolerance, they also advised members to assimilate as much as possible and to avoid dressing or behaving in ways that would call attention to their lifestyle. Later some militant members of the emerging gay liberation movement would regard the Mattachine Society and the Daughters of Bilitis as accommodationist, too willing to remain in the closet and too afraid to stand up for greater acceptance; but in a society dominated by the conservative politics of U.S. Senator Joseph McCarthy, when homosexuals were often arrested for "lewd conduct," the 1950s were not a good time to be vocal about one's sexual orientation.

Although no single event created the U.S. gay rights movement, most historians agree that the Stonewall Riots were a defining moment. In June 1969 in New York City police raided a gay bar called the Stonewall Inn; such raids were common and usually resulted in numerous arrests. But this time the bar's patrons decided to fight back, leading to three days of civil

Never be bullied into silence. Never allow yourself to be made a victim. Accept no one's definition of your life; but define yourself. • **Harvey Fierstein (b. 1952)**

unrest. In the United States this was the era of the civil rights and women's rights movements, and that environment may have encouraged homosexuals to actively oppose the prejudice they often encountered. The Stonewall Riots mobilized the homosexual community and led to an increasing unwillingness to assimilate or accommodate.

What happened at Stonewall would happen in other cities. In Canada Toronto's gay community was subjected to a series of raids of bath houses in February 1981. Police used sledgehammers and crowbars and arrested 338 people. Members of the gay community were horrified by what they felt was overkill, and the next night four thousand gay men and lesbian women staged a protest march, the largest demonstration of its kind in Toronto. Like Stonewall, the demonstration energized the gay community, making members even more determined to fight for better treatment.

In India, a country where gay and lesbian acts are still criminal offenses, a defining event occurred in December 1998. A movie by the director Deepa Mehta premiered, but this one was unique. *Fire* featured a subplot in which two women fall in love. Religious conservatives were outraged and attacked the theater in Mumbai (Bombay) where the movie was being shown, breaking windows, beating up patrons, and vandalizing the building. Similar events occurred in other Indian cities. However, this time a coalition of civil libertarians, human rights activists, and free speech advocates joined with members of the lesbian community to march and protest both the attacks and the government's efforts to censor the movie. This protest march marked one of the first times that lesbians had been visible in India; most lived hidden lives, afraid to call attention to themselves. The protest march led to the founding of the Campaign for Lesbian Rights. In June 2003 a rally and march were held in Calcutta to protest laws that make homosexuality punishable by ten years in prison; several hundred people marched peacefully in one of the few public demonstrations held by India's gay community.

A number of groups emerged in the United States during the 1970s and 1980s to fight for the rights of gay men and lesbian women. One of the best known was the National Gay Task Force (NGTF) in 1973;

in 1985, it changed its name to the more inclusive National Gay and Lesbian Task Force (NGLTF). The organization not only advocates for changes in discriminatory laws in the United States, but also conducts sociological studies about society's changing attitudes, works with the government to develop strategies to combat violence against gays, monitors the media for antigay content, and conducts international conferences about gay issues. When AIDS first appeared in the United States during the 1980s, NGLTF was at the forefront in combating myths and prejudices and educating the public about HIV. A more vocal and sometimes controversial organization is ACT-UP (AIDS Coalition to Unleash Power). Founded in 1987, it is known for its slogan "Silence=Death" and its commitment to speak out against discrimination in a demonstrative manner, using tactics of civil disobedience called "direct actions." ACT-UP works to change both policy and attitudes about AIDS. Another advocacy group is GLAAD (Gay and Lesbian Alliance Against Discrimination), which was founded in 1985 to monitor the media and advocate for an end to antigay stereotypes in print, broadcasting, and film.

British Activist Groups

In England one of the best-known activist groups is OutRage, founded in 1990. It, too, uses civil disobedience, staging unique and often provocative direct actions to call attention to discrimination and to defend the rights of England's gay community. OutRage is especially good at getting media coverage: Members have staged "kiss-ins," performed a ceremony described as an "exorcism of homophobia," and staged noisy but nonviolent demonstrations at police stations when the group felt that the police were not doing enough to arrest people who attack gays. Another gay rights group in the United Kingdom is Stonewall, which was founded in 1989. It uses lobbying, working with government officials and members of Parliament, to improve the legal rights of gays. Stonewall has also done research on attitudes about homosexuality and sponsored workplace forums so that employers can better understand and support diversity.



Australia seems to have been influenced by the U.S. gay rights movement. Melbourne has a chapter of Daughters of Bilitis. Australia also has a number of activist groups, such as the Tasmanian Gay and Lesbian Rights Group, which has fought for the decriminalization of homosexual behavior. Economic advocacy groups, such as the Australian Gay and Lesbian Tourism Association (AGLTA), also work to find gay-friendly and gay-tolerant hotels and places for visitors to shop.

Criminality

Even in countries where homosexuality is still regarded as a sin or a crime, advocacy groups exist, but they run the risk of being shut down by the government. For example, in Nepal in June 2004 the Supreme Court imposed a ban on the Blue Diamond Society, which advocates on behalf of gay men and lesbian women and conducts HIV/AIDS education. Advocacy groups exist in a handful of Muslim countries (most notably Turkey), but in more theocratic cultures gay men and lesbian women have turned to the Internet to discuss issues while avoiding government crackdowns. In the United States some Muslim immigrants started Al Fatiha (the Opening) in 1997; when it held a conference in 1998, participants came from all over the United States and from South Africa, Canada, Belgium, and the Netherlands to discuss the problems facing gay Muslims worldwide.

Although advocacy has been helpful in many parts of the world, Amnesty International stated in its 2000 report that more than eighty countries still have laws that define homosexual behavior as criminal; twenty-six of these countries are Muslim. (The 64-page 2009 report on state-sponsored homophobia issued by the International Lesbian and Gay Association also lists eighty countries.) In some countries such laws are rarely enforced, whereas in others homosexuals are persecuted. In 2003 Human Rights Watch wrote a report critical of how the government of Egypt rounds up, jails, and possibly tortures homosexuals. In Tanzania the government in April 2004 passed legislation that would make homosexual acts punishable

by twenty-five years in jail. In Poland marchers who attempted to stage a peaceful demonstration in favor of gay rights in June 2004 were attacked and beaten by members of a far-right group called the “Młodzież Wszechpolska” (All Polish Youth), part of the nationalistic and militantly antigay Liga Polskich Rodzin (League of Polish Families).

Perhaps the first country to add to its constitution a provision that outlaws discrimination against gays is South Africa, which did so when its new constitution was written in 1994; an advocacy group, the National Coalition for Gay and Lesbian Equality, had much to do with getting the provision approved. Led by professor Edwin Cameron and gay activist Simon Nkoli, the coalition also has litigated to have laws that criminalize homosexual acts overturned and gained medical benefits for same-sex couples.

Same-sex marriage and civil unions have become a hot-button issue for gay men and lesbian women, and activist groups fight to expand benefits and rights to gay couples. Some people, mostly religious conservatives, have resisted the idea of gay marriage. In the United States, Massachusetts became the first state to permit gay marriages in May 2004; Vermont recognized civil unions in July 2000. Same-sex marriage became legal in Connecticut in 2008, and in Iowa and New Hampshire in 2009. But in a conservative backlash, thirty states have passed laws banning such partnerships. And in California, which briefly allowed same-sex marriages in early to mid 2008, voters reversed the ruling late that year. Worldwide the Netherlands, Belgium, and three provinces of Canada permit same-sex marriage, and a few European countries—France, Norway, Denmark, and Germany—offer limited forms of civil union. Some countries that once criminalized homosexuality are gradually relaxing such laws; in India in 2009, the Delhi High Court ruled that banning sexual relations between consenting gay adults is unconstitutional. But more typical is what occurred in June 2004 in France, when two gay people were married by the mayor of Begles, a suburb of Bordeaux. The mayor, Noel Mamere, was promptly suspended for a month, and the marriage was nullified by the French courts.

And in Uganda, where a constitutional amendment banning gay marriage passed in 2005, the government has repeatedly been accused by human rights groups of harassing gay men and lesbians.

Worldwide many people now see gay rights as a human rights issue, and certainly more acceptance exists than did when the Stonewall Riots occurred. However, as long as conservative religious views predominate, and as long as stereotypes persist, members of the gay and lesbian rights movement will continue their work.

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See also HIV/AIDS; Women's and Gender History; Sex and Sexuality

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General Agreement on Tariffs and Trade (GATT)

GATT, the General Agreement on Tariffs and Trade, began as a post-World War II document to negotiate policies on international trade. After forty-seven years it culminated in 22,500 pages of text, and an ambitious set of trade-liberalization agreements covering goods, services, and intellectual property. GATT established and was replaced by the World Trade Organization in 1994.

The General Agreement on Tariffs and Trade (GATT) was a relatively informal document created after the World War II to coordinate policies on international trade. Its major aims were the abolition of quotas, reduction of tariff barriers, and promotion of nondiscriminatory free trade. Its origins trace back to 1947 when twenty-three states met in Geneva and negotiated a statement of principles for international trade. This agreement originally was intended to be part of a draft charter for an International Trade Organization (ITO), the third leg of the Bretton Woods economic order, along with the International Monetary Fund and World Bank. The “Havana Charter” of the ITO contained the GATT, as well as provisions relating to employment, commodity agreements, restrictive business practices, international investment, and services. The 1947 GATT, which consisted of negotiated trade concessions and rules of conduct, entered into force as the GATT Protocol of Provisional Application on 1 January 1948, although the rest of the Havana Charter never was ratified, primarily because of opposition in the U.S. Congress. For forty-seven years, the ever-expanding group of contracting parties to the GATT (128 states in 1994) treated the instrument as if it

were a permanent commitment, though actually it was merely a provisional legal agreement. A small secretariat and administrative staff for the GATT was created in 1955 in Geneva, though not as a formal international organization. These personnel were tasked with implementing trade objectives of participating states, namely to apply a nondiscriminatory, most favored nation approach toward trade relations, with tariff reductions presumably based on the principle of reciprocity.

From its creation until 1994, the GATT states engaged in eight negotiating sessions, called “rounds,” to reduce tariffs and produce in piecemeal fashion rules to govern international trade. Nontariff barriers were dealt with after 1965, among them antidumping measures, subsidies, countervailing duties, import licensing procedures, and selective government procurement. These agreements were contracted by only a few of the GATT members, mainly those who were members of the Organization for Economic Cooperation and Development (OECD).

The final GATT negotiating session, the Uruguay Round, proved the most prolonged and most comprehensive. It lasted from 1987 through 1994 and established a legal institution—the World Trade Organization—to replace the GATT of 1947 with all its amendments. Established by the Marrakesh Protocol on 1 January 1995, the WTO is a multilateral institution charged with administering rules of trade among member countries. Legally it embodies an international intergovernmental organization, possessing international personality (that is, the WTO possesses international legal rights and duties, with the capacity to bring or defend legal claims between states) and competence in its own right independent

of its member governments. Consequently, the WTO enjoys legal privileges and immunities necessary for the exercise of its mandate. As a body of legal rules, the WTO contains the GATT of 1994 and other non-goods-related agreements.

The WTO represents the preeminent international body dealing with the rules of trade between states. The 153 members of the WTO in 2009 account for more than 97 percent of world trade, and its decisions affect nearly all the goods and services moving in international commerce. At its core are the WTO agreements, which operate as the ground rules for international commerce and trade policy. The main objectives of the WTO agreements are to assist trade to flow freely, achieve liberalization through negotiation, act as a forum for trade negotiations, and ensure impartial settlement of disputes. Succinctly put, the WTO's aim is to facilitate the free, fair flow of trade in a predictable fashion for its member states.

The WTO provides both a code of rules and a forum for governments to discuss and resolve trade disputes and to continue negotiations toward expanding world trade opportunities. The WTO includes all the GATT provisions for trade in goods, plus rules developed for trade in services and intellectual property, as well as rules and procedures governing the settlement of disputes. It operates as the principal international body concerned with multilateral negotiations on the reduction of trade barriers and other measures that distort competition. In this regard, drawing heavily from the GATT legacy, the WTO embraces five fundamental principles that establish the foundation of the modern multilateral commercial system: (1) nondiscrimination through most-favored-nation treatment (MFN); (2) freer fair trade; (3) more predictable trade policies; (4) encouraging open and fair competition; and (5) concessionary treatment for less developed countries.

The WTO's rules, called agreements, were negotiated during the GATT's Uruguay Round. These rules run some thirty thousand pages in sixty agreements and separate commitments (called schedules), and set out acceptable procedures for customs duties and opening markets. Through these agreements WTO members operate in a nondiscriminatory trading system that upholds their rights and obligations. Each state is guaranteed that its exports will be treated fairly and consistently by other members of the WTO. The Uruguay Round produced 22,500 pages of text that list individual countries' commitments to cut and bind customs duty rates on imports of goods, which entailed the most ambitious set of trade-liberalization agreements in the GATT's history. The WTO agreements cover goods, services, and intellectual property. They articulate principles of liberalization and permissible exceptions. They prescribe special treatment for developing countries. They require governments to make their trade policies transparent. With the formal conclusion of the Uruguay Round on 15 April 1994, the GATT went out of existence.

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See also International Organizations

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Genetics

Genetics concerns the scientific study of inheritance and variations in living organisms. While it has long been known that “ancestors” passed on certain traits to their “offspring,” from around the mid-nineteenth century it became evident that organisms inherit these traits via distinct units, now known as genes. Genetic change occurs over time through mutations and natural selection or evolution.

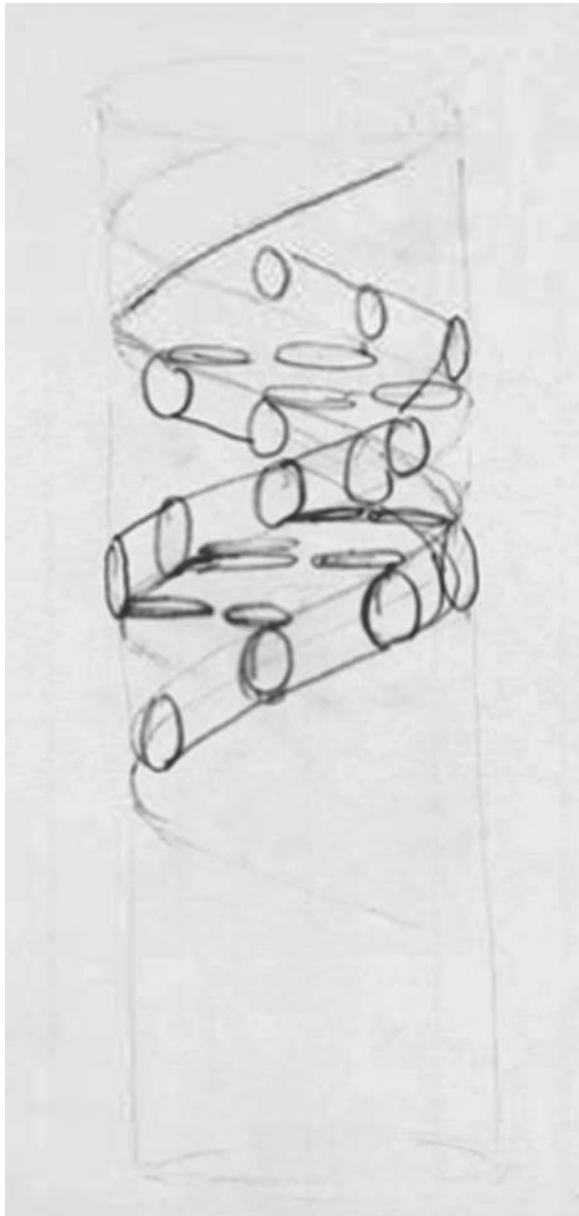
The most recent common ancestor (MRCA) to humans and to the nearest primates, chimpanzees, lived in Africa, most probably in the tropical forest, 5 million years ago, a date that some prefer to set somewhat earlier, by 1 or 2 million years. The forest is still the environment where chimpanzees and earlier ancestors like gorillas and orangutans lead arboreal lives. Because bone conservation is not good in a forest environment, almost every known intermediate ancestor in the direct line to humans comes from drier environments in the Rift Valley, extending from East Africa to South Africa. This is where almost all the earliest human fossils were found.

Two major evolutionary changes were observed in the human line but not in the simian lines: the transition to the erect, bipedal posture, which favored greater speed on the ground and also freed the hands for the making and use of tools, and an apparently continuous increase in brain size. The latter, and the development of phonation organs, may have facilitated the genesis of articulated speech, which is not present in primates, although they can be taught the meaning of hundreds of words, using special teaching techniques. The capacity to form complete sentences makes the transmission of complex thoughts possible.

The capacity to communicate using language that is typical in the human species is a real source of human superiority to all other vertebrates, probably the most important one. It must have been the major skill that made it possible for a relatively small group of East Africans to grow and expand across the whole Earth, starting about a hundred thousand years ago. The information about this comes from paleoanthropological and archeological observations that offer dates and places. The evolution from the MRCA to modern humans was, however, long and slow, with several culs-de-sac, but a common evolutionary theme throughout the human line is an increase in brain size, by a factor of four times, as judged from the size of the brain case.

One particularly well-dated woman, *Australopithecus afarensis* (Lucy), 3.2 million years old, may be at the origin of the bifurcation into an extinct line leading to several Australopithecine species, and that leading to *Homo sapiens sapiens* (the species to which we all belong). The genus *Homo* is given an age of about 2.5 million years and is characterized by the first use of rough stone tools, hence the first species of the human genus is called *Homo habilis*. Some improvement in shape and increased variation of shapes and uses of tools is noticeable at the time of *Homo erectus* (dated about 2 million years ago). There is currently a tendency to rename these fossils, but we retain the simpler, earlier terms. *H. erectus* is the human who, starting 1.7 million years ago from Africa (where the Rift Valley is still the only source of finds) relatively quickly settled most of Europe and Asia.

The slow increase in brain size stopped around 300 kya (300,000 years ago). For a long period, between 500 kya and 40–30 kya, two types of humans



Francis Crick, who with James Watson obtained new insights into the complex structure of the DNA molecule, made this pencil sketch of the double helix, the twisted ladder of genetic code.

in different parts of the world were particularly successful and left a greater number of fossil proofs of their existence. One type, Neanderthal, lived in Europe and extended to western Asia, reaching the Middle East between 80 and 60 kya. According to some anthropologists, Neanderthal was the ancestor of modern Europeans, but recent genetic work on fossil remains has shown that it became almost certainly completely extinct. According to others, the branch leading to all modern humans developed in

Africa, in the Rift Valley. The only fossil predecessors of modern humans were found in Africa. Two recent finds, an *erectus* of 1 mya found in Eritrea, and a 150 ky-old almost perfectly modern skull found not very far away in Ethiopia, filled important gaps and have helped to show a continuous evolution in East Africa of modern humans from the earliest types.

Genetic Analysis and Human Migration

Genetic analysis of human evolution was started very soon after the discovery of genetic variation. At the beginning the only frequent (polymorphic) genetically variable traits inherited in a clear-cut way according to Mendel's laws were blood groups ABO, RH, and others. These traits are inherited equally by both parents and could be used to prove the influence of the four standard factors of evolution and to follow their effects quantitatively thanks to the mathematical theory of evolution, developed in the 1920s and 1930s by Ronald Aylmer Fisher, John Burdon Sanderson Haldane, and Sewall Wright.

The first factor, *mutation*, is the source of all inherited differences, which we now know are changes in DNA: a linear molecule formed by a chain of four simple substances called nucleotides or bases—A, C, G, T—attached one to the other, that are reproduced and passed to descendants in the same order in which they were in the parents. Human DNA is made of 3.1 billion bases divided in twenty-three filaments of unequal length, the chromosomes. Mutation is a transmissible change in DNA: the smallest and most frequent one is the replacement of one of the nucleotides by another of the four. It happens spontaneously at a very low rate. A mutant (an individual carrying a new mutation) may increase in relative frequency over the generations because of *natural selection*, when it has an advantage over the parental type, either because it survives some disease or other unfavorable environmental condition better and/or is more fertile. When mutation is more disadvantageous or even deleterious than advantageous, carriers tend to be eliminated by natural selection and then



Researchers in the genetics laboratory at Iowa State College. Ames, Iowa, May 1942. Photo by Jack Delano, Library of Congress.

the mutation disappears. Most mutations, however, are neither advantageous nor disadvantageous (i.e., are selectively “neutral”), and their permanence in the population, their decrease, increase, or even fixation at the end, are determined exclusively by chance. Like natural selection, this phenomenon, called *random genetic drift*, causes changes in the frequencies with which all the types of genes caused by mutation are found in populations in successive generations. Both selection and drift tend to differentiate a population from all others. Natural selection causes adaptation to the environmental conditions in which an organism is living that change with time or place, while drift acts only according to the laws of probability. Drift therefore causes changes of greater relative magnitude in populations that are of smaller size.

Migration of individuals from one population to another tends instead to homogenize populations whose genetic differences have been caused by selection or drift or both. But when a group migrates to a previously unsettled area, it may expand demographically and create a new population that, if successfully settled, will eventually grow and differentiate from the original one. Under these conditions migration of a group to a new area may cause differentiation, and it enhances drift effects, especially if the migrating group is small.

Genetic considerations lead us to conclude that modern humans derive from one small population of perhaps one or a few thousand individuals in East Africa that started expanding slowly across Africa about 100 kya. Members of this small group, a tribe, must have almost by definition spoken a single language, which was probably as sophisticated as any language existing today. Like practically all humans until then, they were hunter-gatherers (also called foragers), living in small groups at very low density (on the order of 0.1 inhabitants per square kilometer), and roving semi-nomadically within their hunting territories.

Around 50 kya, a group in a very similar area started expanding more rapidly, demographically and geographically. They were probably helped by some innovations, like rough navigation means, and a new more-sophisticated stone tool set, in addition to modern language, which they most probably shared with those ancestors who were responsible for the first slower expansion of 100 kya. They may have traveled along the southern coast of Asia, using rough navigation means; evidence for this comes mostly from the fact that from Southeast Asia they reached New Guinea and Australia and had to cross various long tracts of sea. They also reached Central Asia from which they moved out in all directions: east to East Asia, north to Siberia and America via the Bering

Most intellectuals today have a phobia of any explanation of the mind that invokes genetics. • **Steven Pinker (b. 1954)**

Strait (probably all emerged at the time of the crossing, before 10 kya), and west to Europe. The expansion from Central Asia was especially rapid. After more than 10 kya, all the land inhabited today, except Polynesia, had been settled (it was settled between 6 and 1 kya, using sophisticated boats and navigation systems, starting from Taiwan or the Philippines).

After 13 to 12 kya, the last glaciation ended and there were changes in the flora and fauna as a result of the weather change. In many parts of the world, especially in temperate areas like the Middle East and the Nile Valley, in China and on the Mexican highlands, people started living on cereals (wheat and barley in the first region, rice in southern China and millet in the north, and in Mexico corn and many other vegetables). In areas in which cereals became the major food source, it became convenient to practice agriculture, which brought crops closer to home and made it useful to build more permanent houses. Nomadic habits were largely replaced by domestic ones. In some regions wild animals were easily domesticated. In the Middle East it was possible to domesticate sheep and goats, pigs, cattle, and later horses (north of the Black Sea and the Caucasus). In northern Syria, a mixed agro-pastoral economy was already developed by 11,500 years BP (before the present). It is possible that Europe owes its presently flourishing economy to having been able to develop the most effective domestic animals.

The story of the recent peopling of the world was first modeled by reconstructing trees of populations tested for standard genetic markers and using genetic distances between population pairs calculated from the frequencies of genetic traits in pair members. One way to reconstruct a tree is to start from the nearest populations (having the smallest genetic distance) and continue bringing all the population pairs together in order of increasing distance until the root of the tree is reached. The best way to reconstruct the root involves using remote ancestors for traits comparable to those used in the analysis of the group of populations. It became clear that trees reconstructed were the same irrespective of the genetic traits used, provided adequate numbers of traits are employed.

The independence of conclusions, irrespective of the type of genetic traits studied, is an important guarantee that we can trust them.

Since the 1990s or so it has become possible to reconstruct trees of markers that are found only in males (Y chromosomes) or are found in both sexes but are transmitted only by females (mitochondrial DNA or mtDNA). These can be studied in single individuals rather than in populations, and the trees reconstructed in this way are true genealogies. For technical reasons they are particularly accurate and free from doubt for the Y chromosome, but there also is significant agreement between genealogies of mtDNA and Y chromosomes, apart from well-understood exceptional behavior in specific populations that have specific marriage customs. These studies have confirmed results obtained on gene frequencies of populations for markers carried in the usual chromosomes and have contributed sharper conclusions on dates and places of major events in human prehistory.

The Importance of Agriculture

The introduction of agriculture was probably a reaction to need: the hunting-gathering economy practiced until then was not sufficient to guarantee enough food, making food production necessary. It inevitably started a continuous raise of population density, in spite of fluctuations due to accidental severe disturbances. In the 90,000 years prior to the beginnings of agriculture, the population had increased from the initial one or few thousand at the start of growth, by a factor of at least 1,000. In the last 10,000 years, agriculture raised population numbers by another factor of 1,000.

The spread of farming around the places of origin is an unavoidable effect of the increase in the number of farmers made possible by the increase of available food that farming generated. When local population growth rapidly reached saturation, it caused migration to nearby areas in search of new fields. This search also was promoted by the rapid exhaustion of the soil caused by primitive agricultural methods. There were continuous technological improvements



like plowing and irrigation over long periods of time, which also created new problems, for example, desertification due to soil salinization in the Middle East or overgrazing in the Sahel. Nevertheless, farming expanded from the place of origin over long periods at a constant rate, estimated at 1 kilometer per year toward Europe (where a better archeological coverage permits an accurate average estimate of the rate of spread). The expansion was determined both by the higher growth rate of the number of farmers (called demic diffusion) and by technological adaptation by local hunter-gatherers (cultural diffusion of the technology).

Genetic studies show different results for the relative role of the genetic/cultural contribution of original farmers to the genetic constitution of European men and women. The problem gave rise to an intense scientific debate, still not completely settled, but the results indicate from 50 to 60 percent demic diffusion for males, and 20 percent for females, or an average for the two sexes that is around one-third genetic and two-thirds cultural. Another example of demic diffusion due to agriculture is found in the Bantu expansion from Cameroon to South Africa, which started about 3,000 years ago and only recently came to an end. Here also, there is a less well investigated but clear male-female difference in the same direction. Hunter-gatherers are everywhere considered socially inferior, and passage to the social class of “farmer” ordinarily was permitted only to females through marriage to a member of the higher class (hypergamy). Male polygamy (polygyny), probably more frequent among farmers, also helped in the same direction.

Farming was initiated everywhere while tools were still made of stone. In Europe (but not in Japan), the term *neolithic* (as opposed to *paleolithic* or *foraging*) refers to the presence of agriculture, which caused a change. The European neolithic adopted ceramic around 3,000 years after the inception of farming, while in Japan ceramics developed much earlier (almost 12 kya), but agriculture entered from Korea only about 2,000 years ago. Technological developments have driven genetic, cultural, and social evolution of modern humans from the very beginning.

The next major innovations after farming were the introduction of metals, first bronze, beginning some 5 kya, probably in eastern Europe, followed by iron 3,500 years ago. The spread of these two major technical developments to the rest of the world was much more rapid than that of agriculture. Metal technology contributed greatly to the development of war. Its beginnings tend to be similar in several areas to that of writing (and therefore of recorded history).

Benefits of Genetic Variation

The recent origin of all modern humans from a single, small population living in a narrow area explains why human living populations show small difference: There was not enough time for the generation of much genetic differentiation among the populations that dispersed over the Earth. We can, however, guess the geographic origin of individuals on the basis of some external traits like skin color and facial and body traits that represent the adaptation to a highly varied set of environments, and that differ by climate, flora, and fauna. But each population, even if small, harbors considerable genetic variation, which ensures its survival in the face of new and unpredictable challenges.

In general, high genetic variation is beneficial to a population. Pure races are a fiction, and even if they were possible, they would be truly undesirable. By contrast, cultural differentiation, for instance, the linguistic one, tends to be greater between than within populations. Culture—intended as the knowledge, customs, habits, and values accumulated over generations—needs to be sufficiently homogenous for the harmonious life of a society, in the same way that language spoken by individuals living together must be similar enough for it to achieve its major purpose, mutual understanding.

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See also Human Evolution

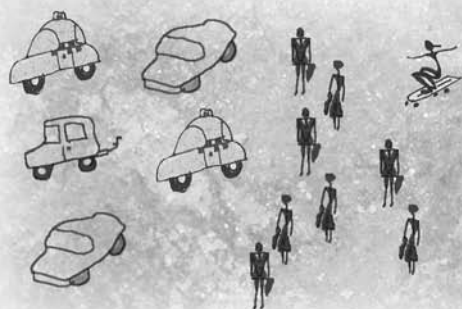
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Genocide

Genocide is the deliberate and systematic attempt to destroy, in whole or in part, a national, ethnic, racial, or religious group. The equivalent of what we now call genocide has occurred throughout much of human history, but the term was not coined until Raphael Lemkin applied it to the Nazi occupation of Poland and subsequently to the Holocaust.

The word *genocide* is a modern term for an ancient practice. It was first coined by a Polish jurist, Raphael Lemkin, who sought to describe the Nazi occupation of Poland as one designed to eliminate Polish identity. Lemkin's initial work is sometimes erroneously linked to the Holocaust. Nevertheless, it was the Holocaust and its aftermath in the post-war United Nations that led to the formulation of the 1948 United Nations Convention on the Prevention and Punishment of the Crime of Genocide, which remains the principal accepted definition of the practice. Article II of the convention (Chalk and Joassohn 1990, 44–49) defines genocide as follows:

In the present Convention, genocide means any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such:

- (a) Killing members of the group;
- (b) Causing serious bodily or mental harm to members of the group;
- (c) Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part;
- (d) Imposing measures intended to prevent births within the group;
- (e) Forcibly transferring the children of the group to another group.

While this formulation is not without some controversy, it is plain that massacre, a practice most commonly associated with genocide, is only one aspect of its perpetration. This is because genocide is essentially a crime of identity: Its objective is to eliminate some form of cultural identifier rather than, necessarily, to slaughter those who identify with it. Historically, however, the most direct means of achieving a genocidal objective has been mass murder, although other, more indirect means have also had currency throughout history. Moreover, one controversial aspect of the convention is its omission of political groups. This reflects its origin as a document negotiated in the senior echelons of the United Nations, and has led some scholars to seek to supplement the term genocide with further terms, including “politicide” (Harff and Gurr 1988, 359–371) and “demicide” (Rummel 1994).

It is worth noting that the disappearance of any culture, or cultural group, is not in itself necessarily evidence of genocide. In world-historical terms, cultures have their own lives. The processes of decay, decline, and assimilation are often unforced, driven by voluntary cultural shifts in response to the realities of social and linguistic hegemonies. Over centuries, for example, the dominant Zoroastrian faith of Iran has given way to Shia Islam; languages like Oscan, Lycian, Coptic, Sogdian, and Breton gave way to Latin, Greek, Arabic, Pathan, and French.

As a comprehensive phenomenon, genocide is more modern than it is ancient. Cultures like the Assyrians and Hebrews talked genocide in the ancient world, but lacked the technology to achieve it. The Book of Joshua makes claims about the utter destruction of the peoples of pre-Hebrew Palestine which cannot

be borne out archaeologically. In the same way, the Annals of the Assyrian kings make extravagant claims about the utter annihilation of peoples who were not, actually, annihilated. The ancient Greeks, with the more limited objective of the elimination of rival city-states, were more successful, inventing the practice of *andrapodismos*: the slaughter of the adult males of a city and enslavement of the remainder. This was visited by the Crotonians against the Sybarites; the Athenians upon the Melians and Scionians; the Thebans upon the Plataeans; and Alexander's Macedonians upon the Thebans. The Romans inherited this practice, killing and enslaving all of the Carthaginians and sowing their fields with salt (Leadbetter 1999, 272–274).

These massacres remain the exception rather than the rule in antiquity. There were social identifiers for ancient people, as for modern, which invited genocidal intent. What prevented a wider and more savage manifestation of genocide was the lack of requisite technology to carry out such acts. The principal identifiers that have emerged over time are religion; imperial identity; nationalism; political identity; and ethnicity, sometimes nuanced as race.

Genocide and Religion

Religious conflict has been common in world history. From time to time, these conflicts have been genocidal, particularly with the emergent dominance of exclusivist monotheistic religions in the Middle East and Mediterranean from the fourth century CE onwards. Traditional polytheistic religion was, nevertheless, not immune from the genocidal impulse, principally because it was embedded in the ideological structures of the state. In the third century, for example, the Roman state made a systematic attempt to eliminate the Christians and Manichaeans, who threatened the religious foundations of imperial ideology. Likewise, in the eleventh century the Hindu king of Pandya in India sought to eliminate the Jains, impaling over eight thousand of them.

While such instances of genocidal practice are linked to traditional pagan and polytheistic religions, a significant impetus for genocidal violence also came with the emergence of Christianity as a hegemonic religion in Europe. This violence initially focused on the emergent Islamic communities of the Middle East. The crusading movement, in particular, was principally directed at the Muslim communities of the Levant. While this aspect of the crusading movement failed to eliminate Islam in Palestine, other crusades had more murderous success. The most notable of these was the crusade against the Albigensians, or Cathars, a Manichaean community centered in the Languedoc region of southern France. This crusade took the form of a series of military campaigns conducted between 1208 and 1226, which were marked by atrocity and indiscriminate massacre, notably the massacre of the entire population of Béziers in 1209. Even after the conclusion of military hostilities, the Inquisition continued the work of eliminating Albigensianism.

The Inquisition, founded largely as a consequence of the emergence of Catharism, was the principal genocidal agency in Europe until the Reformation. It hunted Hussites, witches, Waldensians, and, from time to time, Jews. The Reformation entrenched religious diversity in Europe, but genocidal massacres still occurred from time to time, most notably the St. Bartholomew's Day massacre of French Protestants (Huguenots) in 1572. Christians could be victims too. The Jesuit missionaries based in Japan were expelled in the early seventeenth century and Japanese Christian converts were tortured and killed, with the result that Christianity was eliminated from Japan until the Meiji period.

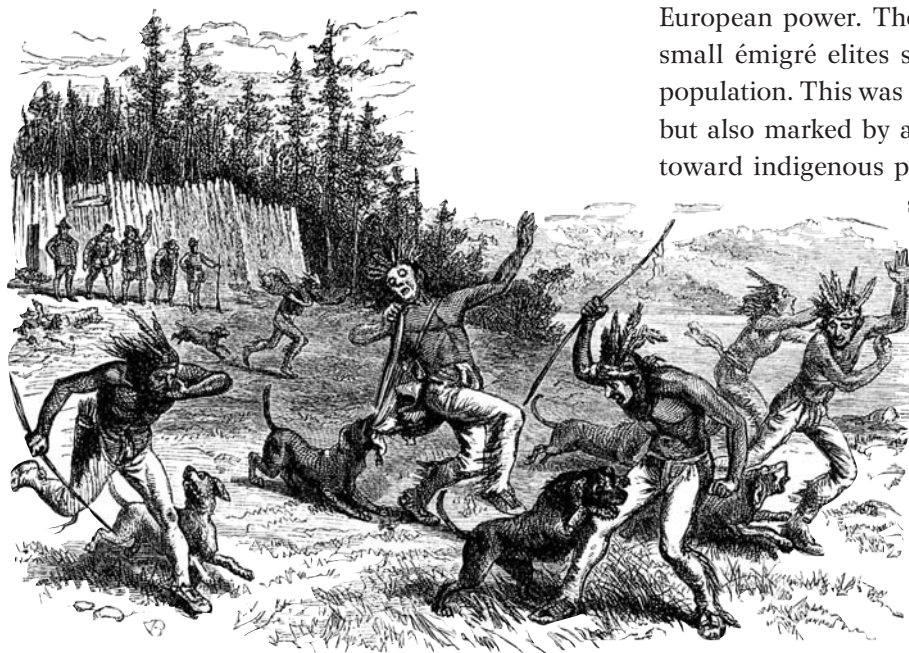
More recently, the emergence of an intolerant version of political Islam has seen eliminationist assaults on the Baha'i community of Iran. Almost inevitably, genocide on religious lines is associated with the use of religious language by political authorities. This reflects the fact that genocide is a crime almost exclusively committed by those who have political power to use violent means over those who do not.

Throughout history, it has been the inaction of those who could have acted; the indifference of those who should have known better; the silence of the voice of justice when it mattered most; that has made it possible for evil to triumph. • Haile Selassie (1892–1975)

Genocide and the Imperial State

Genocidal practice has been inherent to imperial powers from the earliest times. While most empires have been consciously multicultural, they are all established and maintained by violence, a class of which is designed to eliminate particularly recalcitrant opponents in order both to prevent further resistance and also to terrorize the remainder into acquiescence. The Persians destroyed Miletus during the Ionian Revolts; Alexander obliterated the city of Plataea; the Romans targeted and sought to eliminate the Druids; in the fourteenth century Timur (Tamerlane) established an empire across Eurasia based upon the terror inspired by genocide. In his campaigns in India, he slew all of the inhabitants of Batnir and Meerut, marking his progress with vast pyramids of heads. He marked his 1399 capture of Delhi with four of these, at each corner of the city. He punished the rebellion of Isfahan in 1387 by massacre, and a tower of seventy thousand skulls was piled up. Genocidal massacres were also employed in his capture, variously, of Baghdad, Damascus, and Tiflis (Katz 1994, 94).

The impact of the imperial encounter between the Old World and the New was immediately genocidal.



Some methods used by European colonizers to drive Native Americans from their land fit the modern definition of genocide. This drawing shows dogs set upon Native Americans in Maine in the 1600s.

In 1519, Hernán Cortés slaughtered or deported all of the inhabitants of the town of Cholula, and in 1521, he marked his recapture of the Aztec capital of Tenochtitlán by the massacre of its surviving inhabitants, in the course of which an estimated 100,000 people were slain (Churchill 1997, 98). The muskets and cannon of the conquistadors were accompanied by the smallpox pathogen. While there is some (relatively late) evidence of the deliberate infection of indigenous people with smallpox in North America, such an act was largely unnecessary. Smallpox, typhus, and other imported diseases wrought havoc among the indigenous peoples, leading within a few decades to unsustainable population levels (Stannard 1992, 102–112; Churchill 1997, 129–157). In respect to the European discovery of the New World, particularly the confrontation with its indigenous peoples, it has been argued that “the sixteenth century perpetrated the greatest genocide in human history” (Todorov 1984, 5).

Colonial Empires

The establishment of the New World empires of Spain, Portugal, France, and Great Britain marked a major expansion—indeed a globalization—of European power. They are also a clear instance of small émigré elites subjugating a vast indigenous population. This was a process facilitated by disease, but also marked by an especially ruthless brutality toward indigenous peoples which can only be described as genocidal. There was resistance, but the strength of native arms was sapped

by disease and thwarted by technology. Arrows and spears might match muskets, cannon, and rifles in occasional skirmishes, but they could not win the long wars of attrition waged in North and South America, and in Australia, by colonial occupiers. Many of these policies have persisted until relatively recently. In Australia and elsewhere, the genocidal practices which marked the frontier conflict between indigenous people and British colonists resulted in massacres and campaigns of extermination. These were succeeded, during the course of the twentieth century, by a more subtle policy of marginalization and the forced removal of children to “breed out the color.” This policy even persisted after 1967, when indigenous Australians were granted full citizenship rights, and was the subject of a major investigation in Australia in the 1990s (Tatz 2003, 67–106).

In a similar way, the economic development of the Paraguayan countryside was accompanied, in the 1950s and 1960s, by the slaughter of indigenous Aché (or Guayaki) people. The Paraguayan government, charged with genocide in 1974, pleaded in its defense to the U.N. Human Rights Commission that no genocide had been committed since there had been no intent to eliminate the Guayaki as such, merely the pursuit of an economic objective, which had been hindered by people who happened to be Guayaki.

Colonial occupations in those instances were genocidal in nature principally because the occupying colonizers were also settlers. In other places, colonial empires took a different form, with minority colonizing elites dominating majority indigenous populations. In such places, the colonists’ principal interest lay in the economic exploitation of the colony and its peoples. In these circumstances, genocide is less likely to occur although, as Jean-Paul Sartre has argued (1968), the imbalance in the power relationship between the colonizer and the colonized is frequently maintained by the practice of genocidal massacre.

There were a number of spectacular examples of this in Africa during the colonial period. In the Belgian Congo, the quota system for the harvest of wild

rubber imposed upon the inhabitants by the personal administration of Leopold II was genocidal in impact rather than intent. The devastation it wrought upon the peoples of the region led, in 1907, to the Belgian Parliament humiliating their own monarch by the formal annexation of the Congo, thereby replacing Leopold’s authority with their own.

A clearer and more unambiguous case is the response of German authorities to the uprising among the Herero people of Namibia in 1904. Initially successful because of the group’s numerical superiority, the Herero rebellion soon faced a counterattack under the command of General Lothar von Trotha. The general so disposed his forces as to drive the Herero into the waterless Omaheke desert, within which they were contained until they perished of thirst and exposure. In 1903, there were eighty thousand Herero; a few years later, a scant fifteen thousand remained. This was a clear attempt at colonial pacification through genocide, and was followed up by a similar assault on the Nama people, of whom over half were slaughtered between 1907 and 1911.

Just as the process of colonization generated genocidal conflicts, so did decolonization. In many cases, colonial borders were drawn by the colonial powers without regard to the cultural and religious identifications of the subject populations. As these colonial boundaries have persisted beyond the colonial period, genocidal civil conflict has frequently been the result. In the Sudan, a bitter genocidal conflict between the Arab Muslim north and the Christian/animist Bantu south persisted for many decades, and was noted for an attempt by the north to subjugate the south by the imposition of permanent famine conditions. A similar state of affairs now prevails between ruling northerners and the peoples of Darfur in western Sudan.

Genocide and the Nation-State

The problem that decolonized regions face, and that has resulted in genocide, is the need for colonial territories to reinvent themselves as nations. The nation is the ideal form of post-Enlightenment state, created



in Europe to redefine polities that had been created by centuries of dynastic competition. The nation-state emerged after the Peace of Westphalia of 1648 and was affirmed by French Revolution, which first embodied and articulated a clear nationalist principle. Nations construct themselves through a matrix of linguistic, religious, and cultural identifiers.

Inherent Genocides

Sometimes those identifiers are inherent. The most obvious of these is heredity, or “race.” It was a particular concept of race used by the Nazis to construct their peculiar vision of Germany. They used it, more specifically, to seek to eliminate all Jews. The Holocaust has a particular standing in the history of genocide since the victims were defined biologically, and so could not thwart the Nazi perpetrators by conversion. It also meant that the perpetrators were compelled, by the logic of their own vision, to slaughter all of their victims. The most sophisticated technology (for its day) was employed: railways to transport the victims; gas chambers to kill them en masse. Alongside that, more rudimentary technologies were also employed: shooting; starvation; exhaustion; disease.

The Nazi vision of a biological utopia led them also to target groups other than Jews. Famously, they sought to slaughter all the Roma and Sinti (“Gypsies”) despite their Aryan origins. They also targeted Jehovah’s Witnesses, homosexuals, and (what Nazis thought of as) similar groups of adherence, although in these cases, it was possible to escape death through a denial of the relevant identity. Alongside these directed policies was also the genocidal policy adopted in Poland which led Raphael Lemkin initially to devise the term. The Nazis were ultimately responsible for the deaths of an estimated 5 to 6 million Jews, including 3 million Polish Jews; as many as 3 million Soviet prisoners of war; up to 2 million Christian and other (non-Jewish) Poles; somewhere between a quarter to 1.5 million Roma and Sinti (Gypsies); 200,000–300,000 people with disabilities; 100,000 Communists; 10,000–20,000 homosexuals; and up to 5,000 Jehovah’s Witnesses.

Nazi policies have rarely been imitated, although it is arguable that the ethnic identifiers used in the genocides in Burundi and, later, Rwanda, are of a similar type. The situations in these states are more or less identical to one another. Both are postcolonial states; both were occupied by the Germans, and then, as mandatory power, by the Belgians, who continued the German policy which privileged one ethnic group, the Tutsi, usually in a minority, at the expense of the other, the Hutu. This has resulted in a post-independence history of mutual massacre. Between 1972 and 1975, at least 100,000 Hutu were killed in Burundi by the (all-Tutsi) army; in 1994, approximately 1 million Tutsis were murdered in Rwanda by Hutu *Interahamwe* militias. The Rwandan genocide at least was a last-ditch attempt by Hutu hardliners to prevent the implementation of a compromise peace (the Arusha accords) reached with the Tutsi-dominated Rwandan Patriotic Front. Along with ethnic Tutsi, the victims included moderate Hutus, the Hutu president who had signed the accords, Juvenal Habyalimana, the prime minister, Agathe Uwilingiyimana, and other supporters of ethnic compromise.

Adherent Genocides

Nation-building can also result in what might be called adherent genocides. This occurs particularly in cases where the nation is aligned with a particular religious or ideological view. A prime example of this is the Terror during the French Revolution, when as many as twenty thousand people were executed because they either were, or identified with, members of the old French aristocracy. In the same way, the late Ottoman state, struggling to redefine itself as ethnically Turkish, and deeply mistrustful of the Christian Armenians straddling the Russian border, slaughtered over 1.5 million Armenians during the latter half of 1915. It was possible for Armenians to escape death, through conversion to Islam, and some accepted this road to survival, thus rendering this a genocide more based on adherent than inherent qualities.

The most notable case of adherent genocide is the Soviet Union under Stalin. Stalin routinely used

genocide as a tool of state control, attacking both social classes (kulaks) and ethnic groups (notably the Ukrainians and Tatars) through a combination of massacre, deportation, and enforced famine. There is no accurate estimate of the total number of Stalin's victims although it can reasonably be assumed that there were in excess of 30 million.

In the late 1970s, a peculiar case of adherent genocide occurred in Cambodia. There, a militant Stalinist regime led by Pol Pot, the Khmer Rouge, sought to reimagine the country as a series of peasant collectives. Any person not meeting the state's definition of a Cambodian peasant was liable to be slain: intellectuals (often perceived simply as people who wore spectacles), the Muslim Cham people, Buddhists, and all non-ethnic Cambodians. Over 1.5 million people were killed before the slaughter was brought to an end by the fall of the Khmer Rouge regime at the hands of the intervening Vietnamese.

Genocide Denial

One ongoing feature of the historiography of genocide is the unwillingness of many perpetrator states, or their successors, to accept the fact that genocide has occurred. The Turkish state, for example, has long denied the fact of the Armenian genocide, despite the mountain of evidence to the contrary. Neo-Nazis and various sympathizers deny the Holocaust, and colonial successor nations are frequently unwilling to acknowledge the more sordid deeds committed by their pioneers. It is both embarrassing at a time when new nations are seeking to construct more heroic foundation narratives, and it is legally problematic since it opens up the possibility of prosecutions, lawsuits, and compensation claims.

Genocide in the Future?

The 1990s were a particularly bloody decade. The breakup of the former federated republic of Yugoslavia resulted in a series of Balkan wars and two converted genocidal assaults, one on the Bosnian Muslims, the other on the Albanians of Kosovo. These, together

with the genocide of the Tutsis in Rwanda in 1994, resulted, first, in the creation of the U.N. War Crimes Tribunal for the Former Yugoslavia and Rwanda and, later, in the 1998 formation of an International Criminal Court for Genocide and Major Human Rights Violations. The latter formally came into operation in 2002; it provides the first international standing court through which both survivors and bystander communities can seek redress from perpetrators. As of 2010 it has 111 member countries, although China, India, Russia, and the United States have not joined.

The conditions that generate genocide still exist in states and parastate organizations (that is, liberation and paramilitary organizations), although a number of early warning systems are in place to try and detect potential genocides before they occur, and there is greater opportunity for judicial redress after the fact. Despite the fact that the Genocide Convention demands external intervention to prevent it, there must first be a willingness to recognize and name genocide wherever it occurs, and this is not always freely forthcoming.

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See also Holocaust; Human Rights; International Criminal Court; World War I; World War II

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Geographic Constructions of the World

In order to grapple with the complexities of global geography, it is necessary to construct abstract models of the world, ordering space into comprehensible frameworks. All intellectual traditions are marked by such geographic constructions. Through spatial categories, people divide their known worlds into regions that can be named and known in relationship to one another.

Typically, geographical constructions are based on an ethnocentric conception of space, focused on a particular group's homeland. In pre-modern times, most peoples placed their territories at the center of the world. For the ancient Greeks, the ritual center at Delphi formed the navel of the earth, whereas the Chinese literally regarded their country as the Middle Kingdom. Religious ideas and legacies of cultural borrowing, however, sometimes displaced the "center" into foreign lands. Medieval Europeans thus typically regarded Jerusalem as the global heartland, while the Japanese framed their islands as "eastern" due to the centrality accorded to China in the Confucian tradition and to India in Buddhist scriptures.

Ethnocentrism and Cosmology

Ethnocentrism has also molded the scales on which regional divisions have been constructed. Typically, a given society's own lands are subdivided into a fine mesh of distinctive regions, whereas vast expanses of terrain in more distant reaches are lumped together. A text from tenth-century Persia (*Hudud al-'Alam*), for example, divides the world into fifty-one units, nine

of which cover portions of present-day Iran, whereas one suffices for all of Europe north of Spain and west of Russia. In traditional South Asian global visions, China and Arabia were so marginal as to virtually disappear from view.

A second feature of most pre-modern geographic constructions was their cosmological orientation. Patterns of terrestrial order, in other words, were mapped onto those of the cosmos, as interpreted through religious or philosophical doctrines. Hindu and Buddhist conceptions of the world, for example, were ordered around the notion of a central "continent"—Jambudvipa—that was in turn surrounded by a series of concentric, ring-like oceans and landmasses. While Jambudvipa had features that could clearly be identified with real places, the outer continents existed largely as conceptual space. Medieval Europeans' constructions of place were similarly guided by religious ideology. Thus in the so-called T-O maps of the time, which literally showed a "T" figure inscribed within a circle, the Mediterranean Sea and the Nile and Don rivers form a central cross that structures the world, separating the three continents: Europe, Asia, and Africa. This Trinitarian division of the world (held to reflect the patrimony of Noah's three sons, Ham, Japhet, and Shem) was so deeply ingrained that the discovery of a fourth landmass, the Americas, resulted, according to Eviatar Zerubavel (1992), in "cosmological shock."

Constructions of the Classical and Islamic Worlds

Not all premodern systems of world geography were wedded to overtly religious doctrines. The



The *Ch'onha chido* (Atlas of the world) was the traditional Korean atlas produced in the early Choson dynasty (1392–1910).

constructions of classical Greek and Roman geographers, for example, were based more on geometrical and astronomical theorizing. Central to their conceptual schemes was the notion of *clima*, or latitudinal belts, distinguished from each other by differences in day length and sun angle. Different *clima* supposedly produced different kinds of human bodies, with corresponding customs and forms of government. Abstract theorizing often led classical geographers to imagine alter-worlds that were no less fanciful than the ring-like continents of Buddhism. To preserve the symmetry of the globe, for example, it was often thought that a large landmass, roughly equivalent to Europe, Asia, and Africa, had to exist in the southern hemisphere. This notion was not fully put to rest until the eighteenth century.

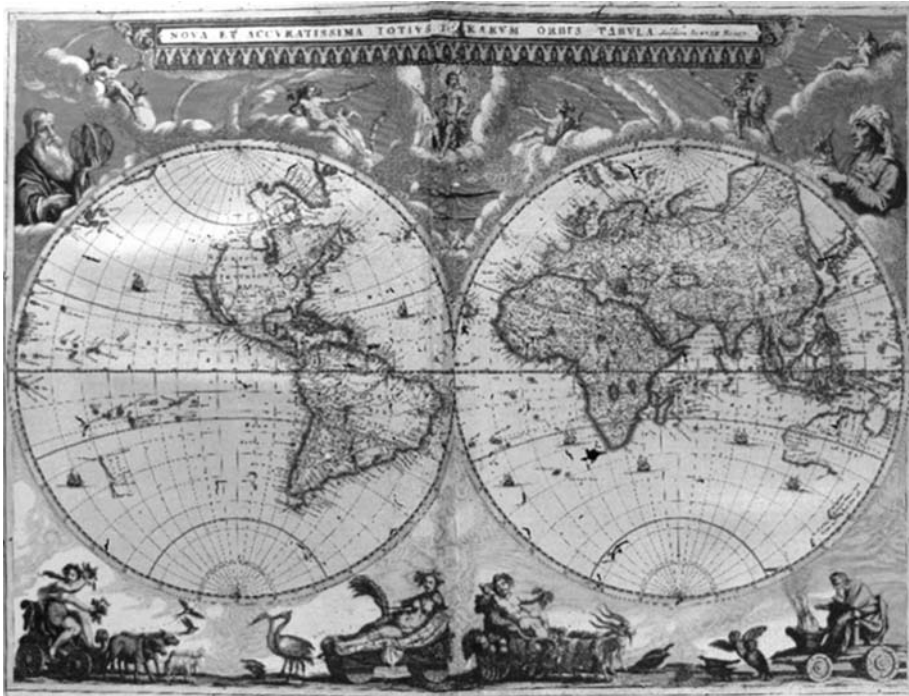
Traditional Islamic conceptions of the world relied heavily on classical Greek models, giving precedence to latitudinal belts. Muslim geographers, however, also mapped their historically embedded religious concepts across the face of the earth. Their main division contrasted an ideally expanding realm of submission to God (*dar al-Islam*), where peace would

theoretically prevail, with a realm of war (*dar al-harb*), where religious error and strife reigned.

Imposition and Evolution of the European System

In the last hundred years, traditional non-Western geographic constructions have been largely replaced by those of European origin. After the age of exploration, European knowledge of the world surpassed that of any other civilization, and as European power expanded, ideas of Western origin were forced on, or adopted by, peoples of other regions. The traditional Japanese three-country global model, based on the primacy of Japan, China, and India, for example, could no longer be maintained after Dutch atlases began to circulate in the early modern period. Yet while Western concepts of global geography by this period were informed by a much more complete map of the world, they continued to be based on constructed categories of spatial understanding.

The foundational construct of the Western system, for example, remained that of continental landmasses.



A mid-seventeenth-century “modern and completely correct map” of the entire world printed in Amsterdam by Joan Blaeu (1596–1673), a member of the family that helped to define mapmaking during the Dutch golden age.

The idea of continents goes back to ancient Greek navigators, who differentiated the lands found on either side of the Aegean and Black seas. Throughout the classical and medieval periods, the three known continents (Europe, Asia, and Africa) were conceptualized less as discrete landmasses than as connected portions of a singular world-island, the *orbis terrarum*. The discovery of the Americas forced a reconceptualization of global geography, as the “wheel of the Earth” came to be more cleanly divided into its original three parts, which, along with the Americas, now formed the “four quarters of the world.” Gradually, these “quarters” were reconceived as continents, which allowed the number of recognized major landmasses to increase. The Americas were eventually split in two, just as Australia and Antarctica were added to the continental roster, yielding the familiar sevenfold continental scheme.

The Continental Scheme

That Europe is still regarded as a continent shows both the manufactured nature of the scheme as well as the fact that it was devised by Europeans, who, not surprisingly, magnified the extent of their own homeland. In the original Greek formulation, Europe and Asia were considered separate landmasses because

they seemed to be all but sundered from each other by a series of seas and straits: the Aegean Sea, the Dardanelles, the Sea of Marmara, the Bosphorus, the Black Sea, the Straits of Kerch, and the Sea of Azov. The expansion of geographical knowledge eventually revealed that these two supposed continents were actually part of an undivided mass of land. Geographers thus competed during the eighteenth century to locate a suitable line of division. In due time, the Ural Mountains came to be accepted, even though this none-too-formidable range vanishes in the steppes of Kazakhstan. The separation of Europe from Asia thus violates the definitional basis of the continental idea, as continents are supposed to be more or less discrete masses of land largely separated from each other by bodies of water.

Even if Europe is classified merely as a segment of a Eurasian continent, as it occasionally is, the continental scheme remains an intellectual construction rather than an unproblematic reflection of the world’s underlying patterns of land and water. The actual building blocks of the earth’s surface, tectonic plates, fail to conform to the architecture of continents. In geological terms, India and Australia would have to be classified together, as both sit on the same plate. No consistent argument has ever been put forward, moreover, to support cataloging Australia as a small



continent rather than a large island—or Madagascar as a large island rather than a small continent.

Maritime Constructions

Oceans are no less capricious than continents. The supposedly separate oceans are interconnected by broad passages, as is clearly evident when one looks at a globe from the perspective of the South Pole. The boundaries between the oceans have been established by convention rather than discovered through empirical inquiry. In earlier periods, the maritime expanse had been conceptualized differently. During the eighteenth century, for example, European cartographers usually depicted “oceans” as arcs of water that wrapped around landmasses, potentially connecting distant lands. In Enlightenment-era atlases, an “Ethiopian Ocean” thus covered large expanses of what we now call the South Atlantic and southern Indian oceans, snaking around the contours of southern Africa.

From Continents to World Areas

Although the standard sevenfold continental scheme is still used in reference works, it has recently begun to lose favor in public discourse. Although the term *Asia* is still routinely employed, it now generally refers only to East, South, and Southeast Asia rather than to the formal continent. Both Southwest Asia (the Middle East) and North Asia (Siberia) have been, with little acknowledgment, excised from the Asian continent. Other continental labels are used with similar imprecision. “North America,” for example, sometimes refers to the United States and Canada, sometimes to those countries plus Mexico, sometimes to all three plus Central America, and sometimes to all of the areas mentioned above as well as the islands of the Caribbean.

Given these inadequacies, the continental scheme began to yield in the mid-twentieth century to a global architecture based on world areas. In the area studies framework, the fundamental geographical units are broad sub-continental blocks, ideally defined by shared cultural, political, or historical patterns. The

various world areas were constructed at different times and in accordance with different ideological or political designs. The term “Latin America,” for example, was put forward by French geographers during the period of Napoleon III, when France was seeking influence in the Western Hemisphere and wished to stress the commonalties of its Spanish-, Portuguese-, and French-speaking territories. The term was subsequently taken up by “Latin Americans” themselves, although it has never been without controversy.

The replacement of continents by world areas in the academic imagination was propelled by political events. During World War II, U.S. military planners concluded that the existing framework of global division was inadequate. As a result, the government commissioned an “ethnogeographical” board to remap the world. In the process, Asia was subdivided into East, South, and Southeast Asia, while Southwest Asia was appended to North Africa to form an expanded Middle East. Sub-Saharan Africa, the Soviet Union and its satellites, Western Europe, Latin America, North America, and Australia and the Pacific rounded out the roster of world regions. During the Cold War, the U.S. government funded area studies centers, while new area studies associations emerged to facilitate inquiry into regionally based cultural, social, and political formations. The newly minted world regional labels were sometimes taken up by political elites in the areas so designated. Southeast Asian leaders thus built ASEAN (the Association of Southeast Asian Nations), which they rigorously limited to the area that had recently been defined by Western scholars as “Southeast Asia.”

New Schemes of Geographic Construction

The end of the Cold War brought another round of geographical reconstruction. When the Soviet Union imploded, scholars were forced to grapple with the geographical positions of newly independent republics in the Baltic, Caucasasia, and Central Asia, as well as with those of former Soviet client states in Eastern Europe. At the same time, the entire area studies

A civilized nation can have no enemies, and one cannot draw a line across a map, a line that doesn't even exist in nature and say that the ugly enemy lives on the one side, and good friends live on the other. • Thor Heyerdahl

framework came under attack by scholars who objected to its rigid spatial divisions, its roots in Cold War geopolitics, or its general lack of theoretical rigor. By the turn of the millennium, many scholars were turning to an alternative form of global geographical construction based not on discrete regions but rather on webs of interaction, on the dispersed patterns of transnationalism, and on the widespread phenomenon of globalization.

Despite the rise of such non-bounded spatial concepts, alternative regionalization schemes at the global scale have retained salience. In the Cold War, a popular tripartite division of the globe, based on economic and geopolitical criteria, yielded the so-called First, Second, and Third Worlds. With the end of the Soviet Union, the Second World disappeared, undercutting the conceptual basis of that formula. While the First and Third Worlds linger in the public imagination, a more common gambit is to bifurcate the world into a wealthy “North” and an impoverished “South.” This construct, while polemically useful, is geographically imprecise, as certain countries in the southern half of the terrestrial landmass (Australia, Singapore, the United Arab Emirates, for example) are far more prosperous than some countries of the North (Albania, Ukraine, and Tajikistan, for example).

In short, while no single scheme of geographical construction is ever adequate for all purposes, most shed some light on the global order, whether of the past or the present.

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See also Cartography; Cultural Areas

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Geography

The term *Geography* formally applies to an academic discipline (and a human construct) that encompasses study of the Earth's surface (Physical Geography), its inhabitants (Human Geography), and, more recently, its environment (Environmental Geography). Geographic data collected points to the "connectedness" of world systems, however, formulated in a unitary discipline to study the whole planet and all its denizens.

The Irish philosopher and theologian George Berkeley (1685–1753) laid out the notion of *subjective idealism*, in which the material world exists only through human perceptions. Many other Western writers have contested this notion, arguing that the external world had its own reality and that if humans ceased to exist then that world would still be there. In many ways the term *geography* as used in popular parlance and in academia still reflects that dichotomy.

Yet the English word *geography* (and its equivalent in many Western languages) is a critical reminder of humanity's place in the cosmos. There is *geography* (lower case) as understood popularly, meaning the way in which the world is laid out: "the geography of Latin America" or the "geography of cities in South Asia." (The term is still sometimes confused with the physical geography of a denoted area, but that usage is declining.) As well, there is *Geography* (upper case), an academic discipline that tries to describe and explain the phenomena of the surface of the Earth. If only the largely "natural" world of earth, air, and water is investigated, then there is *Physical Geography*, and if the human species is involved then,

unsurprisingly, there is *Human Geography*. Since the nineteenth century *Geography* has undertaken to interface both the physical and the human, and, since the late 1980s, the increasing public profile of "the environment" has brought forth studies labeled *Environmental Geography*.

Showing the World

How might it be possible to characterize the planet's geography without resorting to the kind of pixel-by-pixel count of different surface elements now made possible by computers and satellites? The statistics of land and sea cover deal with the immutable (continuous water bodies cover about 74 per cent of the surface) and the changeable, such as the cropland area at about 13.8 per cent, which had been close to zero only 10,000 years ago. The changes in land cover over time and space conform to a general model in which natural ecosystems are replaced with small-scale agriculture, then intensive agriculture, and finally urban-industrial zones. Throughout there have been attempts to protect some of the ecosystems as parks and reserves. One scientific way of describing this mosaic is to measure the ratio of solar-based energy flow to the energy flow directed by the human inhabitants. This ratio has shifted markedly in the last fifty years, with energy largely derived from oil being applied to the more intensive use of the Earth's surface and other resources. Thus more land was converted to crop production in the period from 1950 to 1980 than in the 150 years between 1700 and 1850. About 35 per cent of mangroves were lost, while water withdrawals from rivers and lakes doubled in the forty years between 1960 and 2000. Perhaps

10–30 per cent of mammal, bird, and amphibian species are threatened with extinction.

Can these data tell us anything more about the geography of the Earth? They certainly emphasize “connectedness.” Even if humans had never existed (or if they cease to exist, as no doubt one day they will) there are linkages and feedbacks that bring many processes into relationships with each other. Aerosols scattering just above the oceans metamorphose into cloud droplets that affect rainfall over adjacent continents; the temperature gradients of the South Pacific produce weather effects, and hence fires, over many parts of the Americas and Australia; a widespread cooling locks up water as ice, and therefore sea-level falls. In the most extreme interpretation of these ideas, James Lovelock (b. 1919) has proposed the Gaia hypothesis, that life created the global conditions for its perpetuation. But biological processes such as speciation have been essentially local, as have the amounts of recovery of land surface after glaciation or the sizes of landslides after earthquakes. There seems to be a case for differentiating between geographies resulting from interactions that occur in many places but do not coalesce (worldwide), and those in which any change can eventually affect the whole planet—as through alterations in solar energy input or the gaseous composition of the atmosphere—which we may call truly global.

Time and Place

One way of describing the development of the world’s geography is thus to chronicle through time the tensions between local processes and those that have been global. The great glaciations of the Pleistocene period, between 2.5 million years ago and 9640 BCE, had global significance since all the climatic belts of the planet shifted southward. Yet within that envelope, the concatenation of different species meant the development of variable ecosystems in various places: the savannas of tropical Africa were not the same as those of Venezuela, for example. Interaction between human communities after 9000 BCE brought new genotypes as agriculture

enforced selective breeding in the light of cultural demands, and new ecosystems as earlier ecologies were modified by human actions. The scale of many such activities expanded with trade and exploration even before the advent of steam power reduced the effects of distance and weather upon human economies and politics.

One major change was of course the application of fossil fuels via an iron-based technology that replaced the whole suite of cultural, economic, and environmental changes from about 1750 CE to 1900 CE, a period often labeled the Industrial Revolution. There was indeed “something new under the sun,” as the historian John R. McNeill has put it. This too was the time when a truly global effect became unequivocally manifest, as the greenhouse gas levels of the upper atmosphere began to rise in concert with the combustion of fossil fuels, the reduction in biomass, and the spread of irrigated wetlands. Since about 1950 CE all the trends of the post-eighteenth-century era have intensified and the terms *globalization* and *global village* are commonplace, although not all these recent economic and cultural trends actually affect the upper atmosphere or the entire world ocean and so are more accurately described as *worldwide*. Microelectronics far outpaces Puck in girdling the Earth. (Puck, a mischievous fairy in Shakespeare’s *A Midsummer Night’s Dream*, could circle the globe in forty minutes.) The humanization of the globe is now at a point where many people are anxious about the possibilities of sudden, irreversible, and certainly unpredictable change in weather patterns, climatic shifts, sea-levels, drought and flood frequency, water, food and energy security, mass migration, and conflicts of many kinds.

Modeling the World

So what has the human construct *Geography* said about all this change? Geographers existed under that very name in the classical Mediterranean and in the same function in dynastic China. Their role was to catalogue the known world of the time—as an act of knowledge-gathering in Muslim Alexandria



in the six centuries after 600 BCE, for example, or as a list of potential tribute-payers to the emperors of the Middle Kingdom in the fifteenth century CE. The advent of European and Chinese ocean-going vessels (with the Portuguese caravel as the Boeing 737 of its time) expanded the geographers' chief role to one of providing directions, especially in the form of maps. As with the material world, the alterations of the nineteenth century were profound: in keeping with Euro-American imperialism, for example, Geography reverted to its earlier though much expanded role of cataloguing the peoples, produce, travel routes, and religious-conversion potential of colonies, might-be colonies, and other dominions. At one spatial scale there might be list after list of the products of the factories of the Ruhr or of New England, at another an assessment of the geopolitical consequences of the Russian colonization of Siberia.

In academic Geography it was largely assumed that to name something was to capture its essence objectively, that to give it a number improved that objectivity, and that models based on analogies with studies in physics or derived from the theories of classical economics would explain patterns of distribution of human-made phenomena; for the nonhuman the explanatory methodologies of the appropriate sciences would be sufficient. The 1970s saw a considerable change with the injection of philosophical idealism. It was realized that the positioning of the human subject was vital. As agents, humans did not necessarily act as the rational players envisaged by classical economics; as investigators, geographers were not free from biases of upbringing, sources of finance, institutional pressures, gender prejudices and plain old orneriness. This led to the so-called cultural turn, in which the whole gamut of human culture might be called into play in order to discuss a geographical distribution or process. A factory might apparently be located at X because of the availability of low-cost transport, but in fact its proximity to several attractive golf courses tickled the fancy of the Japanese CEO. The insertion of theory was given another boost by poststructuralist philosophers such as Michel Foucault (1926–1984) in constructing archaeologies of ways of thinking and

writing about the world. They raised the question of sources of authority, a debate now overtaken by the prominence of the small screen of TV and computers as the crucial shaper of beliefs.

Given that Geography has dealt with both the human and nonhuman components of the planet, we might expect its practitioners to have been leading authorities in the waves of environmental concern that were present in the 1970s (the ecological crisis) and exist again now with climatic change at the forefront. That has largely not been the case. Like many other disciplines, Geography has had its specialists in that area, but has never taken to it in a grand manner. Indeed, for some it has usually been about “development,” and any reorientation towards a worldview constrained by limits of all kinds (including that of human numbers) has been resisted. Since the year 2000, outgrowths of its diversity have included two markedly different approaches. The first is the highly instrumental use of GPS (global positioning system) and GIS (geographic information system). The ability to locate any point within a few centimeters has spawned a whole set of geo-related industries concerned with resource use, planning, environmental inventory, and spatial imagination. The second growth is almost diametrically opposite: the personal construction of an interior world from a fragmentary outer cosmos seems to have been pioneered by the literary figure W. G. Sebald (1944–2001) and has been carried on (in the United Kingdom, at least) by people who have attracted the label “psychogeographers.” One of them has imitated Sebald’s journey down the coast of East Anglia with a foot patrol of London’s circumferential M25 motorway.

There is a world out there and there are models of that world in our heads and in our media. In a mirror-like fashion, Western thought has often relied on dualities. The idea that humans are totally exceptional has created gaps between human societies and valuation of the rest of the cosmos as a mere theatre for their actions. But global linkages show us that is not the case: we are “all netted together,” as Charles Darwin wrote in a notebook of 1838. The divergences in Geography suggest that there is still

some way to go in formulating a unitary discipline of the whole of the planet and all its denizens.

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See also Anthropocene; Anthroposphere; Biological Exchanges; Gaia Theory; Geographical Constructs of the World

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German Empire

From about 1884 to 1919, the German Empire colonized areas in Africa (mostly) and Oceania. Although historians comparing Germany's colonial policies have recognized origins of Nazi ideology in use in Africa, recent studies approach such generalizations with caution. Germany's paternalist rule incorporated indigenous legal systems, provided security and stability, and sponsored anthropological studies that still figure as important reference works today.

Any discussion of the impact of the German Empire on world history has to begin with an apparent paradox: despite its short duration, approximately from 1884 to 1919, the German Empire has received historical attention that parallels that given other European empires whose colonial possessions were larger and longer lasting.

Chronology of Empire

In a narrow chronological sense, German colonialism can be divided into four phases: 1884–1890, 1890–1906, 1906–1914, and 1914–1919. In 1884 the German government, under Chancellor Otto von Bismarck, annexed areas in Africa and the Pacific Ocean. Bismarck was a reluctant colonialist who attempted to place the estimated high administrative costs of these colonies on a number of chartered companies. The majority of these attempts, however, failed. Eventually German authorities assumed administrative duties in the colonies. Increasing governmental involvement in colonial affairs led to the establishment of the Colonial Division within the German Foreign Office by

1890, which marks the beginning of the second phase of German colonialism. Four years later this division gained more independence through the appointment of a colonial director. Despite this appointment, the Colonial Division remained the stepchild of German foreign policy because few German civil servants desired colonial appointments. The prestige of the Colonial Division suffered further in the selection of its directors. Chosen less for their colonial expertise than for their loyalty to the Imperial Court, the directors had a high turnover rate and provided little stability for the division.

Violent indigenous uprisings in the German colonies of East Africa and Southwest Africa between 1904 and 1907 brought the colonies to broad public attention. Several hundred German settlers lost their lives, and thousands of German soldiers found themselves dispatched to the colonies in an attempt to regain control. Increasing violence and expenditures made the German colonial endeavor a favored target of the German Parliament (Reichstag). When, in late 1906, Chancellor Bernhard von Bülow requested further appropriations for the African colonies, a majority of delegates rejected his request. Disappointed, Bülow dissolved the Reichstag and called for a new election. The press deemed the elections “Hottentot elections” (Hottentot was a rather derogatory name for the Herero Nama population of German South Africa) due to the colonial connotations. Bülow's broad coalition ultimately emerged from the election victorious to put forward a detailed program of colonial reform. This program involved the creation of an independent Colonial Office led by a secretary of state, improvement of colonial civil servant



Under the leadership of the first German emperor, Kaiser Wilhelm I (1797–1888), and with the aid of Otto von Bismarck, Germany was poised to expand its empire.

education, and economic self-sufficiency in the colonies. Bühlow's choice for colonial secretary of state was Bernard Dernburg, a prominent banker.

The so-called Dernburg era ushered in the third phase of German colonialism, which stood under the rubric of "scientific colonialism." In classical fashion Dernburg envisioned using colonial resources for metropolitan development. At the same time he sought to improve the lives of Africans and Pacific Islanders through the benefits of "higher" German civilization. In practice this meant improving infrastructure, especially railways for the African colonies, and increasing German economic investments. Dernburg's program also invited establishment of colonial schools designed to train colonial civil servants (the most important of these schools was the Colonial Institute in Hamburg) and scientific stations throughout the colonies to further economic development. When Dernburg stepped down from his office in 1910, his two successors, Friedrich von Lindequist (1910–1911) and Wilhelm Solf (1911–1918), continued his program.

The fourth and last phase started with the outbreak of World War I. This war prevented any long-term success of Dernburg's program, however, and ended German colonialism. Blockaded by the British Royal Navy, the German government was unable to assist its colonies. Nor did Germany ever intend its colonies to become a major battleground. Colonial troops, aptly called Protective Forces (*Schutztruppen*), existed only on the African continent. Hastily assembled settler militia and indigenous police forces proved no match for Australian, Japanese, and New Zealand contingents who occupied the German Pacific colonies by the end of 1914. In Africa the fighting continued beyond that time, although Togo, the smallest of the German African colonies, surrendered after only three weeks. By 1915 German Protective Forces surrendered to South African troops in southwest Africa. A year later fighting ceased in Cameroon. After 1916 only East Africa remained at war. Here a small, unintentionally racially integrated, rag-tag army continued a guerrilla campaign against a combined force of Belgian, British, and Portuguese soldiers until the end of the war. The leader of the East Africa campaign, Lieutenant-Colonel Paul von Lettow-Vorbeck, returned to Germany to a hero's welcome and was highly decorated for preventing the deployment of Allied troops to the western front in Europe. His loyal colonial *Askaries* (designation for indigenous soldiers or policemen in German East Africa) fared much worse because the government withheld soldiers' wages until the 1960s. The Treaty of Versailles in 1919 sealed the fate of German colonialism because all the German colonies became mandates under the newly formed League of Nations.

Comparative Geography of the Empire

With the exception of a small 643-square-kilometer enclave on the Chinese mainland administered by imperial naval authorities, most of Germany's colonies were located in Africa and Oceania (islands of the central and south Pacific). Most of these colonies, including Cameroon, East Africa (today's Tanzania),



The Reichstag building, home of the German Empire's parliament from 1894 to 1933.

Southwest Africa (today's Namibia), and Togo, were located in Africa. In Oceania the German Empire made up the second-largest colonial presence, after Great Britain. Germany occupied the northeastern corner of New Guinea, which is today part of Papua New Guinea, and the surrounding Bismarck Archipelago, as well as the northern Solomon Islands. Most annexations were made after the year 1884, with only a fraction of annexations—Micronesia and the western isles of Samoa in Oceania, as well as a small increase of existing colonies in Africa—made during the so-called New Course policy that followed Bismarck's dismissal. All in all, Germany's colonies contributed little to its economy. Investments in the colonies rarely accounted for more than 1 percent of German overseas trade, mainly because the colonies were deficient in resources. Southwest Africa provided some copper and diamonds after 1906, but the bulk of the economy remained tropical agriculture. Agricultural products could be quite diversified

in Africa, including such products as cotton, rubber, and even ostrich feathers. In the Pacific, on the other hand, agriculture was closely tied to coconut plantations.

The differences in resource exploitation aside, historians recently proposed a closer understanding of variations in the German administration in Africa and the Pacific Islands. Frequent military campaigning and crackdowns on indigenous people were the norm in Africa and commanded considerable attention in the national and international media. Most telling of German administrative abuses are the operations against the Herero and Nama people in Southwest Africa (1904–1907) and the Maji-Maji rebellion in East Africa (1905–1907). Southwest Africa was Germany's lone settlement colony (the German presence in the other colonies never surpassed a few hundred settlers) in the empire and attracted several thousand ranchers. Already strained relationships with the cattle-herding Herero further deteriorated when



an introduced plague decimated the herds. German authorities used herd reductions as a welcomed excuse for further land alienation. When open warfare erupted by 1904, German Protective Forces brutally crushed the Herero. Lieutenant General Lothar von Trotha issued the famed extermination decree, ordering his troops to fire upon every Herero, regardless of age or gender, who chose not flee to the desert. Although Berlin officials soon deemed Trotha's policy excessive, it proved frighteningly effective. By 1907 the Herero population had been reduced by 75 percent. When the Nama, traditionally enemies of the Herero, rose up against the German overlords, they fared little better; their numbers were reduced by 50 percent.

For comparative purposes the German policies of extermination in Africa were in contrast to German administration of the Pacific Islands. Traditionally historians recognize in the German African colonial policy the origins of Nazi expansionism and extermination. Recent studies, however, are cautious about such generalizations. Violence and abuses did occur in the Pacific, but they were the exception rather than the rule. Indeed, the relative remoteness of the Pacific colonies allowed for a number of administrative experiments. Governors ruled for unusually long periods in German New Guinea and Samoa, thus providing stability and continuity. Their paternalist rule incorporated indigenous language and legal patterns. They also encouraged anthropological studies in the Bismarck Archipelago, Micronesia, and Samoa, which sparked ethnographic (cultural study) monographs that still figure as important reference works today.

Contemporary Studies in German Colonialism

Traditionally studies of German colonialism have emphasized diplomatic history. Brisk attempts to gain a colonial "place in the sun" for Germany are frequently cited as one of the main conflicts leading to World War I. The best-studied examples of such conflicts are the two Morocco crises (1905 and 1911) in Africa

and the tangle over the Samoan Islands in the Pacific (1889–1899). The Samoa conflict would ultimately result in a partition of the Islands, the western isles became the protectorate of German Samoa.

The German Empire has gained importance among scholars in the postcolonial realm. Although "Orientalist" scholars—who believe in the existence of a clear link between scholarship and colonialism—argue that the German Empire did not last long enough for German writers to develop a clear link between scholarship and colonial administration, recent investigations have indicated otherwise. Literary scholars argue that an absence of colonies did not prevent Germans from developing "colonial fantasies" that formed templates for future colonial rule. In essence, such "colonialism without colonies" placed Germany on an expansive path similar to that of other European powers.

Equally revealing are contemporary studies of the development of German anthropology during the imperial age. Shunning simple-minded explanations that anthropology and colonialism went hand in glove, these studies reveal the Germans' intense interest in non-European peoples. Many German anthropologists perceived artifacts as important historical sources of information about so-called non-literate peoples of the world. These intellectuals argued for storage of these artifacts in museums specifically designed for this purpose. Consequently, German anthropological museums developed into premier institutions in the world. Their holdings surpassed those of similar museums in England and France, both countries with far greater colonial empires. Similarly, Germans developed a popular interest in *Völkerschauen* (commercial ethnographic exhibitions) that brought the empire home to the public. In short, despite its brevity, recent studies have rediscovered and reassessed the German Empire. Far from being marginal, German colonialism in Africa and the Pacific has important implications for world historians.

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See also World War I

People never lie so much as after a hunt, during a war, or before an election. • **Otto Von Bismarck (1815–1898)**

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Glass

Glass made from melted sand was produced in ancient Egypt but long remained scarce and unusual. Over time hotter fires made glass manufacture easier, and as it became cheaper and more abundant glass started to change human life profoundly: blowpipes shaped hollow vessels and other containers; flat window panes made houses warmer and better lighted; and ground-glass lenses for telescopes and microscopes enlarged the known world enormously.

Natural glass in the form of obsidian—a hard, sharp-edged natural glass formed from rapidly cooled volcanic lava—was a key material for the human tool kit as a source of sharp blades for knives and spear and arrow points. It was also an important prehistoric trade item in the Mediterranean basin, Europe, Mexico, North America, and Oceania. Anatolia was a key source of obsidian for Mesopotamia beginning about 8000 BCE.

Development of Human-Produced Glass

Human-produced glass in the form of glass beads was probably first made in Egypt and Mesopotamia in about 3500 BCE. Hollow glass technology, which produces functional vessels, dates to about 1700 BCE in Mesopotamia and Egypt, and glass was beginning to be produced in northern Europe, Greece, and China at about this time as well. Glassblowing, a far more efficient method for producing vessels, was developed in the Babylon region around the time of the BCE/CE transition.

The Romans were the first major exploiters of and innovators in glassmaking technology. They used molds for blown glass, developed flat glass suitable for windows, and spread the use of glass throughout the empire and beyond. Much wider use of glass for windows followed refinements in production techniques by the Germans in the eleventh century and by the Venetians in the thirteenth century—techniques that led to higher quality and more attractive sheet glass. Mirrors came into widespread use in the eighteenth century following innovations in France in 1688.

Glass became a major industrial product during the industrial revolution when scientific research produced high quality optical glass and mass production methods. These refinements continued in the twentieth century with glass products becoming cheap, household goods.

Uses of Glass

The role of glass in world history is perhaps best understood as but one example of a common pattern in world history in which the generation of new knowledge leads to significant innovations and the embedding of a richer understanding in new or improved objects. These objects, which anthropologists call material culture, if they are useful, in demand and relatively easy to produce, are often disseminated in huge quantities. These objects then change the conditions of life and may well feed back into the possibilities of further exploration and innovation. This can happen in two ways: (1) by generating the wealth that enables more effort to be applied to the generation of new knowledge; or (2) by providing better tools for



Roman antique glass. Romans, the first major innovators in glassmaking technology, used molds for blown glass. Library of Congress.

improved understanding. This pattern of innovation and change has occurred in many spheres of life. The pattern is enduring when objects are widely disseminated and it can be a cumulative process.

There have been five major uses of glass around the world over the course of history, and only a few were universal before 1850. Glass has long been used for decorative purposes in the forms of glass beads, counters, toys, and jewelry in many cultures across Eurasia. For this purpose, glass blowing is not absolutely required, nor does this use have much influence on thought or society, but rather on luxury goods and aesthetics. Basically glass is a substitute for precious stones.

Another common use is for vessels, vases, and other containers. Before 1850 this use was largely restricted to the western end of Eurasia. Glass was little used for vessels in India, China, and Japan, where pottery was the primary medium. In the Islamic world and Russia, the use of glass declined dramatically from about the fourteenth century with the Mongol incursions. The great developers of glass for vessels were on the Italian peninsula, first the Romans, and later the Venetians.

A third major use of glass was and is for windows. Until the late nineteenth century, window glass was found only at the western end of Eurasia. Before that time, China, Japan, and India hardly made use of glass for windows, using bamboo and paper shades instead. The most dramatic development of window glass was even more limited, taking place mainly in Europe north of the Alps.

The fourth major use comes from the reflective capacity of glass when silvered. The development of glass mirrors covered the whole of western Europe,

but largely excluded the Islamic world. Glass mirrors were less popular in India, China and Japan.

The final major use of glass is for lenses and prisms and in particular their application to human sight in the form of eyeglasses. The concept of the light-bending and magnifying properties of glass was probably known to all Eurasian cultures, and was certainly known to the Chinese by at least the twelfth century. Yet only in western Europe did the practice of making lenses really develop, mainly from the thirteenth century. This coincides precisely with the dramatic new developments in optics and mathematics, which fed into all branches of knowledge, including architecture and painting.

Glass in World History

The reasons for the differential development of glass across the globe are largely accidental—differences in climate, drinking habits, availability of pottery, political events, and many other localized situations. The reasons have little to do with intention, planning, or individual psychology, nor are they the result of superior intellect or superior resources. Glass did not directly cause deepening of knowledge in Renaissance Europe and during the scientific revolution of the seventeenth and eighteenth centuries, but it did contribute to these movements by providing new scientific instruments such as microscopes, telescopes, barometers, thermometers, vacuum flasks, and many others. At a deeper level it literally opened people's eyes and minds to new possibilities and turned the Western world from the aural to the visual mode of interpreting experience. The collapse of glass manufacturing in the Islamic world and its minor role in

India, Japan, and China made the type of knowledge revolution that occurred in Western Europe impossible in those places.

Without glass instruments, such sciences as histology, pathology, protozoology, bacteriology, molecular biology, astronomy, physics, mineralogy, engineering, paleontology, vulcanology, and geology could not have developed. Without clear glass there would have been no laws about gases, no steam engine, no internal combustion engine, no electricity, no light bulbs, no cameras, and no television. Without clear glass, scientists could not have seen bacteria, and there would have been little understanding of infectious diseases.

Chemistry also depends heavily on glass instruments. For example, without glass there would have been no understanding of nitrogen and so no artificial nitrogenous fertilizers. Consequently, much of the agricultural advances of the nineteenth century would not have occurred without glass. As for astronomy, there would have been no way of demonstrating the structure of the solar system, no measurement of stellar parallax, no way of substantiating the conjectures of Copernicus and Galileo. These findings initiated a line of inquiry that, through the application of glass instruments, has revolutionized the understanding of the universe and deep space. And in biology, without glass we would have no understanding of cell division (or of cells), no detailed understanding of genetics, and certainly no discovery of DNA. Without eyeglasses, a majority of the population in the Western world over the age of fifty would not be able to read this article.

The role of glass in history goes far beyond science. Without mirrors, lenses, and panes of glass the artistic developments of the Renaissance would not have occurred. The new understanding of the laws of optics, along with the new accuracy and precision in painting were largely dependent on glass instruments of various kinds. The divergence of world art systems in the period between 1350 and 1500 is impossible to conceive of without the development of fine glass, which only occurred at that time in Venice.



A stained-glass window depicting St. Francis of Assisi. Photo by Chris Howell, 2003.

Glass is not just a tool to aid in understanding the world, but also a tool to enhance comfort, efficiency, and health. Glass lets light into interiors and is a hard and cleanable surface. This was one of its attractions to the fastidious Romans as a raw material for vessels, and likewise for the Dutch—in whose country the use of glass developed most. Transparent glass lets in light so house dirt becomes more visible. The glass itself must be clean to be effective. So glass, both from its nature and the effects it has, makes hygiene easier to achieve. And, glass not only altered the private house, but in due course transformed shops, which began to arrange their merchandise behind glass windows.

Glass also helped transform agriculture and knowledge about plants. The use of glass in horticulture was not an invention of the early modern Europeans. The Romans had used forcing houses and protected their grapes with glass. This Roman idea was revived in the later Middle Ages, when glass pavilions for growing flowers and later fruit and vegetables began to appear. As glass became cheaper and flat window glass improved in quality, greenhouses improved the cultivation of fruit and vegetables, bringing a healthier diet to the population. In the nineteenth century, glass containers made it possible for seeds and plants to be carried safely on long sea journeys from all over the world to add variety to European farms and gardens.



Mounds of glassware stacked precariously, are ready for sale in the weekly Athens street-market. Photo by Karen Christensen.

Among other innovations that altered daily life were storm-proof lanterns, enclosed coaches, lighthouses, and street lighting. Thus travel and navigation were safer and easier. The sextant requires glass and the precision chronometer cannot be used at sea without glass. Glass bottles created a revolution in drinking habits by allowing wine and beers to be more easily stored and transported. Glass even affected what humans believed (stained glass) and how they perceived themselves (mirrors).

Thus, at first through drinking vessels and windows, then through lanterns, lighthouses, greenhouses, telescopes, and microscopes, and later through cameras, televisions, and computer screens, the modern world built round glass emerged.

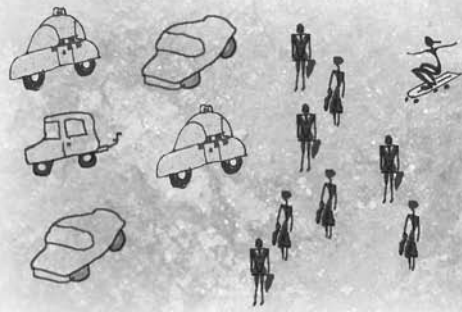
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See also Scientific Instruments

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Global Commons

The term *global commons* refers to the Earth's natural resources that fall beyond the jurisdiction of any state, such as the oceans, the atmosphere, and outer space—and, since the enactment of the Antarctic Treaty of 1959, Antarctica as well. The treaty totally demilitarizes the continent, freezes the claims of any state, and ensures freedom of scientific investigation. As of 2009 the treaty includes forty-seven signatories.

The global commons are domains that lie beyond the exclusive jurisdiction of any state, but which may be used by all states and their nationals. Among areas traditionally considered as global commons are the world's oceans, the Antarctic, the atmosphere, and outer space, all of which today are governed by international regulatory regimes.

Oceans

The oldest recognized commons are the world's oceans. Ocean space covers 71 percent of the Earth's surface, touches 150 states, and serves as a main conduit for international trade and commerce, as well as a vast storehouse of food, mineral, and energy resources. The 1982 United Nations Convention on the Law of the Sea, which in 2009 has 153 state parties, is the framework instrument for managing the ocean commons. Its 440 provisions incorporate generally accepted principles relating to activities on, over, and under the world's oceans. With respect to offshore delimitation, the convention adopts a 12-nautical-mile territorial sea, over which the coastal state enjoys all rights of sovereignty. The convention creates a new delimitation, the 200-nautical-mile

exclusive economic zone (EEZ), which establishes offshore state jurisdiction over the exploration for and exploitation of natural resources. It provides objective criteria for delineating the outer limits of the continental shelf and the high seas, and it articulates certain freedoms for use of the high seas, including vessel navigation, aircraft overflight, and the rights to fish, lay pipelines and cables, and conduct marine scientific research. The convention also establishes the right of vessels (and aircraft) to pass unimpeded through international straits, as well as obligations for all states to protect the marine environment and to regulate scientific marine research. The most difficult issue negotiated in the convention concerned deep seabed mining and who has the right to mine manganese nodules from the deep seabed—states with the technology to do so or an international regulatory body? The convention establishes an international organizational structure to regulate future deep seabed exploitation.

The Antarctic

The Antarctic commons encompasses the massive ice-covered continent surrounded by the Southern Ocean. Antarctica approximates the size of the United States and Mexico combined (14 million square kilometers), and is the highest, windiest, most desolate continent. It is also the world's largest desert (in terms of precipitation), yet paradoxically contains 70 percent of the world's fresh water frozen in its massive ice cap. Argentina, Australia, Chile, France, New Zealand, Norway, and the United Kingdom claim territory in the Antarctic. Following the successful International Geophysical Year during 1957–1958, these seven

We must become the change we want to see. • **Mohandas Gandhi (1869–1948)**

states, along with Belgium, Japan, South Africa, the Soviet Union, and the United States, agreed that preserving international cooperation in the Antarctic was essential. In 1959, the governments of all twelve nations negotiated the Antarctic Treaty, which in 2009 has forty-seven parties. This agreement totally demilitarizes the continent, freezes the claims, and ensures freedom of scientific investigation. Additional agreements for the Antarctic have been negotiated, including the 1964 Agreed Measures for the Conservation of the Antarctic Fauna and Flora, the 1972 Convention for the Conservation of Antarctic Seals, the 1980 Convention for the Conservation of Antarctic Marine Living Resources, a 1988 Convention on the Regulation of Antarctic Mineral Resource Activities (which never entered into force), and the 1991 Environmental Protection Protocol to the Antarctic Treaty. Serious problems still confront the Antarctic commons, among them increasing shipborne tourism to the region, the accelerating depletion of fisheries in circumpolar seas, and the effects of global warming resulting in disintegration of Antarctic ice shelves.

The Atmosphere

The atmosphere includes the troposphere (where weather patterns begin), as well as the stratosphere (where the ozone layer is located), the mesosphere, and beyond. The atmosphere provides virtually limitless sources of oxygen, carbon dioxide, and nitrogen essential for all life, as well as the water needed for living resources. At the same time it shields the Earth from ultraviolet radiation, cosmic rays, and meteors.

Three manmade threats to the atmosphere required creation of special regimes. The first of these occurs in the stratosphere and relates to human-released chlorofluorocarbons (CFCs) that react photochemically, thereby eroding the ozone layer. This process permits more intense ultraviolet radiation and greatly amplifies the risk of skin cancer for larger numbers of people in the Southern Hemisphere. Reaction to this threat in 1985 produced the Vienna Convention for the Protection of the Ozone Layer, but this instrument

does not contain specifics on how to arrest ozone depletion; it merely calls for action. Consequently in September 1987, governments negotiated the Montreal Protocol on Substances that Deplete the Ozone Layer, which sets out a schedule for progressively phasing out CFCs.

A second atmospheric threat concerns global climate change. Human activities—most importantly deforestation and the burning of fossil fuels such as coal, oil, and natural gas—are known to be altering the atmosphere's composition and contributing to global warming, although uncertainty still surrounds its severity or future effects. These changes cause glaciers and polar ice caps to melt, thereby raising sea levels and threatening islands and low-lying coastal areas. The international response to the climate change threat came in the U.N. Framework Convention on Climate Change, adopted at the Rio Summit in 1992. This instrument establishes a process for voluntary reduction of greenhouse gas emissions. In December 1997 the Kyoto Protocol was negotiated to legally commit industrialized states to reduce greenhouse gas emissions. Final negotiations on the protocol in 2001 require industrialized states to reduce their combined annual greenhouse gas emissions by 2012 to 5.2 percent below the levels measured in 1990.

A third threat to the atmospheric commons is airborne transnational pollution. The air serves as a medium for pollutants, most notably transnational acid precipitation from the United Kingdom over Scandinavia and from the United States over Canada. In 1979 the International Treaty on Long-Range Transboundary Air Pollution (LRTAP) was negotiated, which remains the preeminent attempt to regulate transboundary air pollution. At least eight protocols have been negotiated to curb specific pollutants, such as sulfur emissions and nitrous oxide.

Outer Space

The final global commons is outer space, which extends beyond the Earth's atmosphere. As humans seek to use this region, the need for regulating it grows. Special international agreements now comprise a



legal regime for managing the outer space commons. The main agreement is the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space. This agreement sets out core duties for states using outer space. Among these are the stipulation that exploration and use of outer space shall be carried out in the interests of all countries; outer space shall be free for exploration and use by all states; outer space is not subject to national appropriation by claim of sovereignty; no weapons of mass destruction may be placed in orbit or on celestial bodies; the moon and other celestial bodies shall be used exclusively for peaceful purposes; and states shall be liable for damage caused by their space objects.

Other major space law instruments include the 1968 Convention on the Rescue and Return of Astronauts and the Return of Objects Launched into Space, the 1972 Liability for Damage Caused by Space Objects Convention, and the 1975 Convention on Registration of Objects Launched into Outer Space. A fifth accord, the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the Moon Treaty), has attracted few parties and no space-faring state.

The industrial revolution profoundly changed how the global commons are used, particularly in terms of resource exploitation and environmental degradation.

If the oceans, Antarctica, the atmosphere, and outer space are to provide future benefits for all humankind, governments will have to cooperate more closely to regulate and enforce the legal regimes created for their protection and conservation.

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See also Antarctica; Climate Change; Oceans and Seas; Population and the Environment; Space Exploration

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Globalization—Historical Perspectives

The web of human communication spread slowly and sporadically beginning with the earliest foraging populations in East Africa, but people remained unconscious of their global reach until European navigators sailed across the Pacific after 1492. Social, economic, and cultural impacts ensued as technologies and travel advanced globalization during the Industrial Revolution and into the twentieth-first century.

Ever since humans achieved their distinctive powers of speech and started to expand beyond the savanna lands of East Africa, contacts with neighbors kept separate bands in occasional touch with one another; and exchanges of genes allowed them to remain a single species even after spreading entirely around the globe. A slender global web of communication sporadically interrupted in remote locations—sometimes for centuries or longer—continued to unite humankind. But as long as people knew nearby neighbors only, no one was conscious of the global reach of the human web.

Even after about 100 BCE when peoples as far apart as the Chinese, western Asians and Europeans became aware of one another through military expeditions and trade, their consciousness remained restricted to Eurasia. Centuries of improvement in transportation gradually expanded the reach and intensity of contacts within the Old World, and parallel though less capacious linkages also developed in the Americas. The spread of bows and arrows from Eurasia to the Americas, beginning about 100 CE, and still spreading among the Caribbean islands when Columbus arrived in 1492, is the firmest evidence we

have of how the two systems sometimes interacted, at a time when bows and arrows were still unknown in Australia and islands of the Pacific.

Globalization only became conscious when European navigators discovered America, and then sailed across the Pacific between 1492 and 1519. At first only a few were aware of the new contacts Europeans ships thus inaugurated. The news spread rapidly among the literate classes within Europe, thanks to printing and mapmakers; elsewhere reaction was slower and less enthusiastic.

The most significant effect, initially, was the transfer of infectious diseases from disease-experienced populations of Eurasia to previously isolated peoples, who lacked inherited resistance to the new infections. They therefore suffered disastrous die-offs when exposed to a series of lethal diseases like smallpox, influenza, and measles. Small islands were wholly depopulated; Amerindians in Mexico and Peru suffered something like 80 percent die-off within the first 120 years of exposure; and comparable losses occurred in Pacific islands and among previously isolated peoples elsewhere.

Colonists from Europe and slaves from Africa soon started to supplant the demoralized and diminished Amerindians. A lengthy process of frontier expansion at the expense of Indian peoples ensued in both North and South America, ending in the United States, according to the official census, only in 1890. The rise of the United States and other American nations like Brazil, Mexico, Argentina, and Canada radically altered the older Eurasian balance of power and population. This was the principal change resulting from the first phase of globalization.

As infectious diseases reached their climatic limits and local human populations developed similar levels of resistance to them, and as doctors simultaneously learned how to control infections with vaccination and antibiotics, epidemics ceased to play such a significant role in human affairs. Nonetheless, globalization continued to upset existing social arrangements everywhere, mainly through increasing economic and cultural impacts.

That in turn depended on the rapid improvement in transport and communication that arose from increasing reliance on machines and inanimate energy, which historians often refer to as the Industrial Revolution. Coal-burning steam engines were the first to power factories (1785), steamships (1807) and railroads (1825). In due course, oil and electricity supplemented and often supplanted coal as a preferred source of power. Instantaneous communication was inaugurated with the electric telegraph (1837). Telephone (1876), radio (1895), movies (1895), airplanes (1903), TV (1936), and computers (1946) followed in rapid succession, each affecting few at first, but rapidly expanding their scale of operation and altering the daily lives of a majority of humankind.

The resulting sudden assault on older habits and routines is what globalization has come to mean in recent years. In economics, its principal manifestation was a vast expansion of international trade and especially the spectacular rise of China as an exporter of manufactured goods after 1978. Cheap, often excellent consumer goods made in China flooded into the United States and other countries, sometimes displacing local manufacturers. The banking and financial crisis that began in the United States in 2008 and soon spread to the rest of the globe intensified the pressure on the U.S. and European manufacturers. The bankruptcy of General Motors and Chrysler signaled the seriousness of the crisis for the United States. How it will be resolved remains uncertain.

Though globalization may be blamed, trying to exclude foreign imports is unlikely. Costs would be very high and beyond all calculation. Effective global



Yoshiiku Ochiai, woodcut (1860). A Russian woman plays the flute for a British man holding a rifle. Technologies and travel advanced globalization during the Industrial Revolution, resulting in social, economic, and cultural impacts.

regulation and deliberate economic management is even more unlikely. Accordingly, global competition will probably continue to challenge established economic relationships—just as it has throughout the past, but now with unprecedented speed and force.

Culturally a similar competition arose as movies, then TV and recorded popular songs, began to influence human behavior and expectations. Hollywood blockbusters in from United States and Indian movies mostly produced in Mumbai (Bombay), achieved the widest circulation beyond national borders. When poor peasants and recent migrants living in urban slums encountered the wealth, luxury, and sexual display flaunted by movie stars and pop singers, discontent with their own harsh circumstances tended to intensify. Young people in particular often rebelled

It has been said that arguing against globalization is like arguing against the laws of gravity. • **Kofi Annan (b. 1938)**

against the customs and norms their parents sought to transmit to them.

But as local customs and traditions were thus weakened, a powerful counter current of religious reaction arose, especially in Muslim lands, energetically aimed against the “Great Satan” of American popular culture. Terrorist attacks resulted, most notably the destruction of the World Trade Center towers in New York on September 11, 2001, whereupon the American government declared a “War on Terror” and invaded Afghanistan, thereby inaugurating hostilities that still continue in 2010.

Economic setback and the War on Terror thus join together to confront the American people and their government with unsolved problems that seem sure to persist for a long time. It therefore appears that globalization can hurt poor and rich alike, intensifying

the pace of social change around the globe to or beyond the breaking point when ruthless violence takes over.

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See also Biological Exchanges; Columbian Exchange; Industrial Revolution; Migration—Overview; Slave Trade

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Globalization—Modern Conceptions

Discussions about the pros and cons of globalization can be clarified by analyzing the term as a process or a phenomenon. As a process, globalization is not historically universal but can proceed in different ways at different times. What defines globalization is not the end state but a series of actions: reducing the isolation of territorially defined communities, and increasing the interaction and variety of contacts between them.

The first step toward a clearer view of *globalization* is to distinguish the word, as a noun used to describe a phenomenon or an existing condition, from the use of *globalize*, a verb implying a process. In the former example, we witness globalization to the extent that consumer goods from all parts of the world are now available in the market shelves of the richest countries. Similarly, in practically every corner of the globe one can find islands of consumption similar to those enjoyed in the rich countries. Globalization has drastically reduced the time these transactions take, and dramatically improved the ease with which they are arranged. We now can travel practically anywhere in the world in less time that it would have taken to go from the capital to a provincial town a century ago. It is also possible to phone or obtain information on faraway regions in literally seconds.

If we use the term *globalization* in this way, the Spanish sociologist Manuel Castells (2000) contends that we are living through a dramatic transformation into a global economy distinct from the “world” economy born in the sixteenth century. Yet Paul Hirst and Grahame Thompson (1999), in their

book *Globalization in Question*, offer evidence indicating that the current process of global interconnection is much less dramatic than what occurred in the late nineteenth and early twentieth centuries. Whatever the specific years of its beginning, there is no question that certainly beginning in the mid-nineteenth century, and then following World War II, the world has seen an unprecedented degree of globalization, especially as we include all the new forms of noneconomic contact (e.g., tourism and the Internet).

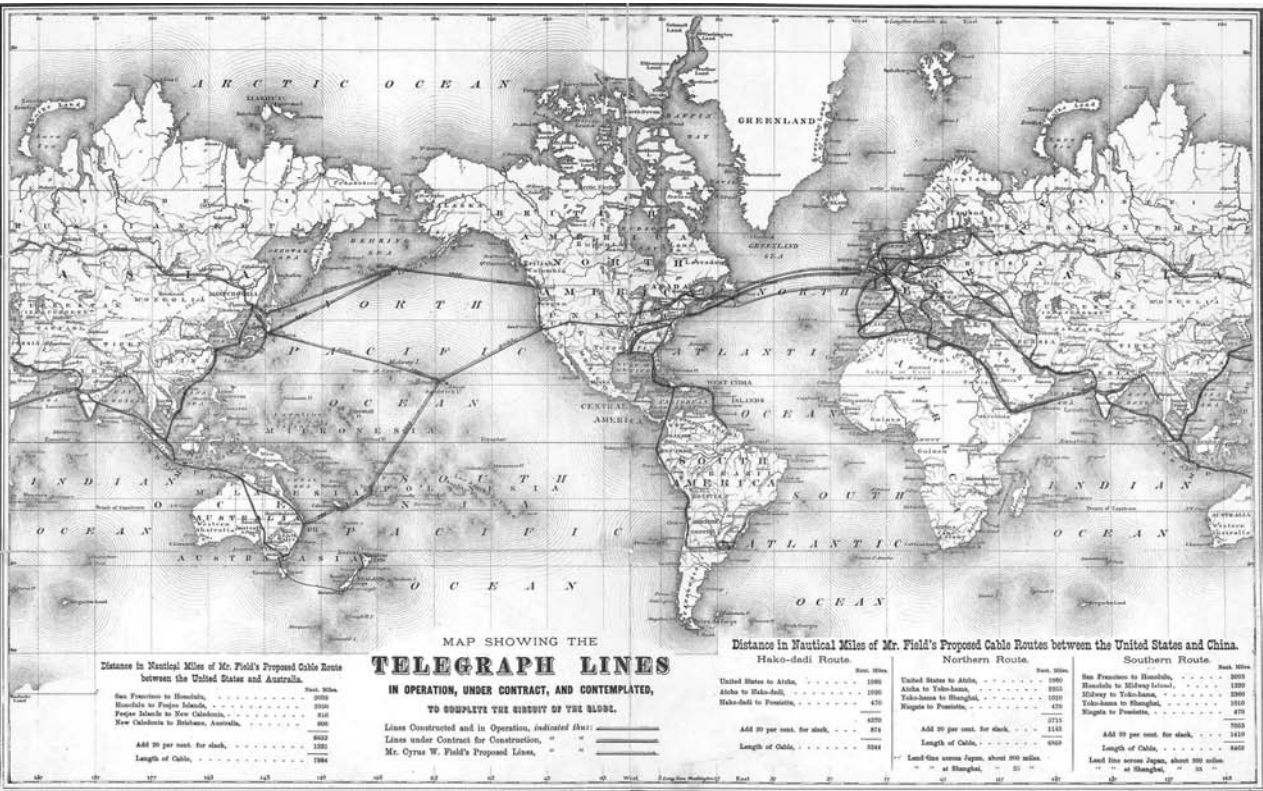
If we prefer to understand the concept by using *globalize*, the verb, then we can speak of the thickening of contacts between previously isolated regions, and the facilitation and institutionalization of such flows. In this way, “global” would not refer exclusively to processes involving the whole world, but the integration of known areas of possible interaction. As such, globalization has occurred in various other historical periods. Empires such as the Roman, Chinese, and Ottoman, as well as the Islamic community by the fifteenth century, could be perceived as engaging in a process of globalization. One could argue that the initial migration of hominids from Africa and their subsequent colonization of the Earth was the first example of this process, as was the network of trade routes along the Silk Roads between China and the Mediterranean, which began in earnest during the second century BCE. The degree of European expansion in the fifteenth century would be another, as would the creation of subsequent empires through the nineteenth century. The revolutions in communication and transportation culminating in cheap airfares and the Internet are thus merely means in the latest phase of globalization.

Measuring Globalization

Precisely because it is so apparently ubiquitous, measuring the extent of globalization has not been easy. The development of international trade has been the most immediate (or most visible) phenomenon associated with it, but money, in and of itself, has come to play an arguably even larger role than does the transfer of material goods. Labor, while still subject to much greater control than capital, moves transnationally while international tourism now involves millions of people yearly. The ubiquity of American culture is already a cliché, but it is also possible to eat sushi, drink Beaujolais, and buy curry in any metropolitan center.

Perhaps the most often used figures involve the increases in the global exchange of goods and money. In the 1960s trade accounted for one quarter of the global production of goods and services. By the

twenty-first century international flows accounted for roughly half of these. Cross-border trade became so prevalent that the world actually traded more than it made each year (accounted for by goods moving back and forth across borders during production and because of transshipments). More spectacular was been the growth of global finance. Foreign exchange dealings totaled US\$15 billion in 1973, but in 2001 the total was nearly one hundred times as much. Foreign direct investments tripled during the 1990s to equal nearly US\$750 billion dollars and represented the lifeline for many economies. The United States itself financed its government and commercial deficits by relying on a global community willing and able to purchase its debts. In 2010, as governments, businesses, and individuals attempt to recover from a global financial crisis, it has never been clearer how economies worldwide are inextricably linked.



Map showing the telegraph lines in operation, under contract, and contemplated to complete the circuit of the globe in 1869, four years after the formation of the International Telegraph Union.

People have accused me of being in favor of globalization. This is equivalent to accusing me of being in favor of the sun rising in the morning. • **Clare Short (b. 1946)**

But contemporary globalization is different from previous epochs, precisely because it involves many other forms of contact other than exchange of goods and services. Migration, for example, obviously played a huge role in the nineteenth century, but in the twenty-first, it has become even more critical to the survival of both sending and receiving countries. Three major networks seem to exist: from Africa and eastern Europe to western Europe, from Latin America and China to the United States, and from Southeast Asia to the Persian Gulf. There are also smaller cycles in western Africa and South America, and within countries. It is difficult to measure much of the migration as it is illegal, but estimates for the 1990s include 25 million for politically induced migration and 100 million for economically or socially induced migration. By 2005 a United Nations estimate put the total figures worldwide at 185–192 million. Tourism is an even more recent phenomenon and one that has shifted the way many people view other countries and cultures. Estimates of tourists for 2001, at 700 million travelers, increased to about 900 million in 2008. While citizens of rich countries are obviously overrepresented in such flows, tourism has become infinitely more democratic since the 1970s.

Culture has also become globalized, ranging from secular to sacred. Popular music, movies, and television shows have now become global commodities. This began with the export of easily dubbed American action movies in the 1970s and 1980s, but now features marketing strategies of multiple premieres separated by oceans. References that once would have made no sense to those outside of a particular culture can now be understood by millions of people who don't even speak that culture's language. To a great extent, this process has involved the "Americanization" of global culture, but in the twenty-first century it appears that this will be much more of a polyglot phenomenon than many would suspect. Among the global Indian diaspora, "Bollywood" (the center of Hindi-language filmmaking) is as important as its Californian counterpart. There is a broad geographical representation among the "global celebrities." Consumer products have also become globalized;

where before each country had a national cigarette, beer, soap, and sports team, the last two decades of the twentieth century saw the rise of Marlboro, Heineken, Ivory, and Michael Jordan. Music has also become less of a provincial taste with phenomena from Madonna to the "Three Tenors" on worldwide tours.

Perhaps the most important cultural development of the last quarter of the twentieth century is the ideological hegemony of markets and elections as the operating mechanism for societies. While practiced in myriad ways and never approaching theoretical perfection, capitalism and democracy have become the assumed economic and political options. Other auxiliary political cultural trends include the disappearance of social revolution as an oppositional trope and the rise of nationalist and ethnic appeals. Religion is perhaps our oldest global cultural phenomenon, but no more so than in the twenty-first century. At least in 2010, it is not clear the extent to which a global Islamic movement has moved from organizational conspiracies to a truly social movement, but certainly the Muslim community is much more aware of itself as a global presence than in the past. Similarly the Roman Catholic Church has had to broaden its leadership as its base shifts away from western Europe. The Dalai Lama is recognizable in large parts of the world and pictures of Vishnu can be purchased in almost any city.

Assessing the Pros and Cons

Over the past decade there has been a great deal of discussion of whether the phenomenon of globalization benefits or hurts the majority of the global population. On the pro side, some argue that globalization combines the greatest economies of scale and productive efficiencies to provide everything from consumer goods to medical vaccines to a broader part of humanity. Globalization has also made it more difficult for local despots to hide their crimes or for disasters to remain secret. Explicitly using the model of the market as their base, such arguments defend globalization as providing more for many in unprecedented



ways. Opponents of globalization deny that the balance of benefits justifies the costs of globalization. These include the homogenization of cultures, and the loss of autonomy by smaller regions or ethnic groups. They point, for example, to the eradication of languages over the past few decades as a sign of what is to come. For the opponents of globalization the variety and number of products that it makes available have only led to the creation of a global class divide allowing a small minority of the world's population to emulate the rich. The increase in the relevant market size and the disappearance of national borders have also made it easier for large conglomerates to create effective monopolies. This has led to a "race to the bottom" among societies where each competes to offer the cheapest labor and loosest government regulations.

Part of the argument regarding the overall benefits of globalization concerns the extent to which it is seen as inevitable. For those who judge globalization positively, it seems perfectly obvious that the functional efficiencies of this phenomenon account for its rise. The world was looking for a "better mousetrap," and globalization has allowed us to buy it in several different colors. Attempts to resist globalization can only result in unnecessary suffering, as those left in its wake will not be able to survive. Opponents of globalization do not see it as arising naturally out of the needs of global population, but as a product of the political domination of the United States following the collapse of the Soviet Union, and the preferences of multinational corporations seeking ever greater profits. Producers and sellers want to be able to operate on a global scale and look to the American policeman to protect their interests. A third group that does not necessarily take sides on the benefits associated with globalization sees it as a product of the technological developments of the past decades. Here the ubiquitous computer and that which it makes possible are responsible for creating a global web of connections that forces states, firms, and individuals to perform on a worldwide stage.

If we treat globalization as a process rather than a final state—as a verb rather than a noun—then

much of this debate becomes irrelevant. A historical process can lead to positive or negative results depending on its context or its timing. It may benefit different groups at different times and in different ways. To judge globalization as a final state is particularly dangerous as there has been so little time to appropriately measure and analyze its characteristics and consequences. The process of globalization is also not historically universal, but can proceed in different ways at different times. What defines it is not the end state, but the process of reducing the isolation of territorially defined communities and increasing the interaction and variety of contacts between such communities. It can lead simultaneously to a broader menu of cultural, social, and political choices and to the standardization of models adopted by previously unique groups. If understood as a recurring historical cycle, globalization loses much of its mystery and becomes yet another social phenomenon subject to study and comparison.

There remains considerable debate on the importance of globalization as a social phenomenon (and even about the analytical coherence of such a concept). Not surprisingly, there remains considerable debate on the extent to which the current wave of globalization will continue or be stopped (as were previous ones) by the collapse of the connections and the rise of violent conflicts between regions. Some argue that we are moving toward an ever more globalized world and that nothing can push it back. On the one hand, the dependence on complex technology and advanced engineering do make the current stage susceptible to crashes of one sort or another. On the other, enough of the world's population has enjoyed at least limited benefits from globalization (at least vicariously) to make them strong advocates of the maintenance of some sort of global web of connections.

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See also Law, International; International Monetary Systems; International Trade Networks; Corporations, Multinational

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Gold

Gold is rare, soft, shiny, and highly valued as jewelry. It seldom reacts with other chemicals and can be beaten into very thin sheets to decorate large objects. Its principal use was as coined money after the sixth century BCE. In the nineteenth century gold rushes in California, Australia, South Africa, and Yukon Territory-Alaska created new and diverse communities in a surge of economic activity.

Gold has long been important in trade between regions of the world. As a “precious metal,” gold is uncommon, attractive, easily worked into products, non-reactive, and avidly sought for decorative purposes. Despite being scarce in quantity, gold can be found in many locations around the world, a fact that has made it widely known and admired. The convenience of transporting small amounts of gold, as compared to other trade goods, led the metal to become a universally accepted medium of exchange and standard of value for trade (money).

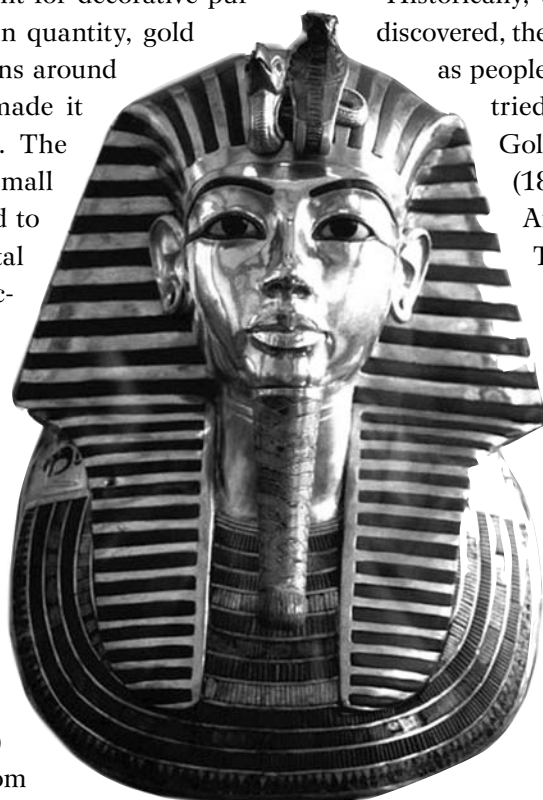
Gold, along with silver and copper, were the earliest metals used by people. (The working and using of gold and silver are documented back to 4000 BCE. Both metals can be found in a native [pure] state or in other minerals that are processed.) Gold is often washed away from

its original location and deposited in streams and rivers, where it can be easily found. Such sites were the main source of gold until the 1800s. Miners also mined gold veins directly when they were discovered at the surface. Until the 1800s underground miners of gold were often slaves and convicts who worked in miserable and dangerous conditions. Even during the 1800s underground mining of gold and silver remained a difficult and dangerous job. In 2008 the primary sources of gold are mines in China, South Africa, United States, and Australia although gold is mined in some amount in many countries of the world (USGS 2009, 69).

Historically, when a large source of gold was discovered, the discovery often created a “rush” as people desperate to become wealthier tried to find the precious metals.

Gold rushes occurred in California (1848), Australia (1850), South Africa (1850s–1880s), and Yukon Territory-Alaska (1896–1898). These rushes created new communities and brought people from different parts of the world together in a surge of economic activity.

Both gold and silver were originally traded by weight in various forms, but no consistency in purity and size



Solid gold death mask of the Egyptian pharaoh Tutankhamun. The Egyptian Museum, Cairo.

We live by the Golden Rule. Those who have the gold make the rules. • **Buzzie Bavasi (1914–2008)**



Poster circa 1897 for the play *Heart of the Klondike*. Gold rushes brought people from different parts of the world together in a surge of economic activity. Library of Congress.

existed. This lack of consistency led to the standardization of traded gold and silver and eventually to the creation of coins. The first known precious metal coins were made by the nation of Lydia (Turkey) around 600 BCE. Today we still speak of someone “being as rich as Croesus,” who was a king of Lydia (560 BCE). The less-common gold became reserved for royalty and government use, whereas silver became the main trade metal for business.

The search for gold and the control of its sources have had a significant influence on human history as a motivation for exploration, trade, and conflicts. The

story of Jason and the Argonauts (1200 BCE) is about Greeks exploring the Black Sea region for gold. The “golden fleece” of that story was the sheepskin that was used to catch gold in the water troughs used in the early mining process. Gold was sent from Europe to China in exchange for silk and other goods over the Silk Roads through Central Asia (200 BCE to the late 1300s). Gold was brought through Timbuktu (Tombouctou, founded in 1100 CE) in present-day Mali, Africa, on its way north to be traded for salt on the trans-Saharan trade route. The exploration of Mexico, Central America, and South America by Europeans and their frequent conflicts with native peoples were driven by the search for gold.

The commercial role of gold has been changing since the 1900s. Gold has limited use as a medium of exchange for the average consumer, but continues as a store of value held by governments and individuals (especially during financial downturns or times of currency fluctuation). Gold, especially as it is used in jewelry, remains a symbol of wealth and status.

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See also Currency; Silver

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Government

The views and arguments of classical Greek thinkers continue to shape discussions about government, even governments that preexisted the Greeks. Six basic forms predominate: tyranny (rule of one for his own good), oligarchy (rule of a few for their own good), democracy (rule of many for their own good), monarchy (kingship), aristocracy (rule by a few prominent citizens), and good democracy (or “polity,” rule of one, few, or many for the common good).

Serious discussion of the forms of government (or, as we also may call them, regimes or constitutions) that shape cities and countries begins with the classical Greek thinkers. It is in light of their discussion that we first analyze even those governments that preexisted the Greeks. Those early governments were either monarchies or extended villages that did not rise to the level of complexity that the Greeks discovered was necessary for a true city or country.

Greek Discussions of Government

Socrates (c. 470–399 BCE) was the first person to examine human affairs philosophically, and he saw that the core of ordinary human affairs was political. His arguments and views were developed by Plato (c. 428–348 or 347 BCE) in his dialogues. Distinguishing what belongs to the historical Socrates and what to Plato himself is largely a fruitless enterprise, less important than attending to the discussions themselves.

Plato’s purpose in analyzing forms of government was to understand what political life truly is, not what it merely appeared to be under changing

circumstances. The rational search for what truly is the defining element of philosophy and the sciences that later flow from it. The philosophical effort generally begins with Socrates’ predecessors, the so-called pre-Socratics, notably Parmenides (b. c. 515 BCE).

The Greek thinkers argued that politics is the core of human affairs because the polis, the Greek city, is sufficient in its size and complexity to allow the full display of human characteristics in their possible excellence, or virtue. Justice is central among the ethical virtues, and it is the central excellence toward which political organizations and rule aim. Anything smaller or less complex than a city, such as a village, falls short of virtue because it does not allow sufficient leisure or sufficient freedom of discussion among equals about what is better and worse in developing character, conducting war and peace, or pursuing rational arts and skills such as medicine. Smaller units remain too economic in their focus, dealing as they do largely with meeting necessities, and too paternalistic in their rule, being primarily extended families. Anything larger than the city, moreover, such as the Persian Empire that the Greeks fought or the Egyptian Empire that Greek historians such as Herodotus (c. 484–c. 425 BCE) examined, adds nothing vital to possible human excellence, even if it is sufficiently complex and diversified—which many large agrarian territories are not.

The central place of the city means that the Greek discussion of forms of government focuses on it; the fact that the city encompasses the full range of human virtue means that the discussion, if true, is in principle adequate for understanding larger units such as our contemporary countries. The most complete classic discussion of forms of government occurs in



Giovanni Antonio Sasso, *Elevation of the [Roman] Forum at Athens*. Engraving. Built in the first and second centuries CE, the forum is located north of the Acropolis and east of the original classical Greek agora. It served as the market place and administrative center of the city. New York Public Library.

works such as Plato's *Republic* and *Statesman* and, especially, in the *Politics* of Aristotle (384–322 BCE). Aristotle's discussion sets forth the framework in which analyses of constitutions have been conducted from his time forward. Forms of government are divided by how many rule and whether or not the rule is just and serves the common good (rather than the private or class good of the rulers). The six basic forms are tyranny (rule of one for his own good), oligarchy (rule of a few for their own good), democracy (rule of many for their own good), monarchy, aristocracy, and good democracy (or "polity," rule of one, few, or many for the common good).

Aristotle develops this basic classification in a number of ways that make it increasingly subtle and complex. Oligarchy is not merely rule of the few generally but is usually rule of the few who are wealthy, and democracy is rule of the many whose central characteristic is that they are poor. Aristocracy is rule of the few who are ethically virtuous and possess practical wisdom, or "prudence." Varieties of democracy exist that depend on which group from among the relatively poor dominates: farmers, merchants, or the urban poor, for example. Moreover, mixtures exist between the rich and the poor, where the gradations of wealth are so subtle that no group dominates, or where a middle class is superior to either the rich or the poor. Aristotle's view is that such mixed regimes

are the best forms of government one is likely to achieve in practice.

Good government, moreover, is generally characterized by the existence of law (as opposed to arbitrary commands) that citizens accept willingly, rather than government that is imposed involuntarily. The basic laws that distribute functions and offices, moreover, are good when they balance properly the claims to rule that are made by the ethically virtuous and prudent, the wealthy, and the many poor who are free soldiers. All contribute something important to the life or to the good life (the virtuous life) of the community. The good legal and practical balance that we see in mixed regimes or in the better democracies imitates the genuine but rare excellence of rule for the common good of one or a few who are virtuous.

Most governments will be either democracies or oligarchies, with varying degrees of pretension to excellence. Aristotle bases his discussion not only on the intellectual possibilities but on examining the forms of government of many cities, of which only his description of the Athenian constitution fully survives. Together with Plato (and Socrates' contemporary, the historian Thucydides, d. c. 400 BCE), he is especially concerned with the two leading regimes of fifth- and fourth-century BCE Greece, Athens and Sparta, the leading democracy and oligarchy or, some would argue, aristocracy, respectively.

Plato and Aristotle treat the form of government not as a narrow administrative entity but as vital for the overall life of the city: Everything in the city is organized to promote the ruling class's way of life. (We might as easily speak of, say, the democratic way of life as of the democratic regime.) The constitution shows us who rules, and all rulers make law according to a principle of distributive justice, equal to equals and unequal to unequals. This principle normally is made concrete by the unequal wealth or equal freedom in terms of which democrats and oligarchs, respectively, distribute offices and, through law, permit or encourage activities. This is why a significant place among the rulers for the virtuous—those of excellent character and practical judgment—is, for Aristotle, so vital, because to promote and serve the conditions for their excellence is also to serve the community as a whole. One of democracy's advantages is that by

allowing many activities it permits the philosophic or scientific life and, thereby, intellectual excellence. This democratic equality exists at some expense to outstanding moral excellence, however, and in any event, as the trial and death of Socrates makes clear, the Greeks of the time thought that an inevitable tension existed between the unbridled questioning engaged in by thinkers and the beliefs and opinions that cities and countries must take for granted. This difficulty is especially pronounced to the degree that religious belief belongs to or, indeed, forms, a community's laws.

Monarchies before and after the Roman Republic

Aristotle's and Plato's analyses are the basis of subsequent discussion. Factually, monarchies—kingships

Vittore Carpaccio, *The Pilgrims Meet the Pope* (c. 1492). Tempera on canvas. The place of priests and the link between rule and worship was important in Greek cities and in Rome. Gallerie dell'Accademia (Venice).



Let us tenderly and kindly cherish, therefore, the means of knowledge. Let us dare to read, think, speak, and write. • John Adams (1735–1826)

or tyrannies—were the rule in the Aegean and surrounding areas after the conquest of the Greek city-states by Philip of Macedon (382–336 BCE), as they had been in China and Egypt. The most famous such regime was the empire of Alexander of Macedon (356–323 BCE). The outstanding exception was the Roman republic (509–27 BCE). Rome is analyzed and described extensively by residents and observers such as Livy (59 BCE–17 CE) and Polybius (c. 200–c. 118 BCE) and by later thinkers such as Niccolò Machiavelli (1469–1527) and the founders of the United States in the eighteenth century. The Roman Senate made Rome in one sense aristocratic or oligarchic, and growing power for the people added a democratic element. One might even say that short-term dictatorships and consulates involved a monarchical element. Rome was on the whole a mixed regime, emphatically republican (that is, not a monarchy) in its operation and self-understanding until it was replaced by the Roman Empire.

Various kingships and religious empires followed the Roman Empire. The new element was revealed religion, especially Christianity and Islam. The place of priests and the link between rule and worship always was important in Greek cities and in Rome. Aristotle downplayed the question of piety in his political analysis proper, but the connection or even possible identity between obedience to law and to divine commands was clear. Apparently new after Rome was universal and imperial religion and its connection to political life. Christianity in particular gave rise to new questions about the connection between monarchies and the organized priesthood, culminating in the papacy. The leading Christian thinker of the Middle Ages, Thomas Aquinas (1225–1274), did not emphasize these questions, however, but followed as best he could Aristotle's analysis of regimes. We might think of feudal regimes as monarchies that were buttressed by the Church with an admixture of oligarchy. Ties to the land and the link between land and politics, moreover, often made medieval political divisions more hereditary than was common in Greece, with its active democracies, or in the Roman republic,

where the democratic elements supplemented the more hereditary Senate.

Liberal Democracy

Machiavelli's analysis of Rome was one element of the new understanding of forms of government and, especially, of their operation, that triumphed in the West from 1500 onward. It began as a return to Roman and Greek republicanism spurred by concern with the effects of monarchical and priestly dominance, and culminated in the Enlightenment, in the thought of Thomas Hobbes (1588–1679), John Locke (1632–1704), Montesquieu (1689–1755), and others and in the revolutionary governments of England and the United States.

These governments are best called liberal democracies or representative democracies, democracies that seek to protect and employ politically and economically the unequal degrees of wealth, learning, and moral responsibility that their equal freedom and competition often call forth. Such regimes were not fully developed until the founding of the United States, which features the first fully written constitution, and the culmination of Great Britain's Glorious Revolution of the late seventeenth century in Britain's party government of the nineteenth century. Liberal democracies are at the root of much that we consider democratic today. In one guise or another they are dominant in Europe and North America and in many countries in Asia, Latin America, and Africa.

Liberal democracies are variants of the rule of the people; like Greek democracy, they emphasize freedom, self-government, and an orientation toward equality. They differ, however, in several respects. They are based on the equal rights of all individuals rather than, as with the Greeks, on the mere fact of their freedom, defended militarily. As opposed to Greece and Rome, they therefore inevitably press away from slavery, which often was consequent to defeat in battle, even if, as in the United States, they begin by accepting it. They also press toward factual equality in rights for women; women in Greek democracies

enjoyed more liberty, especially within the family, than in many other regimes then and now, but were not equal governors of the city. Liberal democracies, moreover, are based on consent of the governed as a matter of right and choice, not only as a necessity with which governments must deal. They are oriented to economic growth and acquisition, moreover, rather than toward equal distribution of resources or to aristocratic character and the use of leisure and wealth to develop and express this character. They help foster this acquisitive orientation and the intellectual and scientific efforts that aid it through religious toleration, whose effect is to control public religious strife by making religion basically a private affair. They also encourage the forming of countries of great size and diversity because they foster the existence of a variety of competing interests in order to encourage economic growth and to discourage democracy from degenerating to the poor lording or seeking to lord it over the wealthy or the wealthy or any other minority group lording it over the poor.

Because of all this the function of government in representative democracies becomes limited to

regulating private freedom and competition, helping to advance equal rights and opportunity, and providing national security. These limited functions are compatible with extensive efforts and a plethora of laws. Nonetheless, these limits mean that state and society or public and private come to be split much more cleanly than in Greek cities or in the Middle Ages. Types of government no longer shape the whole country or city, but tell us how states are structured to serve society. Indeed, large and complex liberal democratic countries are governed indirectly through representatives rather than ruled directly in assemblies, as was the case with Greek democracies. Representation, however, is less a mechanical device to deal with size than a means to create distance between immediate popular passions and government's decisions. It also permits the special skills, character, sense of responsibility, and enterprise of those who excel to benefit their countries rather than to be at odds with them.

This benefit also is promoted by federal structures and a variety of economic enterprises that enable many to rise to the fore and not compete disastrously

People gather at a political rally in Columbus Circle, New York, between 1941 and 1942. Political rallies figure importantly in representative democracies.
Photo by Alfred T. Palmer.
Library of Congress.



over static resources and positions of leadership. In fact, unlike Greek democracies but with some similarity to the Roman republic as interpreted by Machiavelli and others, modern liberal democracies harness competition to useful ends rather than seeking complete political agreement. By doing this they attempt to increase the longevity of democratic republics; previous democracies were short-lived because for the rich or others whose skills could not be accommodated in a democracy revolution was an attractive choice.

This competition is not only economic or federal, but is internal to governments themselves. Liberal democracies implement and feature political mechanisms such as separation of powers, which checks or limits overweening power should it arise anywhere in government, and political parties, which encourage legitimate opposition to the sitting government.

These principles and institutions were developed by Locke, Montesquieu, Thomas Jefferson (1743–1826), James Madison (1751–1836), Alexander Hamilton (1755–1804), John Jay (1745–1829), and others, primarily in the eighteenth century. Versions of the governments they set in motion became during the twentieth century the dominant governments in Europe, the English-speaking world, and much of Asia. Variants include cabinet or parliamentary systems such as the one in Great Britain, in which the executive and legislative are essentially jointly elected, the U.S. presidential system, which separates the electoral sources of executive and legislative power, and mixed variants in other European states. Some countries even maintain constitutionally limited monarchs. These governments all basically agree in the chief features mentioned above, however, as well as in others such as an independent judiciary, extensive freedom from government interference of speech and press, and an independent civil service.

The domination of liberal democracy did not come easily, nor is it altogether secure. Many French revolutionaries at the end of the eighteenth century supported a smaller, more direct democracy in which civic virtue, not economic enterprise, and more

unitary government, not separation of powers and representation, were the watchwords. Such governments, advocated by Jean Jacques Rousseau (1712–1778), hearkened back in size, although not in subtly developed liberty or sensible expectation, to Aristotle. Rousseau's thought also set the stage intellectually for the attempt to connect government to the nation and to think of states as needing to be nation-states. The kingdoms that made up Germany, for example, were amalgamated by Otto von Bismarck (1815–1898) into a national government, a monarchy that in some respects moved in the direction of constitutional principles. Similar activity occurred in Italy. Such a connection between government and nation was not essential in the original multiethnic representative governments of the United States or United Kingdom, nor in ancient Greek cities, which



The message on this 1920 poster translates into English as “Literacy is the road to communism.” New York Public Library.



were not defined by their dominant ethnic groups or tribes.

Socialism and Communism

The other counter to liberal democracy's spread in Europe was socialism and Communism. Socialism in its benign form is a large degree of state ownership of economic resources that, however, does not seek to change liberal democracy fundamentally. The division between state and society, or the limited purpose of government is, on the whole, still meant to obtain. Such socialism has proved in general to be inefficient economically and to restrict free entrepreneurship. British and Israeli government by their Labor parties after World War II and Swedish government for much of the last half of the twentieth century are examples of its successes and failures. Other forms of socialism, associated with, say, Robert Owen (1771–1858) in the nineteenth century, do seek a more thoroughgoing economic and sometimes noneconomic commonality than the individualism that liberal democracy defends, but such socialist communities never have mastered extensive territories and have lived short lives. Like anarchism and many variations of socialism associated with African and Asian rulers after World War II, they have had minimal effect beyond a single generation in a single place.

The notable exceptions to the very short life of socialist communities are Communism in the Union of Soviet Socialist Republics and its satellites in Eastern Europe, and Communist China. Together with fascism, Communism is the most powerful contemporary version of tyranny and one of the major rivals of liberal democracy. The key analytic question with Communism and fascism is whether they herald or display a new form of tyranny that differs in principles from ancient tyranny, or whether they are at root variants of it. The key practical question is whether liberal democracy has succeeded in overcoming them over the mid or long term.

Many contemporary tyrannies differ little from ancient tyranny except in size and in the modern weaponry and communications that enable them

to be especially murderous. This is true of several twentieth-century regimes in Latin America, Africa, and the Middle East. Communism and fascism, however, seem different enough to have earned the name totalitarian. They differ from ancient tyranny in being based or claiming to be based on principles or ideas (what, under their influence, we call ideologies), in the utter totality of their control of all areas of public, private, and professional life, in the amount of fear and terror they employ, in their level and degree of political and social bureaucracy and organization, in their imperial aggression, in their pretense to great longevity, permanence, and imperial sway, and (sometimes) in their ethnic base.

Their effect, nonetheless, is not different from that of ancient tyranny in the sense that what is bad about tyranny is at root similar in the ancient and modern understanding. The harm does not differ but, rather, is exacerbated by modern totalitarianism's completeness and scope. Ancient tyranny is rule over the unwilling by one (or in an extended sense by a few and even perhaps by many) solely for their private good, that is, solely for satisfying their desires, for exercising their cruelty, or even for giving unbridled reign to their wish to be admired or worshipped. As Plato discusses it, the tyrant seeks to enjoy any pleasure in any manner, even, perhaps especially, the most extreme. As Aristotle explains it, tyranny uses ways and means whose goal is to prevent free men from exercising their own political spirit. It restricts privacy and friendship because it seeks to limit discussion and opposition and to increase fear. It stunts not only freedom, but virtue as well.

The stunting of freedom and virtue and the proclivity to murder opponents and take what is theirs—in a word, extreme injustice—are the hallmarks both of ancient tyranny and modern totalitarianism. Contemporary fascism—Nazism in particular—employed complex political organization and bureaucracy to smother citizens and potential opponents, fully controlled education, communications, and culture, and, as the rulers' willfulness or supposed necessity required, arbitrarily directed the economy, science, and religion. The immediate justification

for these practices was the hardening, development, and dominance of the Aryan race or, more visibly, the destruction of the Jews and the Nazis' other invented enemies. Such arbitrary narrowness, irrationality, and cruelty attempted to justify itself intellectually through Hitler's writings and those of Nazi ideologues.

Communism under Lenin (1870–1924), Stalin (1879–1953), and Mao Zedong (1893–1976) was similar to Nazism in method, goal, and effect. It sought total control of all areas of life, stunted freedom, virtue, and independent political action, aggressively expanded its sway over other countries, and believed or pretended to believe itself justified by the arguments of Karl Marx (1818–1883) about the inevitability and propriety of Communist rule. It differed from fascism in claiming its principles to be universal rather than seeking domination of one particular race. Like Nazism, however, its reality was more in its effects than in its pretenses, in its denying liberty and virtue, and in the tens of millions killed under its regimes. Like fascism it is essentially ancient tyranny writ large with extraordinary scope for its brutality and with large numbers of people complicit with the rulers. The chief new element is the intellectual justification, which, however insincere, adds to the scope and defense of the brutality and impinges directly on freedom of thought by claiming truth in all things. However, even this element of tyranny's intellectual or pseudo-philosophical justification was not unknown to ancient thinkers.

Totalitarianism Defeated?

Totalitarianism fell, among other reasons, because of external opposition in the mid and late twentieth century to the Nazis and Communists. This opposition was organized into alliances and international structures in World War II and the Cold War that brought together but did not eliminate separate, free, governments. The history of international political structures is still another element in the history of forms of government. The founders of the United States, most notably the authors of *The Federalist*,

studied ancient and early modern federations as part of their attempt to devise a federal republic. The philosopher Immanuel Kant and others at the end of the eighteenth century devised plans for and predicted the emergence of federations among liberal republics that would help preserve peace. Such plans became the basis for the League of Nations after World War I and for the United Nations after World War II. Such alliances and structures, and still others such as the European Community, have not developed in the direction of a world state, however, nor has this been widely advocated. A world state necessarily limits free political participation and would seem to be an aid rather than a counter to tyranny should its control fall into the wrong hands.

Totalitarianism also fell because of the essential unnaturalness and therefore instability and distastefulness of its combination of extreme economic, scientific, and bureaucratic organization, complete common ownership, and overwhelming cruelty, arbitrariness, and irrationality. Together and separately these elements are unstable and undesirable. The effect of Nazi and Communist aggression and ideology, however, made their wide or even universal spread possible, especially had they not been countered. Would the unnaturalness of overwhelming brutality, stultifying organization, and completely common ownership have guaranteed their fall, or was the vigorous and armed opposition of free peoples also necessary to prevent their victory?

Contemporary theocracy forces us to raise such questions again; our final topic concerns theocracies or religious regimes generally. Some regimes that are dominated by notions of divine law and do not practice liberal toleration may nonetheless avoid willful or tyrannical demands of their citizens. This can occur if the law respects the free, virtuous, and reasonable as part or indeed the bulk of what is divine in man, and, therefore, if the law permits or encourages actions that stem from these qualities. Such regimes can be monarchies, oligarchies, or even democratic republics as long as the domination of divine law permits extensive differentiation between priests and governors, or between church and state.

An imperial religion that irrationally opposes free thought and inquiry, however, and the virtues of character such as pride and enterprise and the activities that follow from them, is hardly different in its effect from tyranny or totalitarianism. In their opposition to equality of rights and in their wish for total control of thought and action, some contemporary Islamic extremist leaders are quite similar to fascists; indeed, some were taught by or have allied themselves with ethnic particularists. In other cases, the hoped-for totality of control together with extreme violence and doctrines that reject reasonable discussion are similar to the tyrannies of Stalin and Mao. In any event, theocratic tyranny or totalitarianism is at the beginning of the twenty-first century perhaps the chief opponent of liberal democracy.

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See also Aristotle; Communism and Socialism; Democracy; Fascism; Greece, Ancient; Liberalism; Machiavelli, Niccolò; Political Thought; Roman Empire

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Greece, Ancient

Ancient Greece, at its peak in the fourth century BCE, fostered Homeric ideals of heroism that inspired writers and philosophers of the classical age to portray the human condition against the world's uncertainties. Greek contributions in science, philosophy, art, literature, religion, and politics thus spread far and wide. European humanists in the fourteenth century revived interest in Greek culture and ideals, which still color contemporary thought.

The civilization of ancient Greece twice effected important changes in world cultural balances, first when Alexander of Macedon (Alexander the Great, 356–323 BCE) conquered a vast empire in western Asia, Egypt, and northwest India, spreading Greek ideas and customs far and wide, and a second time, beginning about 1400 CE, when well-to-do citizens first in Italy and then also in northwestern Europe found that ancient Greek literature provided a useful guide and enrichment for their own lives.

What made Greek patterns of civilization so attractive was that for a few generations a handful of Greek cities mobilized intense and widespread popular participation in politics and war, while also combining monumental public art with market economics. They called this unusual mix “freedom,” and the literary expressions of Greek freedom in poetry, history, and philosophy appealed to intellectually restless citizens in other times and places as both admirable and practical. Freedom continues to figure in contemporary politics, so the Greek example still echoes in our public affairs, though less strongly than it did before 1914, when the study of Greek (and Latin) literature dominated the schooling of Europe’s political leaders

and many of those who supported them. Revival of the Olympic Games in 1896 was a late example of how ancient Greece continued to offer a model for Europeans to emulate, and by now Olympic competition has become worldwide.

The Rise of Ancient Greece

How did ancient Greece achieve its distinctive character? For more than a thousand years after 2000 BCE, when Greek-speaking invaders began to filter in from the north, changes in Greece closely paralleled what was happening elsewhere. The initial invasions, for example, were part of a general expansion of herds-men from the grassy steppes of Eurasia that brought Aryans to India, Persians to Iran, Hittites to Anatolia, and Slavs, Germans, Latins, and Celts to other parts of Europe. The newcomers had the advantage of warlike habits arising from the necessity of protecting their flocks and herds from raiders and from attacking neighbors in retaliation. Moreover, these warrior tribesmen had a superior diet, thanks to the milk and milk products they consumed, making them bigger and stronger than the grain farmers they displaced.

Dry summers prevail in most of Greece and are bad for grass, so the invaders had to depend more on grain farming and to cut back on herding by sending flocks to high mountain pastures in summer. This brought Greek society into line with the contemporary scene in western Asia, where steppe invaders had overrun somewhat larger populations of farmers and the urban centers they supported. Accordingly, by about 1600 BCE, closer encounters with centers of civilization in Crete, Egypt, and western Asia brought familiarity with royal government, bronze weapons

and armor, chariots, writing, and monumental stone construction to Greece. Mycenae became the principal seat of wealth and power, where a massive lion gate and large beehive tombs attest to the greatness of the kings for whom they were built. Rural taxpayers, sometimes conscripted for work on such buildings, together with booty from sea raids along the shores of the Aegean and eastern Mediterranean sustained the kings of Mycenae and rulers of a handful of similar fortress-palaces in other parts of Greece. But chariots as well as bronze weapons and armor were scarce and expensive, so fully equipped warriors remained very few. Hence, about 1200 BCE, when a second wave of Greek-speaking invaders, known as Dorians, armed with comparatively cheap and abundant iron

weapons, advanced from the north, the superior number of their fighting men overwhelmed the old order of society. The newcomers promptly destroyed and abandoned Mycenae and the other palace-fortresses of Greece.

The Homeric Ideal of Individual Heroism

With these invasions, a ruder, more egalitarian age dawned. Writing disappeared, so did monumental building. But bards who recited their poems to the sound of a lyre kept memories of the Mycenaean past at least dimly alive, especially among descendants of pre-Dorian Greek-speakers, known as Ionians. Soon after 700 BCE Homer gave lasting form to this oral



Caryatids, sculpted female figures serving as architectural supports, take the place of a columns or pillars on many ancient Greek buildings.

The unexamined life is not worth living. • **Socrates (469–399 BCE)**

tradition by composing a pair of epic poems. One, the *Iliad*, described a critical episode during a sea raid that Agamemnon, King of Mycenae, perhaps (even probably), led against the city of Troy; its twin, the *Odyssey*, recounted the perilous return of Odysseus from Troy to his home in Ithaca. Homer's poems were soon written down in a new alphabetic script imported (with adjustments) from Phoenicia, and they became fundamental to subsequent Greek assumptions and ideas about how men ought to behave. Homer's heroes seek and attain glory by risking death in war, knowing ahead of time that sooner or later they will be defeated and die. Moreover, according to Homer, the gods play games with men, favoring some, defeating others whimsically; yet the very fact that the gods were immortal meant that they could not be truly heroic by risking life and limb. Instead, according to Homer, they were often merely spiteful and were ultimately subject to Fate—the nature of things—mysteriously spun out in detail by enigmatic, silent supernatural beings. Oddly, therefore, by risking everything, heroic humans surpassed the gods, at least morally, while sharing with them a common subordination to Fate.

This unusual twist diminished the power of priests and conventional religion among the ancient Greeks and opened a path to all sorts of speculation seeking to anatomize Fate and penetrate more deeply into the nature of things, including, ere long, the nature of human society and of morals. No other ancient civilization centered so much on merely human affairs or unleashed human imagination and reasoning from sacred traditions so recklessly. That is why in later times urban populations among whom local versions of sacred doctrine had worn thin from too many encounters with persons of different religious background so often found Greek high culture powerfully attractive.

From Individual to Collective Heroism

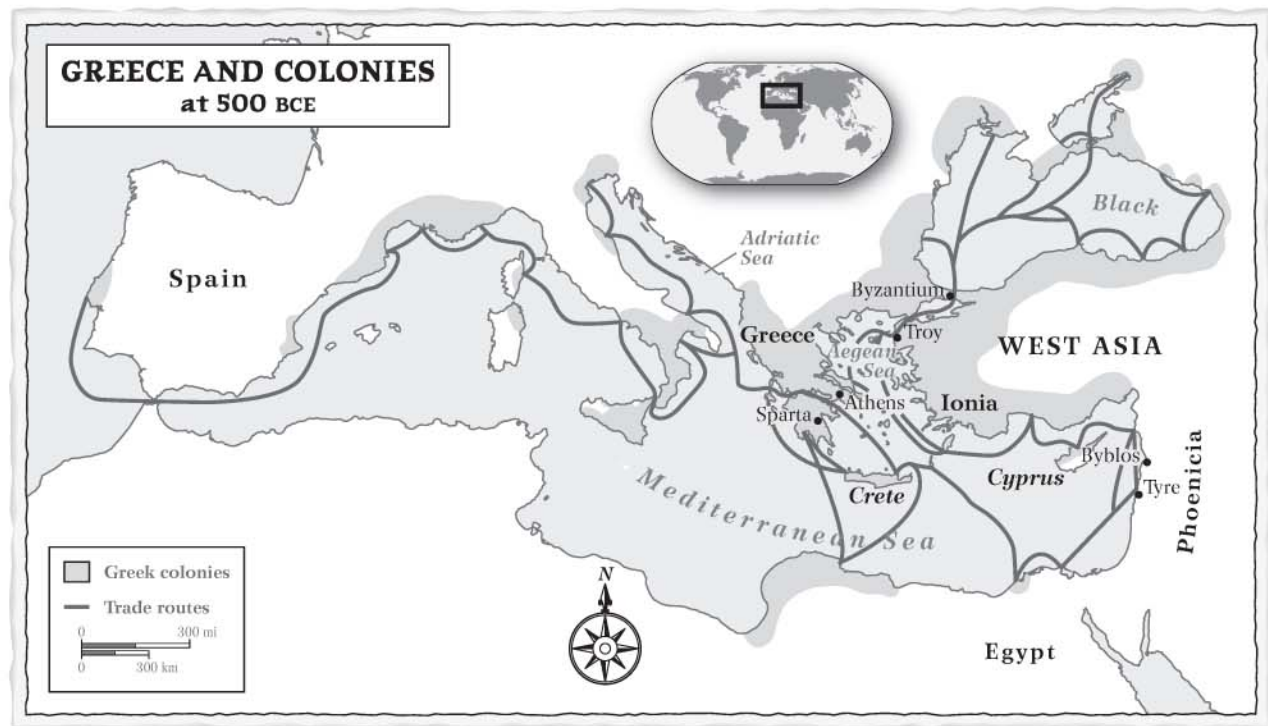
Greek civilization further enhanced its attractiveness when Homeric heroism was transformed from an individual, personal pursuit into collective heroism in defense of small city-states, into which Greece

eventually divided. Greek city-states had their own complex development from older migratory and tribal forms of society. Ionian Greeks, fleeing from Dorian invaders across the Aegean to found new settlements on the coast of modern Turkey, led the way. Kinship ties crumbled among haphazard groups of refugees, who consequently had to improvise new ways of keeping peace and order among themselves. Elected magistrates, holding office for a limited time (usually one year) and administering laws agreed upon by an assembly of male citizens, proved maximally effective. When such self-governing communities began to thrive and, after about 750 BCE, started to found similar new cities in Sicily, southern Italy, and around the shores of the northern Aegean and Black Sea, an enlarged Greek world began to emerge, held together by shipping and trade, a more or less common language and the distinctive public institutions of the polis, to use the Greek term for a locally sovereign city-state.

In Greece proper, the polis supplanted older kinship arrangements much more slowly. In the wake of the Dorian invasions, as people settled down to farm the same fields year after year, local hereditary kings, assisted by councils of noble landowners, began to emerge. They much resembled contemporary local rulers of western Asia. Population growth soon provoked a painful process of differentiation between noble landowners and dependent rent- and tax-paying peasants. This process went unchecked in Asia and quickly led to the emergence of new empires and kingdoms, like the biblical kingdom of David. In Greece, however, for something like three hundred years, a different pattern prevailed.

Greek Military and Economic Power

The critical difference hinged on the emergence of phalanx warfare among the Greeks. Beginning about 650 BCE, well-armored farmers, trained to keep in line so each man's shield helped to protect the man next to him, proved superior to disorganized personal combat of the sort Homer had celebrated. When such men, equipped with spears and swords, arrayed

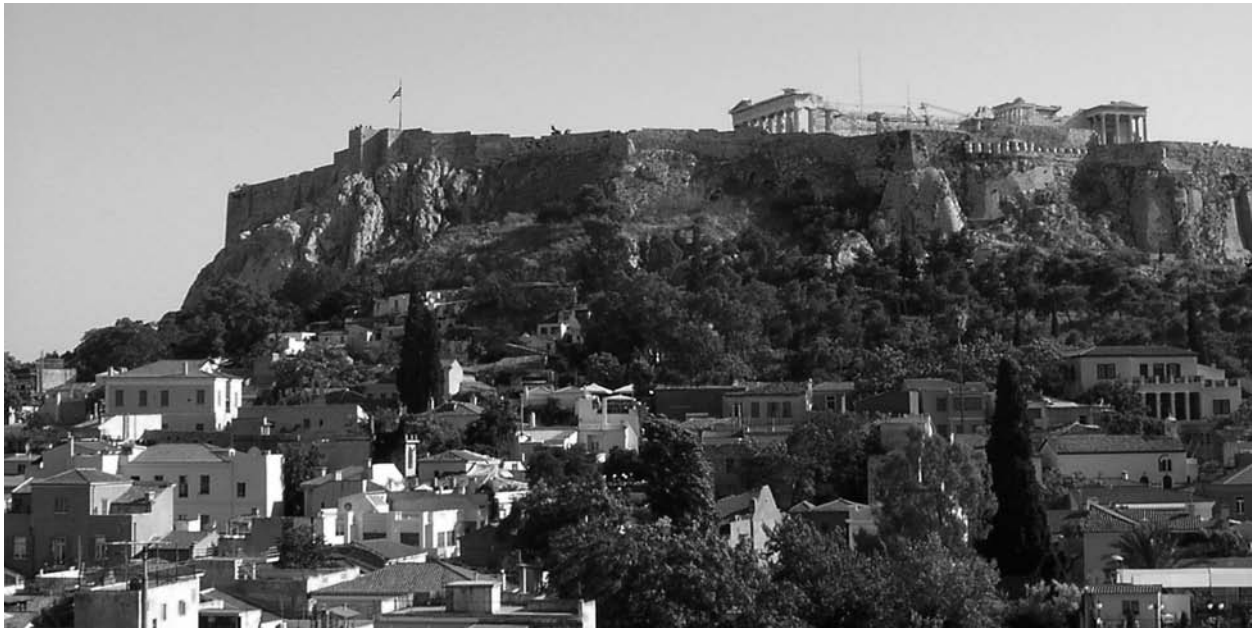


themselves six ranks deep to form what the Greeks called a phalanx, their concerted charge easily swept less disciplined and closely packed opponents before it. Once this simple tactic proved uniformly successful, every Greek city had to maintain and if possible increase the size of its phalanx to be able to protect itself against its neighbors.

Since fighting farmers had to arm themselves for the phalanx with income from the family farm, radical steps were necessary to prevent them from losing their land by going into debt to richer landowners. In Sparta, a (perhaps mythical) lawgiver named Lycurgos (Lycurgus) was credited with setting up a system of military training that required the "equals," as Spartan citizens officially called themselves, to live in barracks between the ages of 20 and 30, practicing military skills and eating together. Family life became correspondingly marginal. Conquered helots in neighboring Messenia supplied the equals with the food they consumed, so Spartan citizens, specialized for war, became an unusual kind of upper class by exploiting the helots collectively. Prolonged military training soon made the Spartan phalanx superior to others, and by 490 BCE Spartans had compelled most other city-states of southern Greece to become their allies.

Athens, the other city whose internal history mattered most in later times, never attained internal

stability to compare with Sparta's under the Lycourgan constitution. In 594 BCE, for example, Solon, after being elected chief magistrate with extraordinary powers, set out to check the decay of the Athenian phalanx by canceling debts and prohibiting debt slavery. But Solon's efforts to invoke justice and "good law" did not make friction between rich and poor disappear. Half a century later a noble usurper, Peisistratus, seized power by force of arms and with popular support, then exiled his rivals so that his sons retained control until 510 BCE. Two years after their forcible overthrow, another nobleman, Cleisthenes, instituted a more democratic regime in Athens. Rivalry between democratic Athens and Sparta's mix of radical equality among a citizen elite and harsh repression of disfranchised helots became overt only after the Persian invasion (490–489 BCE), when a precarious alliance of about twenty Greek cities, led by Sparta, managed to defeat the imperial army of perhaps sixty thousand men that Xerxes I, king of Persia and ruler of the largest empire Asia had yet seen, led against them. This surprising victory proved to the historian Herodotus (d. c. 425 BCE) that free men, obedient to law, fought willingly and therefore better than unfree Persians subjected to a king. More generally, the victory gave an enormous fillip to Greek self-confidence and inaugurated what in retrospect



The Acropolis, with the Parthenon at the top, is perhaps the best-known symbol of ancient Greece.

seemed a golden age of creativity, concentrated especially in Athens.

At the time, however, uncertainty and divided councils prevailed and ceaseless warfare continued to disturb civil society. Those who lived through that tumult would surely be surprised to know how reverently later generations looked up to their accomplishments. For in Athens, self-government by elected magistrates and an assembly in which all citizens could vote provoked perpetual dispute, and war mobilization required ever increasing effort. New thoughts and new dilemmas distracted people in private and public life, while sculpture, architecture, drama, history and philosophy all attained what later generations recognized as classical expression.

This remarkable efflorescence of Greek, and especially of Athenian, civilization was sustained by an expanding market economy. Greek cities began to mint silver, copper, and even iron coins in small denominations, so everyone could buy and sell items of common consumption. Expanding markets, in turn, allowed specialized producers to achieve new levels of efficiency, thus enriching society at large. The most significant of these was specialized farming of olives (for oil) and of grapes (for wine). Beginning not long before 600 BCE, production of wine and oil for sale spread ever more widely through southern and central Greece, wherever climate and soil allowed. That

was because olive oil and wine commanded a ready market throughout the Mediterranean and Black Sea coastlands, where barbarian chieftains mobilized local peoples to supply grain, fish, timber, and other raw materials in exchange for the wine and oil they desired. For a long time terms of trade strongly favored the Greeks, so that the yield from an acre of land under vines or olive trees could be exchanged for far more grain than the same land in Greece could produce. As a result, throughout the classical age commercially specialized farming in Greece sustained free and more or less equal citizens far more comfortably (and in larger numbers) than could have been done by raising their own grain locally. In western Asia cities drew grain from their immediate hinterlands in the form of unrequited rents and taxes, but in Greece ships allowed cities to draw grain and other resources from far greater distances, in return for the oil and wine their farmer-citizens brought to market each year.

Export of specialized artisan products—decorated Greek vases for example—supplemented this fundamental agricultural and raw-materials pattern of exchange. Artisans, too, specialized and rapidly improved the quality and quantity of their output. Thus, for a few generations, increasing wealth and skill concentrated in a few commercial cities, of which Athens was the most active. Eventually, when farmers

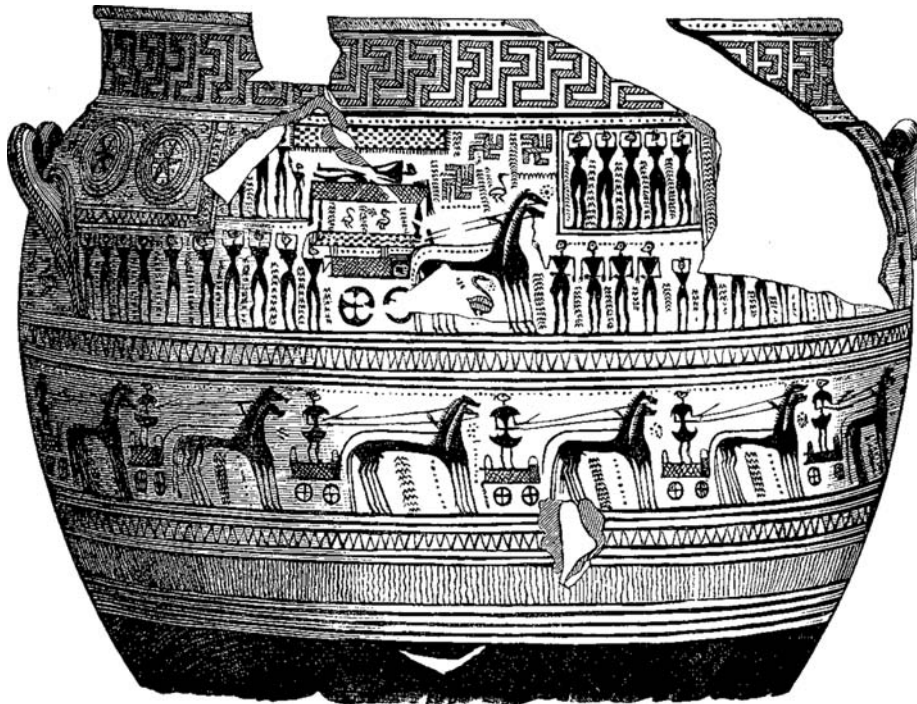
in other parts of the Mediterranean learned how to raise olives and vines, Greeks lost their initial advantage. Greek rural prosperity waned correspondingly, and the expansive buoyancy of the classical age, when Greek population and wealth grew steadily, soon faded away. Yet it was political contradictions inherent in polis ideals of heroism and justice that brought an abrupt end to the Greek classical age in 338 BCE, when a semibarbarian conqueror, Philip of Macedon, deprived Greek cities of their cherished freedom. Until then, Greek freedom triumphed on every front, restlessly, ruthlessly, amazingly.

Athens Ascendant

Immediately after their victory over the Persians, Athens and Sparta went their separate ways. Athens had played a conspicuously heroic part in the Persian War. When Xerxes overran their city, Athenians fled to the island of Salamis nearby and refused to surrender. Athenian triremes (the specialized Greek fighting ship that relied on rams, affixed to the ships' prows, to sink enemy ships) then helped to defeat the Persian

fleet in the straits separating Salamis from the Attic mainland (480 BCE), compelling Xerxes to withdraw from Greece with most of his army before the Persian remnant suffered final defeat at Plataea the next year. Thereupon, the Athenians chose to keep their fleet in action and continued the war by sending naval expeditions to liberate Greek cities from Persian rule around the shores of the Aegean and beyond. Peace did not come until 448 BCE, by which time Athens had built an empire, first freeing cities from the Persians and then taxing them to help support the Athenian fleet that "liberated" them. Spartans at first held back, fearful of helot revolt at home and dismayed by the sudden surge of Athenian power.

Within Athens, the fleet's annual campaigns swiftly altered internal balances. Citizens whose surplus younger sons lacked enough land to be able to buy armor and serve in the phalanx now had an attractive way to make ends meet by rowing in the fleet for a small wage, supplemented every so often by hauls of booty. In winter, when the fleet went ashore and stayed home, they were free to attend meetings of the assembly, whereas farmers, scattered across Attica,



Ancient Greek vase painting often depict mythological characters, divine and human.

only attended when an unusual crisis arose. This gave a decisive advantage to property-less citizens and assured continuation of the aggressive overseas ventures upon which they had come to depend for a living. For a couple of generations, farmers served contentedly in the phalanx in summer when there was no work to be done in the fields, while a few wealthy aristocrats went along with the democracy, playing their own specialized part by refraining from conspicuous consumption in private life and competing instead for the honor of using their wealth for various public purposes, like equipping a trireme or financing one of the tragic performances that honored the god Dionysos (Dionysus).

Despite rapid population growth, Athenian citizens remained comparatively few. War losses were substantial, and about a dozen colonies, dispatched to consolidate their emerging empire, also removed several thousand landless citizens. At the city's maximum, in 431 BCE, adult male citizens numbered somewhere between 35,000 and 50,000, of whom as many as 20,000 drew salaries from the state for rowing in the fleet and for other forms of public service, such as serving on juries in the law courts. The total population of Attica was probably between 250,000 and 350,000 persons, almost half of whom were disfranchised foreigners and slaves. So as in Sparta, many though not all Athenian citizens had become militarized "equals," disciplined to row and maneuver their triremes more swiftly and accurately than others, just as years of training allowed Spartan soldiers to prevail on land.

While the Athenian democracy thus concentrated on warfare, trade and artisan work fell mainly into the hands of resident foreigners. Slaves, too, played an important economic role as miners of newly discovered veins of silver ore in Attica. Silver from those mines financed the two hundred Athenian triremes that fought at Salamis; the mines also supplied silver for the Attic drachmae that soon became a standard currency throughout most of the Mediterranean coastlands.

Athens's combination of economic and military power, based on oil and wine exports, other far-

ranging market exchanges, and the personal participation in war by farmer-soldiers in the phalanx and landless rowers in the fleet, was unmatched elsewhere. Athenian polis-wide collaboration always remained somewhat precarious, but under Pericles, who dominated the city's politics between 445 and 429 BCE, the Athenians indeed converted Homeric individual heroism into collective heroism on behalf of their polis. Rich and poor alike pursued honor more than personal gain, and their willing cooperation brought unusual success.

Yet that success was profoundly ambiguous, since victorious Athenians became collective tyrants, suppressing the freedom of others. Accordingly, most Greeks (including some Athenians) came to feel that Athenian democratic and imperial policies were profoundly unjust. Invoking the "freedom of the Greeks" against unjust tyrants, whether home grown or coming from abroad, became and remained a heartfelt protest, long after the enlarged scale of war had made the freedom of separate cities unsustainable.

The Peloponnesian Wars and the Coming of Philip

Sparta, where collective heroism dated back to Lyncourgos, soon took the lead in challenging the emerging Athenian Empire. Two bouts of war ensued. The first, waged on and off between 460 and 445 BCE, turned out to be a draw; but the next Peloponnesian War (431–404 BCE), as the Athenian historian Thucydides called it, ended in the overthrow of Athenian Empire and democracy. Yet the victorious Spartans were compromised from the start, as they prevailed only after accepting Persian money to finance the creation of the mercenary fleet they needed to defeat the Athenians at sea. The scale and intensity of these struggles altered Greek society very rapidly. Fighting became professionalized and commercialized; both Athens and Sparta hired troops and sailors from outside the polis to supplement armies and navies of citizens. Within Athens, rich and poor parted company when conspirators twice (411 and 404 BCE) overthrew the democracy. To be sure, democracy was soon restored in Athens, at

least in form; but the solidarity between rich and poor in pursuit of collective greatness never came back. Instead, independent farmer-citizen-soldiers gave way to mercenaries, while Athens, and Greek society everywhere, divided more and more sharply between landowners and dependent tillers of the soil.

Simultaneously, commercial prosperity subsided as the Greeks lost their primacy in producing oil and wine for overseas markets. Politics changed to match, allowing larger landed property holders to monopolize what long remained vivacious political struggles among themselves at home and with neighboring cities. After 404 BCE, the victorious Spartans quickly became even more unpopular than Athenians had been, before meeting defeat in 371 BCE by the Thebans, who were in turn overthrown by Philip of Macedon in 338 BCE. To keep the peace, Philip made himself commander-in-chief of a Hellenic league of cities. His son, Alexander, after ruthlessly suppressing a revolt, led a combined Macedonian and Greek army against the Persians in 334 BCE. His victories brought the Persian Empire to an end, and after his death in 323 BCE, Macedonian generals set up kingdoms of their own in Egypt, Asia, and Macedon. Greek cities nominally regained their freedom but in fact remained bit players in continuing great power struggles until 31 BCE, when the Romans unified the entire Mediterranean coastline and its hinterlands in a more lasting empire.

Ancient Greek Culture and its Legacy

Long before 31 BCE, Athenian art and literature of the classical age, 480 to 338 BCE, had become familiar to wealthy Greeks everywhere. Precisely because the freedom of the polis was slipping away from their grasp, they cherished the Athenian literary heritage for showing how free men ought to conduct their affairs and lead a good life. Later on, Romans, too, shared a similar nostalgia, for their republican liberty was also a casualty of empire. Accordingly, Roman art and literature borrowed themes and ideas from their Greek predecessors, and the resulting amalgam was what, almost fourteen hundred years later, inspired

Italian and other European humanists to revive ancient glories by teaching the young to read, admire, and emulate Greek and Roman literature and art.

The power and complexity of Greek thought, and its concentration in Athens between 490 and 338 BCE, remains amazing. Reason, imagination, doubt, hope, and fear all play their part in classical Greek literary exploration of the human condition. Fate, gods, and men interact, surprisingly, often inscrutably. Above all, classical Greek writers remained in thrall to Homer, portraying human beings heroically confronting the world's uncertainties. Greek sculptors also portrayed both men and gods in heroic human form, and attained greater visual accuracy than art traditions of Asia or elsewhere had done before. Greek monumental architecture remained simple, featuring columnar façades and straight geometrical rooflines. But subtle curvature and proportion please modern eyes as much as they presumably did when first constructed. In later centuries, classical Greek styles of sculpture and architecture spread widely across Europe and Asia; they still affect many of our public buildings.

Greek Religion

Yet there was more to the Greek cultural heritage than visual art, civic solidarity, and collective heroism. Rational argument, science, and philosophy burgeoned as well, rivaling traditional religious ritual and belief. This aspect of Greek society reflected the fact that religion in Greece had become a hodgepodge by the time written texts allow us to know anything about it. Ancient and secret fertility cults, like the one at Eleusis, promised eternal life to initiates. Such mysteries fitted awkwardly with Homer's quarrelsome gods, living on top of Mount Olympus. In addition, Greeks engaged in ecstatic worship of Dionysos, god of wine, sought cures from Aesclepius (Asclepius) through dreams, and inquired about the future from oracles like that at Delphi, where fumes from the earth intoxicated the Pythia, making her babble in ways that priestly experts interpreted for inquiring visitors. The Greeks also honored the gods



by stripping themselves naked to compete in athletic contests at Olympia and elsewhere at special festivals. This shocked others, but became a distinctive trait of Hellenism as it spread across western Asia in the wake of Alexander's armies, rooting itself in new Greek-style cities founded by discharged veterans.

Greek Philosophy

Nothing resembling a coherent worldview emerged from such confusion, and when Greeks began to buy and sell overseas, they encountered an even greater confusion of religious ideas and practices in Egypt, Asia, and more northerly lands. Polis magistrates could and did reconcile the irreconcilable in ritual fashion by sustaining traditional rites and in some cases elaborating on them, as happened in Athens with the development of dramatic festivals honoring Dionysos. Athenian playwrights, notably Aeschylus, Euripides, and Sophocles, used drama to explore moral and political issues. Although they advocated civic institutions like justice and moral courage as healthy alternatives to the violent uncertainties of human life, they never came near to making the world as a whole make sense. That was left to a handful of philosophers, who, beginning in Ionia with Thales of Miletus (d. c. 546 BCE), took the radical step of disregarding gods and spirits, surmising instead that just as men in the polis regulated their lives by invisible binding laws, nature too perhaps obeyed its own natural laws. Thales for example—perhaps drawing on Mesopotamian creation myths—said that everything came from water by rarification and condensation, with the difference that gods were erased, leaving water and other elements (earth, air, and fire) to behave lawfully. Others pursued this leap in the dark in different directions, proposing some notions that were destined to future significance, like the atomic theory of matter. Mathematics had special attraction for early Greek philosophers since geometrical demonstrations were logically certain and seemed universally true. Here, perhaps, was a model for natural law in general, of which polis law itself was only an instance. Pythagoras of Samos (d. c. 500 BCE) carried

such ideas to an extreme. He founded a secret brotherhood that was soon forcibly dispersed, and taught that the world was made of numbers and that studying their harmonies might permit human souls to survive death through reincarnation. Only fragments remain from the sayings and writings of Pythagoras and other early Greek philosophers, so modern understanding of their efforts to make the world make sense remain very uncertain and imperfect.

Philosophical discussion turned increasingly to human affairs, with the intense controversies surrounding the rise of democracy. Not surprisingly, Athens became the principal center of debate. A school of sophists made their living by preparing young men for political careers, teaching them how to argue a case—any case—convincingly. Some sophists taught that right and wrong were merely human inventions. That in turn provoked others, of whom Socrates (d. 399 BCE) was the most influential, to argue that right and wrong, truth, beauty, honor, justice, and all the other ideas that citizens held dear, were unchanging and rooted in the nature of things, though Socrates was more successful in refuting those who disagreed with him than in explaining his own beliefs. Socrates wrote nothing, but his pupil Plato (d. 347 BCE) pursued the same effort by writing a long series of dialogues that survive for our inspection and continuing delight. Plato wanted to believe in a world of unchanging immaterial ideas that somehow guaranteed truth; but, to judge by his later dialogues, never entirely convinced himself that such a world existed. Nevertheless, Plato's dialogues raised questions for subsequent philosophers to examine endlessly. In addition, by founding the Academy, where young men gathered for advanced study and debate, Plato set up a lasting institutional framework for ancient philosophy. His pupil, Aristotle (384–322 BCE), codified the rules of logic, and his other writings offered plausible answers to almost everything else his predecessors had argued about. Subsequent Greek and Roman philosophers continued to disagree until the Christian Emperor Justinian forcibly disbanded the Academy in 529 CE. All the same, pagan philosophers' ideas provided an educated upper class of citizens in Hellenistic and

Roman times with ready answers to a wide range of personal and scientific questions, independent of any sort of religious authority.

This body of learning—secular, rational, argumentative and complex—rivalled (and also suffused) later religious worldviews. It ranks among the most significant heritages passed on from Greek antiquity, for in later centuries Greek philosophy and natural science took on new life among both Muslims and Christians, and still colors contemporary thought.

In sum, science, philosophy, art, literature, war and politics throughout the world are still influenced by our complex and tangled heritage from ancient Greece.

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See also Alexander the Great; Aristotle; Art—Ancient Greece and Rome; Herodotus; Homer; Macedonian Empire; Plato; Thucydides; Trading Patterns, Mediterranean

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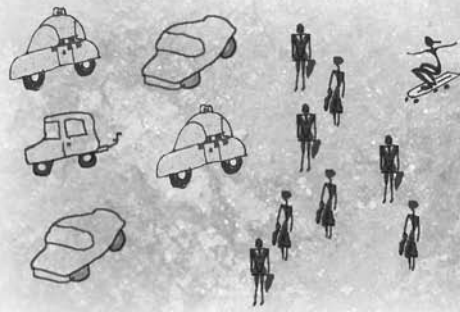
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Green Revolution

The successful development of higher-yielding hybrid strains of corn and wheat (“miracle seeds”) in the early 1960s led to the controversial Green Revolution: big businesses and governments see it as a breakthrough in agriculture and food safety, while small farmers and ecologists see it as ruining the environment, destroying agricultural productivity, obliterating indigenous cultural and agricultural practices, and creating even greater global inequalities.

William Gaud, director of the U.S. Agency for International Development (USAID), coined the term *Green Revolution* in March 1968, and its origins help explain its contested meaning in contemporary history: government development agencies as well as transnational chemical and biotechnology corporations and multilateral organizations such as the World Bank see the Green Revolution (GR) as a miraculous breakthrough in agricultural productivity and food security, whereas small farmers, ecologists, social scientists, indigenous peoples, and community activists see it as ruining the environment, destroying agricultural productivity, obliterating indigenous cultural and agricultural practices, and creating even greater global inequalities through excessive debt burdens for the developing world that further enrich the developed world. How did the Green Revolution give rise to such polarized reactions and assessments? Part of the answer lies in the fact that the Green Revolution, as an application of modern science and technology to agriculture, has never been about just the superiority of one agricultural technology or practice over others—it has been a political, economic, and social event from the start, and so one cannot

be surprised that it has attracted controversy. Part of the answer also lies in how one assesses where and to whom the major benefits of this agricultural revolution went, that is, did they reach the intended recipients?

Definition

The basic elements of the Green Revolution are highly mechanized and energy-intensive production methods (e.g., the use of tractors and mechanical harvesters); a dependence on the intensive use of chemical or synthetic fertilizers, pesticides, and fungicides; a reliance on petroleum-powered machinery and petroleum by-products; the utilization of high-yielding hybrid seeds; uniform planting of one crop species over a large acreage (monoculture); double cropping (two crop seasons per year); large-scale irrigation; and a continuous supply of patented technology and inputs (seeds, fertilizers, pesticides, etc.). The goal was to increase the capacity of plants to use sunlight, water, and soil nutrients more efficiently, and the heart of this revolution in agriculture was the development of certain varieties of patented seeds that fit the requirements of Green Revolution technologies.

Origins

Although its antecedents date to earlier genetic research, the Green Revolution as we know it today began with research conducted in Mexico by U.S. scientists in a wheat and maize research center sponsored by the Rockefeller Foundation during the 1940s and 1950s. Their goal was to develop higher-yielding hybrid strains of corn and wheat.



The remains of the Union Carbide pesticide plant after the 1984 disaster in the city of Bhopal, Madhya Pradesh, India. Photo by Luca Frediani.

The most important person in initiating the Green Revolution in northwestern Mexico was the plant pathologist and geneticist Norman Borlaug. His wheat strains responded well to heavy doses of nitrogen fertilizer and water; the International Center for Wheat and Maize Improvement, established in 1966 by the Rockefeller Foundation in cooperation with the Mexican government, continued his work. With the help of money from the Ford and Rockefeller Foundations, the United Nations Food and Agricultural Organization, and USAID, “miracle seed” spread outside Mexico after 1963 and had its greatest success in an area from Turkey to northern India. The Rockefeller Foundation also sponsored a rice research center, the International Rice Research Institute, in the Philippines in 1960. The institute created high-yield dwarf rice varieties of “miracle rice” that spread to the rice-growing areas of east and southeastern Asia. Researchers at these and private corporate research centers selectively bred high-yielding strains of staple crops, mainly wheat, maize, and rice with sturdy stalks, which were responsive to chemical fertilizers and irrigation water, resistant to pests, and compatible with mechanical harvesting.

Chemical and seed corporations and government officials in developed and developing countries championed the Green Revolution as the solution to problems of famine and malnutrition around

the world. More was involved, however: Excluding Mexico, the U.S.-sponsored enterprise encircled the Communist world from Turkey to Korea. Although fears of the spread of Communism motivated U.S. politicians and businesspeople, the idea of scientifically designed crops to improve living standards was also promoted within socialist societies from the Soviet Union to China to Cuba. In many ways the Green Revolution started as an economic wing of Cold War politics.

Positive Results

The incubation of the Green Revolution occurred during the 1950s and 1960s, and it dramatically altered food production during the 1970s and 1980s. In 1970 around 15 percent of the Third World’s wheat- and rice-growing areas were cultivated with the new hybrid seeds. By 1983 the figure was more than 50 percent, and by 1991 it was 75 percent. Proponents argue that more than half of all economic benefits generated by GR technologies have gone to farmers and that plentiful harvests became commonplace in much of the world during the thirty-five years after 1960: Crop yields of wheat nearly tripled, those of rice nearly doubled, and those of corn more than doubled in ninety-three countries. Because of high-yield rice and wheat, scores of countries kept food production ahead of population growth.



The Green Revolution promised agricultural plenty and prosperity. Photo by Joan Lebold Cohen.

Learning from the mistakes of its first applications, newer GR technologies promised increased net returns and reduced chemical loads for farmers. The Green Revolution was most successful in India in increasing aggregate food production: During 1978 and 1979 India established a record grain output of 118 million metric tons and increased its grain yield per unit of farmland by 30 percent since 1947. India has not had a famine since 1965–1966. However, no other country that attempted the Green Revolution matched India's success or the number of jobs in auxiliary facilities such as chemical factories and hydroelectric power stations.

Proponents such as Martina McGloughlin point out that GR technologies create more food for sale, increase foreign exchange and national income, and generate a steady income source for successful growers as well as new nonagricultural jobs. Proponents do not believe that the adoption of biotechnology crops is creating genetic uniformity or inducing vulnerability to new strains of pathogens. They assert that GR technologies are size neutral and can promote sustainable agriculture centered on small farmers in developing countries. Despite such claims, the Green Revolution has promoted monoculture worldwide because each hybrid seed crop has specific fertilizer and pesticide requirements for maximum growth: Farmers save money by buying seed, fertilizer, and pesticide in bulk and by planting and tending the same crop uniformly on their land.

Negative Outcomes

The picture is not all rosy, however. Despite claims by proponents, monoculture did make crops more susceptible to infestations and damage by a single pest. When farmers turned to heavier doses of petroleum-based pesticides, the more-resistant pests survived, and their offspring returned the next year to cause even greater losses. Famous cases of such resistance are the southern corn leaf blight in 1970 and 1971 in the United States; the brown planthopper, which attacked the various strains of “miracle rice” during the 1970s and 1980s in the Philippines, Sri Lanka, Solomon Islands, Thailand, India, Indonesia, and Malaysia and in Thailand, Malaysia, and Bangladesh again in 1990; and the recent potato blight in the Andes. Millions of people, mostly agricultural workers, suffer from acute pesticide poisoning, and tens of thousands die every year from it. The horrific explosion at Union Carbide's Bhopal, India, plant on 2 December 1984 killed an estimated 3,000 people and injured 200,000 more. The chemical Sevin manufactured at Bhopal was essential for India's Green Revolution. In addition, ever-rising doses of pesticides have meant that they ended up in water supplies, animal and human tissues, and soil with often unforeseen consequences. Along the Costa Rican coast 90 percent of the coral reefs are dead due to pesticide run off from plantations that monocrop bananas for export and that have ruined 80,000 hectares of former banana plantation



land with copper residues from pesticides so that the land can no longer be used to grow food for either domestic consumption or export. Costa Rica now imports basic staple grains: beans, corn, and rice.

The irrigation required by the Green Revolution has led to massive dam-building projects in China, India, Mexico and elsewhere, displaced tens of thousands of indigenous peoples, and submerged their farmland. The frequent result of massive irrigation has been the creation of soil with a high salt content that even large doses of fertilizer cannot repair. Critics have documented the reduction in species diversity that followed the Green Revolution. Rice, wheat, and maize have come to dominate global agriculture: They supply 66 percent of the world's entire seed crop. They have edged out leafy vegetables and other food crops that do not respond to nitrogen- and water-rich farming regimes. Critics note that human beings cultivated more than three thousand plant species as food sources before the Green Revolution, whereas today fifteen species (among them rice, corn, wheat, potato, cassava, the common bean, soybean, peanut, coconut, and banana) provide more than 85 percent of all human nutrition.

The energy requirements for this agriculture are high: In what Southern Illinois University professor of anthropology Ernest Schusky has dubbed the "neo-caloric revolution" GR agriculture is one-half as energy efficient as ox-and-plow agriculture and one-quarter as energy efficient as hoe agriculture. The model of GR agriculture, U.S. grain farming, is remarkably energy inefficient: It consumes eight calories of energy for every one calorie it produces. For critics thirty years of the Green Revolution have left a legacy of environmental degradation, unsustainable agricultural practices, social disruption, homeless farmers, ruined farmland, crushing international debt burdens for developing countries, and the export of needed food to meet loan payments.

A Mixed Legacy

Opponents and proponents alike admit that the benefits of the Green Revolution are unevenly spread.

Wealthier farmers with dependable access to water and credit prospered, whereas those farmers who skimmed on fertilizer and irrigation because of the extra costs did not do well, and their yields were no greater than before. Agrochemical industries, banks, large petrochemical companies, manufacturers of agricultural machinery, dam builders and large landowners have been major beneficiaries. The social results in the United States and elsewhere have been a reduction in the number of small family farms, the concentration of agricultural wealth in fewer hands, growing social inequality, and migration to cities. In the case of Taiwan, South Korea, and Indonesia, producing more food with fewer people and the exodus of people to cities helped fuel industrialization. In other countries it merely increased the urban slum-dwelling poor. Internationally, South Korea, China, India, and Mexico reduced or eliminated food dependence, and India became a net food exporter. Other nations did not fare so well: Until 1981 the developing world was a net exporter of food; after 1981 it was a net importer.

Although India is the Green Revolution success story, its Punjab region has experienced all of the revolution's negative ecological and social consequences, and Indian children are suffering from a vitamin A deficiency that is causing blindness in forty thousand children a year. Enthusiasts of the new "Gene Revolution" report that scientists are genetically altering rice so that it contains beta-carotene, which enzymes in the intestine convert to vitamin A when needed. Critics argue that vitamin A deficiency is best seen as a symptom of broader dietary deficiencies caused by a change from diverse cropping systems to rice monoculture: Indian children have vitamin A deficiency because their diet has been reduced to rice and little else. Under a mixed agricultural regime, Indian farmers grew *brathua*, a traditional plant rich in vitamin A, along with their wheat, but in GR monocultures *brathua* is regarded as a pest and is destroyed with herbicides.

In reaction to the myriad problems caused by the Green Revolution, an alternative agriculture called "LISA" (low-input sustainable agriculture) emerged

in the United States, Cuba, western Europe, and elsewhere in the late 1980s (in 1990, in the United States, it was renamed Sustainable Agriculture Research and Education Program [SARE]). It sought to promote ecological sustainability in farm production by replacing dependence on heavy farm machinery and chemical inputs with animal traction, crop and pasture rotations, soil conservation, organic soil amendments, biological pest control, and microbial biofertilizers and biopesticides that are not toxic to humans. A carefully watched experiment with LISA occurred in Cuba, where the end of Soviet pesticide and petroleum subsidies in 1991 led to the collapse of GR-based food production and near famine from 1991 to 1995. In 1993 the Cuban government began breaking up large state farms, changed land tenure toward cooperatives, and replaced the Soviet Green Revolution model with the LISA model on a national scale. Food production rose slowly from its low in 1995 to approach its old levels by 2005, and continues to rise. A contributing factor is the cooperative system (as of the 2008, the state owns about 65 percent of all tilled land; the cooperatives comprise 35 percent but produce 60 percent of all Cuba's agricultural crops).

Implications and Directions

The Green Revolution has fervent admirers and detractors. Admirers who wish to mitigate its worst effects are promoting the Gene Revolution, which combines specific genes (and their desirable traits) among unrelated species to yield plants with novel traits that cannot be produced by farmers practicing traditional breeding. The result is the engineering of "transgenic" crops such as rice with beta-carotene or plants that produce pesticides to protect themselves or vaccines against malaria and cholera. Those people who promote LISA endorse agroecology, which entails grassroots efforts by small farmers and scientists to meld traditional and modern farming methods, to reduce pesticide and chemical fertilizer use, to select natural seed varieties suited to different soils and climates, to end monoculture and export orientation,

and to use science to enhance natural ecological systems of agricultural production and protection. The choices that people make in the first decades of the twenty-first century will shape not only the kinds and amounts of foods that people will have available to eat but also the ecological health of the planet itself.

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See also Agricultural Societies; Environmental Movements

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The destiny of world civilization depends on providing a decent standard of living for all mankind. • **Norman Borlaug (1914–2009)**

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Born circa 1020 and baptized as Hildebrand, Pope Gregory VII served six popes before he himself was elected in 1073. His main theological concerns focused on the superiority of church over state and a pope's right to be the final arbiter of all significant church disputes. He was beatified in 1584 and canonized as Pope Saint Gregory VII in 1728.

Pope Gregory VII, whose baptized name was Hildebrand, is considered to be one of the most influential popes in the history of the Roman Catholic Church and in European history.

Although his early life remains a mystery, his origins were quite humble. At a very young age, Hildebrand was sent to be educated at a Cluniac monastery in Rome. As a Benedictine monk, he entered the service of the future pope Gregory VI and later served as his chaplain. Prior to his own selection as pope, Hildebrand served six different pontiffs, rising in power and prestige during this time. His remarkable talents as administrator would later define his role as head of the Roman Catholic Church. Two central themes dominate Hildebrand's theological mind-set: the superiority of church to state, and all significant church matters of dispute were to be resolved by the papacy. In light of these positions, his papacy was dominated by conflict from both within and without the church.

After the death of Pope Alexander II (1073), Hildebrand was acclaimed the new pontiff. Consecrated in 1073 as Gregory VII, Hildebrand honored the memory and legacy of his earliest patron, Gregory VI. Gregory VII took the helm of the Catholic Church at a time when it was undergoing one of its most

devastating periods of moral decay. His resolve of moral character allowed him to attempt reforms within the church and battle its most significant problems: the buying and selling of sacred offices (simony), clerical incontinency, and lay investiture. Another issue of concern for the reforming pontiff was an effort to free the eastern Christians from the Seljuk Turks.



Federico Zuccari, *Pope Gregory VII absolving Emperor Henry IV*. The emperor supposedly stood barefoot in the snow for three days, begging the pope's forgiveness.

In response to a letter (1073) to the pope from the Byzantine emperor Michael VII (reigned 1068–1078), Gregory VII wrote to the European monarchs and princes urging them to rally support for the defense of the Christian East. This call, however, met with indifference and opposition.

In his efforts to reform the church and restore its integrity, the pontiff deposed (1074) a number of bishops who had bought their offices. That same year he issued a papal encyclical that absolved people from their obedience to local bishops who allowed their clergy to marry. In 1075 he ordered the abolishment of lay investitures. Finally, he affirmed Gregory VI's spiritual sovereignty over monarchs. In his efforts to reform the church, Gregory VII was met with a storm of opposition. He was opposed not only by laymen but by the clergy, especially by the bishops. Eventually, Gregory VII waged a fierce battle against his chief rival, Holy Roman Emperor Henry IV (1050–1106).

The conflict between the pope and emperor, known as the Investiture Controversy (1075–1122), was primarily a dispute over whether the imperial or the papal power was to be supreme in Christian Europe. The current phase of the controversy culminated in both Henry IV and Gregory VII excommunicating each other. During Gregory VII's trip to Augsburg to depose Henry IV and select a new emperor, he was met at the Castle of Canossa by Henry IV, who supposedly stood barefoot in the snow for three days begging the pope's forgiveness. Although the matter was resolved temporarily, subsequent disputes between the two leaders would lead Henry IV

to march on Rome and force the pope to flee and take refuge.

Pope Gregory VII died at Salerno on 25 May 1085. Prior to death, Gregory VII absolved all whom he had excommunicated with the exception of Henry IV and the antipope Guibert. According to religious history accounts, the pontiff's final words were "I have loved justice and hated iniquity; therefore I die in exile." His body was interred in the Church of Saint Matthew in Salerno. Hildebrand was beatified in 1584, and canonized as Pope Saint Gregory VII by Pope Benedict XIII in 1728.

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See also Roman Catholicism

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Guevara, Che

(1928–1967)

LATIN AMERICAN REVOLUTIONARY

The Argentine-born revolutionary Ernesto “Che” Guevara is renowned worldwide for his commitment to international social justice during the mid-twentieth century. Although he was both hated and loved for the guerilla warfare tactics he advocated in Cuba, the Congo, and Bolivia, his writings continue to offer insight into world history from the perspective of an internationalist, rather than one committed to a nation-state.

Ernesto “Che” Guevara’s image is known worldwide, appropriated globally by people identifying with his sense of social justice, idealism, and rebellion. An Argentine who fought for independence in Cuba, the Congo, and Bolivia, Guevara represents a stateless “new man” committed to international socialism. His published critiques of capitalism and imperialism reflected an understanding that both the problems and solutions of the twentieth century were global in scope.

Born in Rosario, Argentina in 1928, Guevara was homeschooled until he was nine years old due to severe asthma. All his life Guevara read voraciously and by adulthood was knowledgeable on subjects that included literature, Latin American and Spanish poetry, French existentialist philosophy, Marxism-Leninism, psychology, and archaeology. In December 1952, Guevara took an eight-month break from medical school to travel to South America with a friend. He witnessed the general condition of indigenous peoples throughout South America and was particularly moved by the working conditions of copper miners in Chile. He attributed Latin America’s

economic problems to heavy penetration by foreign corporations.

After graduating in 1953, Guevara continued traveling, winding up in Guatemala City where President Jacobo Arbenz was challenging the U.S.-owned United Fruit Company’s claim to Guatemala’s fertile land. Here Guevara met Hilda Gadea, a Peruvian activist who introduced Guevara to the ideas of Mao Zedong. Together they watched the 1954 CIA-sponsored coup overthrow Arbenz, plunging Guatemala into more than four decades of political violence. The coup solidified Guevara’s belief that Latin America’s major problem in the 1950s was “Yankee imperialism,” which he understood as the combined political, military, and economic power that U.S. policy makers and corporations and their local collaborators held over the region’s economy. It also persuaded him that armed revolution would be required to fix the problem in most of Latin America.

Guevara and Gadea parted ways, seeking the protection of their respective national embassies; by coincidence, they reunited in Mexico City and married. It was here that Guevara met Fidel Castro (b. 1926), who had led a failed effort in Cuba to overthrow the dictatorship of Fulgencio Batista in 1953. After serving less than two years in prison, Castro and other Cuban exiles were regrouping in Mexico City. Castro and Guevara connected immediately. The Cubans shared Guevara’s concern for the power wielded over Latin America by the United States and planned to do something about it. On 25 November 1956 eighty-one Cubans and Guevara launched their invasion of Cuba.

Silence is argument carried out by other means. • **Che Guevara (1928–1967)**



Che Guevara, shown in a detail from the iconic photograph *Guerrillero Heroico*, taken on 5 March 1960, when Che was thirty-one years old. Photo by Alberto Korda.

Originally the group's doctor, Guevara proved an excellent guerrilla fighter, earning the highest rank among the rebels, and it was his column's January 1958 entry into Havana that marks the victory of the Cuban revolutionary forces. During the war, Guevara established a school for teaching guerrilla fighters to read, a printing press, and a radio station. He also met Aleida March, who became his second wife. He later published the first official history of the Cuban Revolution and popularized the *foco* theory of guerrilla war, which argued that small groups of committed individuals could create the conditions for revolution on a wider scale.

After the war, Guevara served as minister of industry and head of the national bank. But Guevara's numerous publications, speeches, and worldwide role as the Cuban Revolution's public face were what made

him a celebrity both hated and loved. The prototype for the "new man," Guevara was motivated by moral incentives and hoped to eventually eliminate money. Encouraging international cooperation to establish socialist societies, Guevara represented a humanist Marxism, offering new possibilities for communists opposed to Stalinism.

Although a diligent bureaucrat, the position did not suit him. In 1965, Guevara "disappeared" from Cuba, quietly organizing a disastrous guerrilla war for independence in the Congo. Despite renouncing his Cuban citizenship in a farewell letter to Castro, Guevara returned to Cuba in March 1966. Determined to remain no longer than necessary, Guevara launched his final guerrilla campaign that fall, hoping to inspire a peasant revolution in Bolivia. His guerrillas fought their last battle on 8 October 1967 against Bolivian army rangers working with the CIA. Guevara was captured and executed the next day.

Controversy surrounds Guevara's legacy and revolutionary methods, but his analysis of imperialism as a way of understanding the past and present offers insight into world history from the perspective of an internationalist, rather than one committed to a nation-state. His ideas and martyrdom continue to inspire social justice movements. While Guevara's place in world history as a global revolutionary is secure, his contribution as a social and political thinker continues to unfold.

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See also Revolution—Cuba; Revolutions—Communist

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Guilds

Artisans, merchants, and other workers formed guild associations throughout history as a way to standardize practices in their professions. As their legal powers grew, guilds regulated production, fixed rules for apprenticeship, restrained competition, and countered foreign competition with precise ordinances. By the beginning of the nineteenth century, with growing economic deregulation, guilds were considered an obstacle to progress and were abolished worldwide.

Guilds, in both the Middle Ages and the modern age, may be understood as those associations, particularly typical of western Europe, formed by artisans, merchants, and other workers who perform the same job and have to submit to certain rules. They have been known as *corporazioni* or *arti* in Italy, *zunfte*, *gilden*, or *handwerke* in Germany, *métiers* or *corps* in France, *gremios* in Spain, and *gilde* in those countries overlooking the Baltic Sea.

Their origins are old. In the ancient Greek cities there were associations with religious and charitable purposes. They arose in Egypt, too, and in ancient Rome from the third century BCE as free associations (*collegia*, *corpora*, or *artes*) controlled by the state. Following the decline of the Roman Empire, the barbarian invasions, and the decline of cities, these associations disappeared, then revived after the year 1000 all over western Europe, although the link between these associations and the previous ones is not very well established. In contrast, the derivation of the Byzantine guilds from the Roman ones has been proved. In Japan, by comparison, guilds arose much later than in other countries: it was only between the seventeenth and eighteenth

centuries that town merchants (or *chonin*) united in privileged associations, in order to oppose the feudal landowner. As regards Arabian towns, we do not know anything about artisan or commercial guilds before the fifteenth century. In India guilds developed under the Mughal Empire, in the seventeenth century, bringing together mostly traders, but they were controlled by the state; in Constantinople the government used to name the guilds' heads directly, as guilds had the function of supplying the city with food. The same thing happened in the Ottoman Empire, while in China guilds were weak or did not exist at all, due to the predominance of foreign merchants. In England the existence of guilds can first be proved in 1087.

Guilds in Europe could be professional communities that were very narrow (rope makers, wool carders) or quite wide (cloth makers). A famous skilled guild arose in Spain: the *mesta*, which united the sheep breeders, was established in 1273 by Alphonso X of Castile. Sometimes guilds were connected with ethnic minorities. For example, in Tudela, Spain, in the late thirteenth century, Moors had a monopoly on iron and leather working. This was the only such case in Spain, however, and it did not recur elsewhere because in nearly the whole of Europe, ethnic minorities were often excluded from guilds. Even more complete was the formal exclusion of the Jews, who were usually prevented from organizing their own guilds, at least until the seventeenth century, with the exception of concessions and derogations. Thus a turning point was marked with the 1648 royal decree by Habsburg monarch Ferdinand III of Hungary, who allowed the Jews of Prague to carry on with all kinds of jobs.



Thomas de Keyser, *The Syndics of the Amsterdam Guild of Goldsmiths* (1627). Oil on canvas. Toledo Museum of Art (Toledo, Ohio).

As their legal powers grew, guilds regulated production, fixed rules for apprenticeship, restrained competition, and opposed foreign competition with precise ordinances. Internally, they designated their officials, and their membership was subdivided into masters and apprentices (*maestri* and *garzoni* in Italian; *maîtres apprendistes* and *garçons* in French; and *meister* [master], *geselle* [journeyman], and *schelinger* [apprentice] in German). Each guild formed a special jurisdiction: the heads of the guild judged controversies between its members and technical disputes about the trade. From the twelfth century onward, guilds appeared in towns as separate entities with their own legal status.

In many countries, as time went by, there developed a politically significant distinction between major and minor guilds: The former were usually constituted of merchants (e.g., the *six corps marchands* in Paris; the *herrenzunft* in Basel; and the *arti maggiori* in Florence, where they seized power in 1293), while the latter were mostly constituted

by artisans. As regards the guilds' organization, it is necessary to distinguish between those areas—Venice, Sicily, France, Aragon, and Catalonia, some parts of the German Empire, the Mughal Empire in India—where the central power was able to keep its own privileges and those where it had to share these privileges with class interests. Thus in large independent cities, such as Milan, Florence, Siena, Bologna, those of Flanders, and some German cities, guilds played a political role in government. Nevertheless with the creation of great nations, guilds lost their power and became more and more closed, monopolistic circles.

With the appearance of the eighteenth-century doctrines of the Enlightenment and English liberalism, and with growing economic deregulation, guilds were seen as an obstacle to progress. The guild system was abolished for the first time in Europe in 1770 by Leopold II of Tuscany, then in 1791 by the French National Assembly and, finally, during the Napoleonic era, at the end of the eighteenth and the beginning



of the nineteenth centuries, almost all over Europe and the world.

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See also Labor Union Movements

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chat

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Gum Arabic

Ancient Egyptians used gum arabic, a sap-like product from acacia trees grown near the Saharan and Arabian deserts, in mummification; successive societies valued it as a drink thickener, a wall glaze, and a hairdressing product. Its use in manufacturing silk and cotton cloth caused a boom in its trade in the early 1800s. Today gum arabic can be found in cosmetics, confections, and beverages.

Gum arabic is one of the oldest and the most versatile of the Afro-Eurasian regional trade goods. A tasteless, viscous, light-colored, sap-like product of several varieties of acacia trees that grow along the edges of the Saharan and Arabian deserts, gum arabic exudes naturally when the acacia bark splits under the force of desiccating desert winds. Harvesters can also artificially induce the exudation by making knife cuts in the bark.

In ancient Egypt artisans used gum arabic in making inks and in the process of mummification. In the desert societies of the Sahara and Arabia, it was used as a foodstuff, a thickener for drinks and glue, a glaze for mud-walled construction, a cosmetic hair treatment, a base for painting on wood, and a medicine for diarrhea. It found many additional uses in neighboring societies, including in papermaking and in cloth finishing.

Until the middle of the second millennium CE, gum arabic reached Mediterranean and southwest Asian markets principally from Arabia and northern Africa. After the fifteenth-century maritime revolution, European mariners discovered an abundant source of gum arabic along the southern coast of the western Sahara. Gum arabic exports from this region, however,

remained modest until the eighteenth century, when manufacturers extended techniques for the use of gum arabic in the production of silk cloth to the manufacture of cotton cloth. Thereafter, the importance of gum arabic increased, and the “gum coast” became an arena of international contestation.

The principal markets for the seasonal purchase of gum arabic were located along the Saharan coast of Mauritania and at river ports along the lower Senegal River. The Arabo-Berber tribes who controlled the gum harvest sent their slaves to do the arduous work of scrapping the gum into leather sacks that later would be loaded on to draft oxen and carried to market. European merchants along the Saharan coast bought the gum from desert caravanners and took it on board their ships. Afro-European merchants bought the larger volume of gum arabic at the river markets from desert merchants and bulked it in warehouses in Saint-Louis du Sénégal at the mouth of the Senegal River before it was transferred to ocean-going ships.

During the Seven Years’ War (1756–1763), Thomas Cumming, a U.S.-born gum arabic trader based in London, led a small expedition of British naval vessels in a successful attack upon the French colony of Saint-Louis du Sénégal. The British seizure of Saint-Louis in 1758 marked the beginning of the first of two periods of British colonial rule in northern Senegambia (1758–1779). The British also briefly gained control of Saint-Louis during the Napoleonic Wars.

During the 1820s and 1830s the volume of gum arabic exports doubled. The gum arabic trade became the overwhelming focus of European, Euro-African, and Arabo-Berber merchants and the Arabo-Berber warrior groups along the southern shore of the Sahara

who participated in the Atlantic sector. Terms of trade moved heavily in favor of the Arabo-Berbers, and large volumes of the principal import, an indigo-impregnated cloth known as the “guinée,” flooded into the region. The desert merchants, adept at exploiting their market position, created intensely competitive conditions among the European and Euro-African gum arabic traders at Saint-Louis who sought their trade. The desert warriors exploited their ability to extort tax payments from the gum arabic traders. During the 1830s and 1840s many of these Euro-African traders fell into ruinous debt. This crisis in the gum arabic trade provoked the French conquest of the lower Senegal River valley during the early 1850s; it was in part an effort to break the power of desert warrior groups and to reorganize the gum arabic trade. This conquest was the first inland territorial conquest by the French in sub-Saharan Africa.

Thereafter, import-export commercial firms at Saint-Louis imposed their control over trade in gum arabic, and gum arabic remained the principal export from the Senegal River valley throughout the remainder of the nineteenth century. The value of gum arabic declined sharply, however, as new industrial products and processes reduced the importance of the natural exudate. New sources were developed in the Sudan, and these managed groves of acacia emerged during the twentieth century as the principal source of the world's supply of gum arabic.

Thus, beginning in the mid-nineteenth century, gum arabic returned to its earlier role as a natural product with only an exceedingly modest importance in world trade. Today gum arabic continues to find a wide variety of uses in lithography and in the production of cosmetics, confections, and beverages.

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The Babylonian king Hammurabi (reigned 1792–1750 BCE), a skilled military commander and a clever politician, is best known for the large stele on which he had some 282 laws inscribed. This so-called Code of Hammurabi, the longest text extant from Babylon's first dynasty, includes an epilogue of curses on anyone who destroyed the stele and blessings on anyone who refurbished it properly.

Hammurabi (or Hammurapi), who reigned from 1792 to 1750 BCE (according to the most widely accepted chronology of ancient Mesopotamia), was the sixth and most prominent king of the first dynasty of Babylon (1894–1595 BCE). Ethnically, the rulers of the first dynasty were a family of Amorites, a mostly rural group, some of whom nevertheless became rulers of city-states in Babylonia and Syria just after the beginning of the second millennium BCE. When the earliest member of the first dynasty, Hammurabi's ancestor Sumuabum, began to rule (1894 BCE), Babylon was a relatively small and unimportant town. By the time of Hammurabi's father, Sin-muballit (reigned 1812–1793 BCE), Babylon had grown somewhat in size, and its authority extended to several nearby towns, so that Hammurabi inherited a fair-sized state, estimated to have been roughly 10,000 square kilometers.

Hammurabi proved to be both a skilled military commander and a clever and patient politician. He joined coalitions with rulers of similarly sized city-states to defeat common enemies, and, when the opportunity presented itself, changed allegiances or attacked former allies to enlarge his own territory. When he defeated the long-reigning king Rim-Sin (reigned 1822–1763 BCE) of the powerful city of Larsa, capital of the state of Emutbal to the south, he added most of southern Mesopotamia to his realm in one stroke. Two years later, in his thirty-second year on the throne, he conquered a former ally, the city of Mari some 400 kilometers up the Euphrates River, making Babylon the preeminent power in Mesopotamia, vying in extent and might only with the Syrian kingdom of Yamhad and its capital Aleppo. Little archaeological or textual material remains from Babylon itself during this period, because the rising water table has made excavation difficult.

There is, however, an abundance of evidence from nearby cities that were under Babylon's hegemony, so that we are well informed about the social structure, economy, and political intrigue of the period. The textual evidence includes many royal (dedicatory) inscriptions and vast numbers of legal documents and letters. Many of the letters are from Hammurabi himself (undoubtedly dictated



Detail of the famous stele containing Hammurabi's law code. Louvre, Paris.

If any one buy the cattle or sheep which the king has given to chieftains from him, he loses his money. • **Hammurabi, Law 35 (eighteenth century BCE)**



A portrait of Hammurabi carved as a relief sculpture, circa 2200 BCE. British Museum.

to a scribe), addressed to his viziers in the major cities, commanding them, for example, to restore to a farmer a field illicitly taken from him, or to dredge the local canal, or to collect certain taxes; he clearly involved himself in the smallest details of administering his large realm. Much of our knowledge of Hammurabi's military expansion derives from how the years of his reign were designated—in this period in southern Mesopotamia, years were designated by a significant royal event or activity, such as “(the year) he defeated Emutbal and its ruler Rim-Sin.”

In addition to his involvement in the kingdom's day-to-day administration, Hammurabi carried out other traditional duties of a Babylonian ruler, such as building or rebuilding temples in many of the cities under his control, fortifying city walls, and serving as the prime dispenser of justice. Hammurabi seemed particularly keen to portray himself as a “King of Justice” (the name he gave to a statue of himself, after which his twenty-second year was named). And, indeed, Hammurabi is best known for the large stele of

polished black diorite on which, near the end of his reign, he had some 282 laws inscribed. The “Code of Hammurabi,” as it is commonly, though imprecisely, called, is the longest text extant from the first dynasty. The text includes not only the laws, but also a prologue, in which the gods call upon Hammurabi “to proclaim justice in the land, to destroy the wicked and the evil, that the strong may not oppress the weak” (author's translation) and a lengthy epilogue of curses on anyone who destroyed the stele and blessings on anyone who refurbished it properly.

The laws do not constitute a code in the strict sense (i.e., a comprehensive and systematically arranged set of laws), but are rather a collection of individual cases. An example is No. 193: “If a son has struck his father, his hand will be cut off.” Among the topics covered in the laws are trials, theft and kidnapping, land tenure, commerce (regulation of merchants, financial transactions, debt), the family (women, marriage, inheritance, adoption), assault, professional fees and rates of hire, and slave holding. Although it is not the earliest such collection of laws in Mesopotamia, it is by far the most comprehensive. The interesting fact has been noted by scholars that Hammurabi's “Code” is almost never referred to in the many legal texts attested from the period. Hammurabi and his code, however, remain of historic import because of the massive nature of the code—both as a physical monument and as the first such extensive collection of laws discovered.

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See also Babylon; Mesopotamia

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Han Wudi

(156–87 BCE)

CHINESE EMPEROR OF THE HAN DYNASTY

The Chinese emperor Han Wudi remained in power from 140 to 87 BCE. He is renowned for solidifying the central government, recruiting skilled officials, and making Confucianism the state ideology. Although years of foreign adventures, territorial expansion, and extravagant court expenditures left the empire in a state of unrest and the imperial treasury depleted, Wudi laid the foundation of a strong government for his successors.

Han Wudi, the fifth emperor of the Han dynasty (206 BCE–220 CE), was one of the most influential emperors in Chinese history. He consolidated the authority of the central government and expanded the territory of the dynasty. He named Confucianism the state ideology; it has influenced Chinese government and society ever since. His principles of recruiting government officials based on Confucian learning and on virtue and merit remained in use until 1905, at the close of the last imperial dynasty (the Qing, 1644–1911/12). He forged alliances, conducted diplomatic and military activities in Central Asia, established relationships with more than thirty kingdoms or tribes, and was instrumental in establishment of a new trade route, the Silk Roads, which connected China with the West. Until the advent of overseas travel during the sixteenth and seventeenth centuries, the Silk Roads connected East and West and facilitated the diffusion of commodities, food, culture, and technology.

Han Wudi's birth name was Liu Che. He was the fourth son of Emperor Jing, and his mother was a consort. In 150 BCE Jing named Han Wudi's mother, Lady Wang, empress and named Han Wudi his heir.

At age sixteen Han Wudi ascended to the throne, but his grandmother, Empress Dowager Dou, conducted the affairs of state. Empress Dowager Dou favored the early Han practice of Huang Lao, named after the legendary Huang Di (Yellow Emperor) and Laozi (Lao-tzu, Lao Tsu), author of the Daoist work *Daodejing* (Classic of the Way of Power). Huang Lao was characterized by frugality in government spending, light taxation, laissez-fair (a doctrine opposing government interference in economic affairs), and appeasement in foreign relations. After the death of Empress Dowager Dou in 135 BCE Han Wudi ruled and changed the course of government.

Han Wudi was a vigorous emperor who aspired to a strong dynasty and sought capable officials to assist him. He gave special exams on governance and personally read examinees' essays. He recruited gifted officials, including Dong Zhongshu and Gong Sunhong. The former became the spokesman for Han Confucianism, and the latter became chief minister and persuaded Wudi to establish an imperial university of Confucian learning.

Ironically scholars often call the emperor who made Confucianism the state ideology a "legalist." Legalism had been the ideology of the Qin dynasty (221–206 BCE). Legalists advocated strong rulers, a strong empire, and harsh punishment. Legalism was still viable in the early Han dynasty, and Wudi was influenced by it. He eliminated the power of China's princedoms and was relentless in executing officials, including chief ministers who broke the law or failed in their work. He also pursued a vigorous foreign policy and employed officials who favored harsh punishment. However, the early Han intellectual world was synthetic. Han Wudi substantially followed Confucian



practices. He observed Confucian ritual and music, promoted the Confucian virtue of filial piety (obedience to parents), and sent officials to assist people who were old, widowed, ill, or disabled. Moreover, despite initiating military campaigns, he did not increase taxes on the farming population. In his edicts he frequently revered Yao, the legendary Confucian sage ruler whom the Han emperors claimed as their ancestor. In addition, although Wudi was stern, he was fair. He accepted frank criticism and revered Jian, an outspoken Confucian-Daoist minister.

Wudi was strong and resolute but constrained by Confucianism and the Mandate of Heaven, which held that an emperor's rule is based on the blessing of heaven and that if an emperor rules unwisely, heaven will retract the mandate. They were devoted to Confucian ethical norms and a government for the people. Confucianism advocated a benevolent ruler, and Confucian officials were not unconditionally loyal to an emperor. Moreover, Han Confucianism (Confucianism of the Han dynasty which also absorbed non-Confucian elements) considered natural disasters to be warnings from heaven about flaws of the emperor and used such warnings to persuade emperors to reform.

In 124 BCE Han Wudi established an imperial university of Confucian learning, with fifty students studying from five learned Confucians, each specializing on a different Confucian classic. The university was designed to train Confucian officials, but it was based on merit. Graduates were required to pass a written exam before being admitted to a pool of officials-in-waiting. By the later Han dynasty the university had 300,000 students.

Han Wudi also promoted Confucian virtues in domestic affairs. Beginning in 134 BCE he ordered senior officials to recommend candidates who were known for their filial piety and integrity. The officials were responsible for their recommendations, and candidates were tested for qualification. Because Confucian learning and Confucian virtue were the avenues to officialdom, the most desirable career path in the empire, Confucian ideas took root in society. During the early Han dynasty, *The Classic of Filial Piety* also

appeared. Filial piety remains an important cultural value in China.

Wudi's predecessors had left him a large treasury from their frugal rule. However, Wudi's military campaigns soon emptied the treasury, and he tried various ways to raise money, including confiscating the lands of nobles and selling offices and titles. However, under the influence of Sang Hongyang, a merchant's son, Wudi increased state revenue by directly involving the government in business. The government monopolized the production of money (coins), iron, salt, and liquor, thus bringing in revenue. Wudi also directed the government to buy grain in regions with full harvests and to sell grain in regions with a shortage. This policy turned a profit for the state, balanced the price of grain, and relieved famine. The state also profited from a heavy tax on merchants. In addition to taxing commodities, Han Wudi taxed carts and boats.

The influence of Han Wudi's state monopoly was far reaching; later Chinese emperors often resorted to the monopoly to meet extreme fiscal difficulties, bringing in revenue without increasing taxes. The monopoly, however, was not without opposition. In 81 BCE, shortly after the death of Wudi, a group of people criticized the state monopoly in a court debate. Wudi's fiscal policies were in sharp contrast with those of the previous sixty years of the early Han dynasty, but in the debate the government's views prevailed.

Han Wudi made many other innovations, such as proclaiming a new calendar. However, his economic policies were most innovative and, to some extent, were comparable with modern state enterprises (in some countries) on vital industrial resources such as electricity and petroleum.

About 200 BCE the Xiongnu, a nomadic Turkish-speaking people under the rule of Maodun, had established a large federation from the Aral Sea to the Huang (Yellow) Sea, just north of Han territory. Unable to confront Maodun, the early Han rulers had sent him gifts and married a Han Princess to him; but they had not always been able to prevent Maodun or his successor from pillaging northern China. In order

Hold faithfulness and sincerity as first principles. • Confucius (551–479 BCE)

to confront the Xiongnu, Han Wudi in 139 BCE sent an envoy, Zhang Qian, to Central Asia to seek an alliance with the Yuezhi people, who earlier had been expelled from their homeland by the Xiongnu. Zhang Qian was captured by the Xiongnu and lived there for ten years before finally reaching the Yuezhi. However, by then the Yuezhi were no longer interested in forming an alliance to fight the Xiongnu. Zhang Qian, however, brought back information about new regions and a possible route to India. Subsequently Wudi first sent envoys and later troops, leading to the eventual establishment of the Silk Roads.

Beginning in 133 BCE Wudi took the offensive against the Xiongnu. The wars were long and costly, but the Han army was victorious. Wudi's generals expelled the Xiongnu from Ordos, Inner Mongolia, Kansu, and Chinese Turkestan and greatly expanded Han territory. Wudi established military colonies and instituted a system whereby native rulers were allowed to retain their autonomy but became vassals. This arrangement became common in Chinese foreign relations until the mid-nineteenth century. Wudi's army also incorporated northern Korea and northern Vietnam. Indeed, most of his reign was marked by military campaigns. He died at age sixty-nine and was buried in Maoling near modern Xi'an. After his death he was known as "Wudi, the martial emperor," although he never led an army; he instead employed gifted generals.

Han Wudi laid the foundation of a strong empire for his Han dynasty posterity. His establishment of a Confucian bureaucracy with merit-based recruitment (a combination of recommendation and examination) began a system of responsible rulers and officials that has lasted for more than two thousand years. His promotion of Confucian virtue and learning made Confucianism a prevailing influence in China and in

other East Asian states. Through his military campaigns against the Xiongnu he opened a connection between East and West, facilitating trade and cultural diffusion.

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See also China; Confucianism

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Hanseatic League

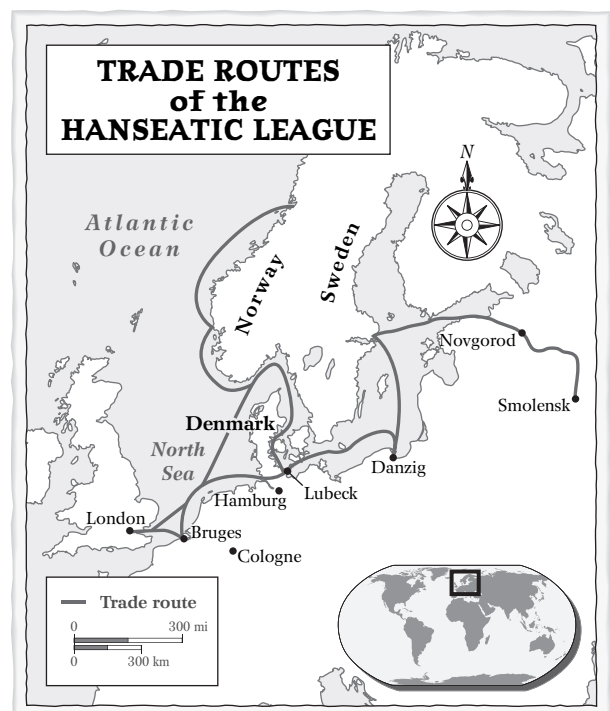
In the mid-twelfth century, without navies to protect cargoes or international agencies to regulate tariffs, northern German cities formed the Hanseatic League in an effort to ensure that ports were safely maintained and tariff agreements set. The league controlled increasingly wide trading routes but declined in the early sixteenth century with the disappearance of local herring fisheries and the growth of English and Dutch merchant marines.

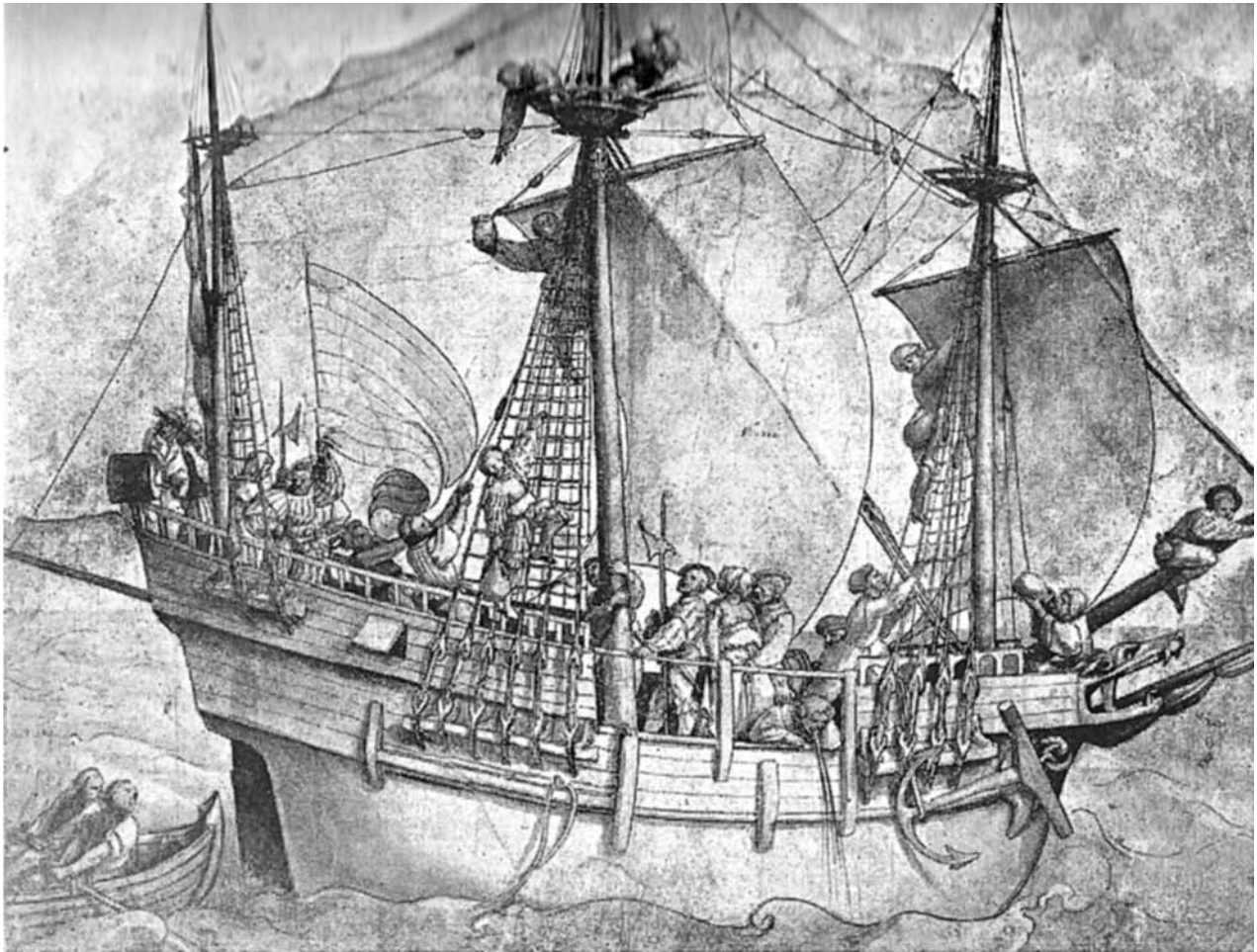
The Hanseatic League was a federation of merchant cities that formed in northern Germany during the middle of the twelfth century and dominated trade in northern Europe for the next two centuries with its economic policies. The league derived its name from the German word *hansa*, an association or group of merchants who specialized in trade with foreign cities or countries. The unstable and dangerous nature of mercantile life in the late medieval period, combined with the lack of organized protection provided to merchants by their own government, encouraged traders to work together for safety. These alliances, which originally started out between merchants from the same town, soon grew into larger associations and leagues between neighboring towns.

In antiquity, the most cost effective way to transport commercial goods was over water, and cities located on rivers or the coast had a natural advantage over interior cities. In the late eleventh and early twelfth centuries, cities in northern Germany became important commercial centers due to their position on trade network routes that allowed them to serve as conduits for commercial goods traveling to and from southern Europe over the North and Baltic seas. This

trading network soon increased in scope to include goods moving west to England and east into Russia. The weak and decentralized government of Germany during the eleventh and twelfth centuries was able to provide little assistance or protection for its traders, and this lack of governmental support forced individual merchants and commercial cities to create their own ties and associations for mutual protection.

In 1241 Lübeck and Hamburg strengthened the existing commercial ties linking the two cities with a treaty designed to protect their mutual commercial traffic. Lübeck's chief industry in the twelfth century was the exportation of herring caught at nearby fisheries. Due to existing religious dietary restrictions





At the beginning of the sixteenth century the herring industry disappeared in Germany, and the league declined in power and membership.

on eating meat on certain days, fish had become an integral part of the Christian diet, and Lübeck had capitalized on a growing demand for its fish in central Europe. Hamburg was essential to Lübeck's fishing industry, since it provided Lübeck with the salt needed for salting and drying of the herring, which allowed it to be safely transported without spoiling. To facilitate this trade between their cities they constructed a canal that connected the two cities. To protect this trade, they further reinforced their economic ties with the treaty.

This initial association between Lübeck and Hamburg slowly grew into a larger league as other cities joined. While the majority of the league's members were from northern Germany, it did include cities in Holland and Poland. At the height of its power, the federation consisted of over 165 member cities. The league originally functioned only to facilitate

common commercial ventures, not for political or religious purposes. Each member city's merchant association could send delegates, if it wished, to the league's formal meetings (diets), which were held at Lübeck to discuss economic policies. The attending delegates took the diet's economic decisions back to their city for their local merchant association to accept or reject. The Hanseatic League's economic strategy was designed to protect the trading privileges of its members, to open new markets for exploitation, and to create monopolies wherever possible. The economic success of the league's members soon led it into political conflict with the king of Denmark, Valdemar IV, over control of local herring fisheries. After an initial setback, the league defeated the king and forced him to sign the Treaty of Stralsund in 1370. This treaty made sweeping economic concessions to the Hanseatic



Hans Holbein the Younger, *Portrait of Georg Giese [Giese]* (1532). Giese, from Danzig, was a Hanseatic League merchant at the Steelyard, the Hanse branch in London.

League and gave the member cities privileged trading rights, including free trade in Denmark. This control over trade in northern Europe continued into the fifteenth century until an unsuccessful war with Holland forced the Hanseatic League to sign the Peace of Copenhagen in 1441, breaking the league's hold on the Baltic Sea.

By the beginning of the sixteenth century, the league had begun a slow decline in both its power and membership. The disappearance of the local herring fisheries and the growth of the English and Dutch merchant marines resulted in increased competition, which the league was unable to overcome, and soon led to the loss of exclusive trading markets for Hanseatic members. While the league was never formally dissolved, its last official meeting was held in 1669.

R. Scott MOORE

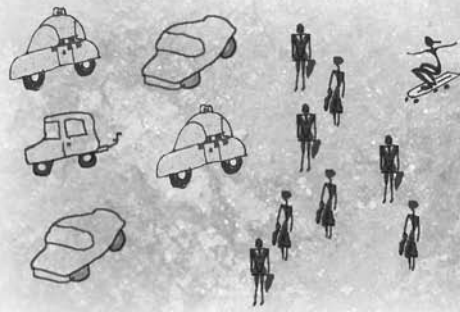
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Harappan State and Indus Civilization

The Indus was the earliest civilization of South Asia, contemporaneous with Bronze Age Sumer, Egypt, and China. The Indus participated in what is now called the Third Millennium Middle Asian Interaction Sphere, which linked its people to the Mediterranean and from Central Asia to the Arabian Gulf in an important trading network. Scholars today debate the reasons why most Indus cities were abandoned by 1900 BCE.

The earliest civilization of South Asia is called the Indus, or Harappan, civilization. This ancient culture arose on the plains and in the mountains of the greater Indus Valley of Pakistan and northwestern India in the middle of the third millennium BCE (c. 2500–1900 BCE). The Indus civilization takes its place in world history as the first of ancient India's cities and was contemporaneous with those of the Bronze Age peoples of Sumer, dynastic Egypt, and China.

The Indus peoples were for the most part farmers, herders, craftsmen, and traders. They inhabited at least five cities, the best known of which are Mohenjo Daro and Harappa but which also include Dholavira, Ganweriwala, and Rakhigarhi. Mohenjo Daro and Harappa are the largest of the cities, each being about 100 hectares. (The other cities are slightly smaller; between 65 and 80 hectares.) Archaeologists believe that Mohenjo Daro and Harappa each had a population of about twenty thousand people.

The Indus civilization was by far the largest of the Bronze Age civilizations of Asia. It covered about a million square kilometers, extending from the present-day Pakistan-Iran border in the west to the coast of southern Gujarat in the east. The northern

limit for the principal habitations is the Siwalik Range of the Punjab, although there is an outlying Indus site (Shortughai) in northern Afghanistan, on the Amu Dar'ya River. In an effort to deal with the cultural geography of the Indus civilization, scholars have divided their territory into domains (geographical and cultural subregions) that may possibly have political significance.

Early Harappan Period and Urban Transformation

The beginnings of the Indus civilization are still not well understood. During an early Harappan period (c. 3200–2600 BCE) there were four roughly contemporaneous archaeological cultures (Kot Dijian, Amri-Nal, Damb Sadaat, and Sothi-Siswal) without large settlements or strong signs of social stratification. No remarkable degree of craft specialization existed during this period. At about 2600–2500 BCE a transitional stage occurred between the early Harappan and Indus civilization, during which most of the complex sociocultural institutions of the Indus civilization came together.

The urbanization that characterizes these peoples developed rather suddenly, over a period of about a hundred years. After a long period of gradual growth and change, the peoples of the greater Indus Valley created cities, a writing system, and a class-stratified society. Of course, some parts of older traditions of the greater Indus region survived. It is clear that there was little change in subsistence and the sociocultural, economic, and political balance between farmers and pastoralists, for example. This was also the time



Brick altars in modern India, once used for sacrifices, have origins in the ancient Indus Valley. Photo by Klaus Klostermaier.

during which the Indus ideology, or world view, began to emerge. It had a rather strong sense of nihilism to it. (Nihilism can be a negative philosophy, as it is often, but not always, associated with violence.) Some scholars suggest that the nihilism of the Indus civilization was in many ways a new beginning for its peoples, that they had turned aside many of their roots. Thus the Indus civilization can be said to represent a renaissance of sorts. (See Possehl 2002, 55–61 for more on this theme in Indus archaeology.) Water and cleanliness were powerful forces in the Indus ideology, such that the society valued both the physical property of water to remove dirt and oils from the skin but also the symbolic act of washing and generalized purity as well.

The ancient cities of the Indus were built in riverine settings: on the lower Indus River (Mohenjo Daro), the Ravi River in the Punjab (Harappa), and the Ghaggar-Hakra River (Ganweriwala and Rakhi-garhi). Dholavira may be an exception to this; today it is on an island in what is called the Rann of Kachchh, a large salt marsh above the Gulf of Kachchh. We do not know if the shallow Rann of today was an arm of the sea in the third millennium, but the Rann most certainly would have been fed in part by the waters of the Indus, so in a sense Dholavira too can be said to have a riverine setting.

The land was quite different in the third millennium, when the now-dry Ghaggar-Hakra was larger and the rolling uplands between the rivers of the Punjab were unirrigated scrub grasslands. Tree and grass cover were also probably better. But there were also constants—the summer monsoon, for example. The wheat and barley crops of the Punjab, Sind, and Baluchistan benefited from the winter rainfall coming across the Iranian Plateau from the Mediterranean, just as they do today.

The Cities of Mohenjo Daro and Harappa

Mohenjo Daro is a splendidly preserved ancient city. It was planned from the start, and was, at least for the most part, built in the middle centuries of the third millennium. It is constructed from baked brick, which is why it has survived so well. There are two parts to the city. A small, elevated artificial mound was situated on the west. This is now called the Mound of the Great Bath, because of the presence of a ritual bathing tank at just about its geographical center. The Lower Town, where most of the people lived and worked, was laid out in a grid, with major thoroughfares running north-south and east-west. Multiroom buildings that were probably

In the great books of India, an empire spoke to us, nothing small or unworthy, but large, serene, consistent, the voice of an old intelligence, which in another age and climate had pondered and thus disposed of the questions that exercise us. • **Ralph Waldo Emerson (1803–1882)**

also multistoried lined these streets. The private houses were generally provided with bathing facilities that were connected to a civic drainage system. These were specifically bathing facilities; they were not privies.

Harappa is located in the West Punjab, in Pakistan, on the southern bank of the Ravi River 650 kilometers northeast of Mohenjo Daro. Harappa is the name of the modern village adjacent to the mounds, and is not the city's ancient name. Unlike Mohenjo Daro, Harappa was a well-established settlement before the advent of the Indus civilization. There were villages there as early as 4000–3200 BCE as well as during the early Harappan period. Harappa is also a place

where the transition from early Harappan to mature Harappan civilization can be documented, so it is a very important site for archaeologists. There is also a small post-Indus settlement and cemetery there, of the so-called Cemetery H culture.

Harappa has been divided into several areas. The AB Mound, also called the High Mound, is somewhat like the Mound of the Great Bath at Mohenjo Daro, but lacks a bath, as far as archaeologists can tell. Mound F to the north has a large building that may well be a warehouse. It is near threshing and husking facilities for the processing of food grains. The southern part of the site is known as Mound E, with the adjacent ET area, an area of habitation and craft

activities. Harappa also has the largest of the cemeteries known from the Indus civilization.

Indus Technologies and Lifeways

The Indus peoples had a writing system, which was rendered in pictographic form on a range of objects. The best known of these are the Indus stamp seals with writing and an animal device. The Indus script remains undeciphered, in spite of many claims to the contrary.

Farming and herding were important occupations for the Indus peoples. The principal food grains were barley and wheat. They also cultivated at least two forms of leguminous seed (the chickpea and the field pea), mustard, sesame, cotton, grapes, and dates. The evidence for the cultivation





of rice during the Indus civilization is ambiguous, but it is possible that Indus peoples cultivated rice. Indus peoples were cattle keepers, and the remains of the zebu, the humped Indian breed, are consistently above 50 percent of the bones found in an archaeological excavation. Cattle imagery is also prominent; it is clear that cattle were the most important animals in the culture and probably the principal form of wealth. The Indus also kept water buffalo, sheep, goats, and pigs. Fish, both marine and freshwater, were traded over wide areas.

The Indus peoples were skilled craftsmen and applied themselves to their trades with great vigor. They were technological innovators, inventing processes that allowed them to etch and drill long, hard stones such as carnelian, to make stoneware and ceramics, and to smelt, refine, and process a variety of metals. Their pottery was fashioned using a number of forming techniques, often in multiple parts that were welded together prior to firing. They were skilled at bead making, with their long, barrel-shaped carnelian beads a specialty. Shells, especially the maritime conch, were made into bangles, ladles, and other objects, and were inlaid in objects for decoration.

Cultural Interaction across Afro-Eurasia

World history has been enriched by the Indus peoples, who participated in what has come to be called the Third Millennium Middle Asian Interaction Sphere, which linked peoples from the Indus to the Mediterranean and from Central Asia to the Arabian Gulf in an important trading network. This interaction has deep historical roots and began much earlier than the Indus civilization, but was at its peak during the second half of the third millennium. Sea trade with Mesopotamia through the Arabian Gulf was a part of this network and can be documented in both written and archaeological records. According to Mesopotamian cuneiform texts, the products that the Indus peoples supplied to Mesopotamia were carnelian, lapis lazuli, pearls, various exotic woods, fresh dates, copper, and gold. Not clearly documented are the products traded

to the Indus, but they may have been perishables such as food products, oils, and cloth.

Two themes that appear on Indus seals have parallels in Sumerian mythology. The first is shown on a seal from Mohenjo Daro with a half-human female, half-bull, monster attacking a horned tiger. This is widely interpreted as portraying the story of the Mesopotamian goddess Aruru, who created the monster to do combat with the hero Gilgamesh, though the monster ultimately became Gilgamesh's ally and fought with Gilgamesh against wild animals. The second motif is a well-documented Mesopotamian combat scene, with Gilgamesh fighting off rampant animals on either side.

A male deity, usually shown with bull or water buffalo horns, is central in Indus religion. He is paired with a number of different female images. The plant and animal imagery of the Indus civilization can be seen as representing specific aspects of this great heaven-earth, male-female duality. There are many portrayals of composite animals, some with three heads on one body, human torsos on four legged bodies, men with bull's heads (like the Minoan Minotaur), tigers with horns, unicorns with elephant trunks, and unicorns growing out of trees. There is no good evidence for fire worship, as seen in later Vedic India.

A seal from the Indus site of Chanhudaro, just south of Mohenjo Daro, has a representation of a bull sexually ravishing a prostrate human female. The archaeologist F. R. Allchin interprets this as representing the duality of heaven (the bull) and earth (the female), a theme that can be understood by reference to the creation myths found in the Rig Veda and Atharva Veda. This is perhaps our best evidence for a connection between the Indus civilization and later, historical, India.

The Transformation of Indus Civilization

What happened to the ancient cities and peoples of the Indus? Mohenjo Daro was largely abandoned by 1900 BCE. The same is true for the other four

Indus cities, although a small settlement remained at Harappa—the so-called Cemetery H people. Older theories, which hold that the cities and civilization were destroyed by invading Aryan tribes (as depicted in the Rig Veda), make very little sense since there is no evidence for the sacking of any of the Indus settlements. Also, the date of the transformation of the Indus civilization around 2100–1900 BCE and the date of the Vedic texts (c. 1000 BCE) don't agree. The proposition that a natural dam formed across the Indus River in Sind and flooded out the civilization has been widely critiqued and is not viable.

It is apparent from the excavations at urban centers as well as from regional surveys that at the opening of the second millennium Indus settlements in Sind and Baluchistan had been widely abandoned. Table 1 provides a summary by region of the substantive data comparing Indus civilization and the period following the transformation, generally called the Indus post-urban civilization.

The figures in table 1 would seem to indicate that it is still viable to speak of the “eclipse of the Indus civilization” in Sind and Baluchistan, but in other

regions, notably in the East and to a lesser degree in Saurashtra (present-day Gujarat), the history of the culture change was different. In these areas there were strong lines of continuity through the early centuries of the second millennium with little, if any, of the trauma that affected Sind and Baluchistan. The stark image of Baluchistan in the second millennium represents a clear challenge for field archaeology, because it does not seem reasonable to presume that the entire area was deserted at that time.

Scholars have proposed that the process responsible for transforming this once grand civilization involved changes in the Indus ideology, possibly its abandonment. For example, one of the clearer loci of culture change was in the cities, those settlements and institutions most closely associated with sociocultural complexity. There, craftsmen's technological virtuosity was severely compromised, and the obvious traces of the symbolic uses of water disappear. But in some places the transformation of Indus civilization was not a traumatic event. Scholars speculate on the reasons for this possible abandonment of Indus ideology, but no consensus has yet been reached.

Table 1.

Indus Civilization and Indus Post-Urban Civilization

REGION/Period	Site Count	Average Site Size (in hectares)	Settled Area (in hectares)
SIND			
Indus civilization	86	8.0	688
Post-urban	6	5.6	34
CHOLISTAN			
Indus civilization	174	5.6	974
Post-urban	41	5.1	209
BALUCHISTAN			
Kulli-Quetta /Indus	129	5.8	748
Post-urban	0	0	0
SAURASHTRA			
Sorath Indus	310	5.4	1,674
Post-urban	198	4.3	815
EAST			
Indus civilization	218	13.5	2,943
Post-urban	853	3.5	2,985



Urban life in the subcontinent begins with the Indus civilization, and this is its most obvious contribution to world history. Some suggestion of continuities between the Indus civilization and later historical times exist, but these are not yet well defined. The famous Proto-Shiva seal from Mohenjo Daro shows us that yoga, or ritual discipline, has its roots in the Indus. There is also strong continuity in farming and herding, and the seasonal pattern of life. It is clear that the special, and important, role of cattle in ancient Indian society has its roots in the Indus too. Large-scale interregional trade (by both land and sea) had its beginnings in the Indus civilization. The Indus peoples in that sense anticipated the later Silk Roads with the Third Millennium Middle Asian Interaction Sphere.

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See also State Societies, Emergence of

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Harun al-Rashid

(766?–809 CE)

FIFTH CALIPH OF THE ABBASID DYNASTY

From 786 to 809 CE Harun al-Rashid ruled as the Abbasid dynasty's fifth caliphate. It was a culturally dynamic period marked by important developments in Islamic jurisprudence, philosophy (with the continued translation of Greek works), literature (with the integration of Persian influences), and personal piety (with the emergence of early Sufism). Al-Rashid's reign can be characterized as a mixture of military aggression and pragmatic diplomacy.

Harun al-Rashid ibn Muhammad al-Mahdi ibn al-Mansur al-'Abbasi reigned as "al-Rashid," the fifth caliph of the Abbasid dynasty (749/50–1258), from 786 to 809 CE. His reign was pivotal in the administrative and institutional development of the caliphate, marking in many senses the zenith which presaged its decline. His contacts with the Latin West, and his relationship to *The One Thousand and One Nights*, made him a famous, if overly romanticized, figure.

Harun was likely born in al-Rayy (modern Shahr-e-Rey in Iran) in February 766 CE, the third son of the caliph al-Mahdi (reigned 775–785 CE) by a slave from Yemen named al-Khayzurun. Although he grew up in the luxury of the increasingly decadent caliphal court, young Harun gained military and administrative experience, at least nominally, in expeditions against Byzantium and as governor of the western provinces. His candidature for caliph was stage-managed by his mother and Yahya ibn Khalid (d. 805 CE), a scion of the powerful Barmakid family. He suffered under the rule of his brother al-Hadi (reigned 785–786 CE), whose death under suspicious circumstances left the way clear for Harun's succession. As caliph he assumed the honorific al-Rashid ("the Rightly Guided").

The Barmakids remained the real power behind the throne until 803, by which time al-Rashid had established an independent administrative regime based on palace slaves and clients who owed their loyalty to him alone—a pattern that was to be followed in future caliphates. Under al-Rashid's rule, the caliphate was torn by forces of decentralization, characterized by the loss or impending loss of Africa,



Julius Köckert, *Caliph Harun al-Rashid Receiving the Delegation of Charlemagne* (1864). Oil on canvas. Maximilianeum Foundation in Munich.



"Harun al-Rashid Feasting with His Favorite, Jafar, and Boon Companions."

Illustration from *Harun-al-Rashid: Caliph of Bagdad* [sic], by Gabriel Audisio.

Khorasan (present-day northeastern Iran), and Yemen. Much of this was due to factors beyond the ruler's control, although some of his policies, including dividing his realms among his chief heirs, hastened the subsequent decline.

The period comprising his rule was culturally dynamic, marked by important developments in Islamic jurisprudence (including the development of Malikism, one of the four main schools of jurisprudence), philosophy (with the continued translation of Greek works), literature (with the integration of Persian influences) and personal piety (with the emergence of early Sufism).

Al-Rashid's relationship with the Eastern Roman Empire (Byzantium) was characterized by a mixture of military aggression and pragmatic diplomacy. Byzantium made a suitable object for the regular raiding that a caliph was ideally expected to carry out against the non-Muslim world, and al-Rashid himself led many such missions. Although these did not result in permanent territorial gains, they forced the Empress Irene (reigned 780–802 CE), under pressure from the Bulgarians, to seek a peace treaty. Al-Rashid was compelled to accept given the threat of the Khazars, Turkic tribal allies of Byzantium who controlled European Russia.

In 798 Charlemagne (742?–814 CE), the Frankish king and aspirant to the title of Holy Roman Emperor, sent an embassy to Baghdad, proposing an alliance against Irene. In 801 al-Rashid reciprocated, sending

an embassy to Aachen under the direction of a Jewish merchant named Isaac and bearing a number of notable gifts, including a water clock and an elephant. No practicable alliance resulted, but certain general accords were reached concerning trade and travel. In 806, however, a spectacular Abbasid military victory against Irene's usurper, Nicephorus, forced Byzantium into humiliating submission.

Al-Rashid's rival in the far west, the Umayyad emirate of al-Andalus (on the Iberian Peninsula), also benefited from contacts with the Abbasid caliphate, primarily in matters of culture and technology. Al-Rashid's patronage of the musical innovator Ziryab prompted envy in the Ziryab's master, the head court musician Ishaq al-Mawsili, who orchestrated Ziryab's exile. In 821 CE Ziryab arrived in Cordoba, where he rapidly became a favorite of the emir and an arbiter of taste among the Andalusí aristocracy, single-handedly revolutionizing western Mediterranean cooking, poetry, music, and dress habits.

The Abbasids had long-standing trade and diplomatic relations with China, both via the Indian Ocean and overland, through the mediation of Jewish merchants, the Radhans. From the mid-eighth century, China and the caliphate were political rivals in Transoxiana (northeast of Khorasan), and Muslims began to intervene occasionally in Chinese internal power struggles. A regular series of diplomatic missions had been sent to the Tang emperors since the early 700s; this was continued under al-Rashid.

The Thousand and One Nights, a collection of folktales and parables drawn from Arabic, Persian, and Indian traditions, several of which feature al-Rashid as a leading character, are the primary source of the caliph's image in the modern West. The first European-language version appeared in French in 1704 and was eventually followed by Richard Burton's *The Arabian Nights* (1885–1888). Thanks largely to this, al-Rashid enjoys a reputation as a cultured, wise, and effective ruler, an assessment which does not necessarily conform to the historical evidence.

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See also Islamic World

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Hatshepsut

(REIGNED c. 1503–c. 1482 BCE)

QUEEN OF EGYPT

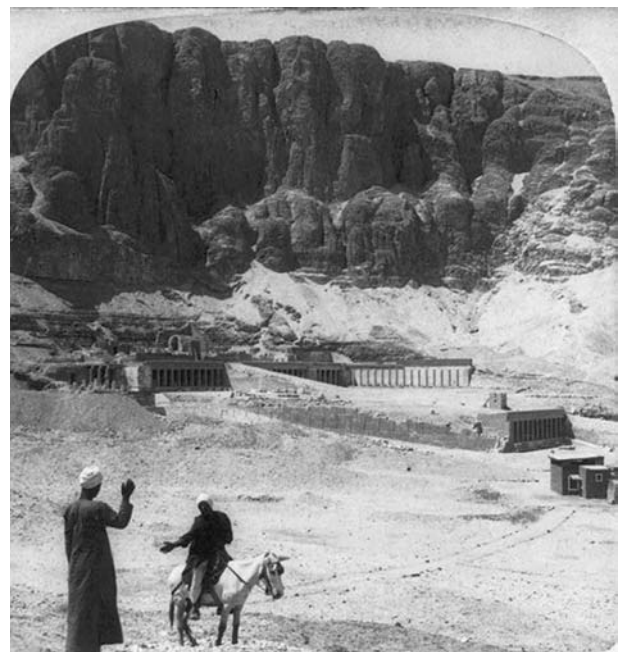
Historians debate the significance of Hatshepsut, one of few female rulers of ancient Egypt. Traditionally she has been viewed as a schemer who usurped the throne, while more recent scholarship acknowledges the complex difficulties she would have faced as a female ruler some 3,500 years ago. Her seemingly uninhibited access to natural and human resources, however, allowed her to engage in a substantial building program throughout Egypt.

Hatshepsut was queen of ancient Egypt during the eighteenth dynasty (c. 1540–c. 1307 BCE). She was the daughter of pharaoh Thutmose I, half sister and wife of Thutmose II, and stepmother of Thutmose III, with whom she ruled over Egypt for a period of about twenty years. Although the precise nature and circumstances of her rule and subsequent demise are unclear, she is one of the most outstanding and controversial figures in the long history of pharaonic Egypt.

With only few female examples to follow, she ascended the throne of Egypt, first as regent on behalf of her young stepson Thutmose III, the official successor to Thutmose II, and subsequently had herself crowned as ruler of Egypt with all necessary royal titles and regalia. This she was able to legitimize in two ways. First, there was her pure royal bloodline and fine genealogy, which are well expressed in her original queenly titles before she assumed kingship: “daughter of the king,” “sister of the king,” “the god’s wife,” “great royal wife,” and “mistress of the Two Lands” (Seipel 1977, 1045; Bryan 2000, 238). Second, she presented herself as the explicitly designated heir to her father Thutmose I, a political claim that

was theologically reinforced by the story of her divine conception and birth to the god Amun, artistically depicted on the walls of her funerary temple in Deir el-Bahari (western Thebes).

The political success of her otherwise conservative and traditional reign can be measured by a relatively stable foreign policy, active interaction with Egypt’s neighbors Nubia (present-day northern Sudan and southern Egypt) and the Levant (present-day Syria and Lebanon, and her seemingly uninhibited access to natural and human resources, which allowed her to engage in a substantial building program throughout



Funerary temple of Queen Hatshepsut, Deir el Bahari, Thebes, Egypt (dating to c. 1482 BCE). The story of Hatshepsut’s divine conception and birth to the god Amun is depicted on the walls.

Now my heart turns this way and that, as I think what the people say. Those who shall see my monuments in years to come and who shall speak of what I have done. • **Attributed to Hatshepsut (r. c. 1503–c. 1482 BCE).**

Egypt. The great temple to her divine father Amun at Karnak received particularly generous additions in form of chapels, shrines, obelisks, and a monumental gateway (the Eighth Pylon). Her own funerary temple at Deir el-Bahari has been described as “the most complete statement in material form of her reign” (Bryan 2000, 241) and is one of the finest examples of ancient Egyptian architecture, combining elements of previous periods with unique artistic representations of her time. Famous is the detailed depiction of her naval expedition to the land of Punt in East Africa, which brought back such exotic goods as wild animals and live incense trees. Also represented is the transport of two monumental obelisks from the granite quarries in Aswan to the temple at Karnak on a large barge, which even by today’s standards represents a major engineering feat, given their estimated weight of about 144 metric tons each. Her court obviously enjoyed a rule of affluence and generous economic support from their queen, which is reflected in an increase in wealthy and richly decorated private tombs of officials and the large number of private statues of such individuals produced during her reign.

Interestingly, numerous art representations of her time document how she slowly abandoned her feminine features in favor of more male—that is, kingly—attributes, including beard, bare and masculine upper torso, and kilt, which has often been interpreted by some scholars as a desperate attempt for political acceptance as ruler. That her rule may not have been fully endorsed by her contemporaries is supported by her successor Thutmose III’s deliberate destruction of her monuments and radical efforts to erase her from public memory, although this evidently happened only decades after her death. Other evidence that her rule may not have been fully endorsed includes inscriptions from her funerary temple, in

which she expressly requests her officials’ loyalty and support.

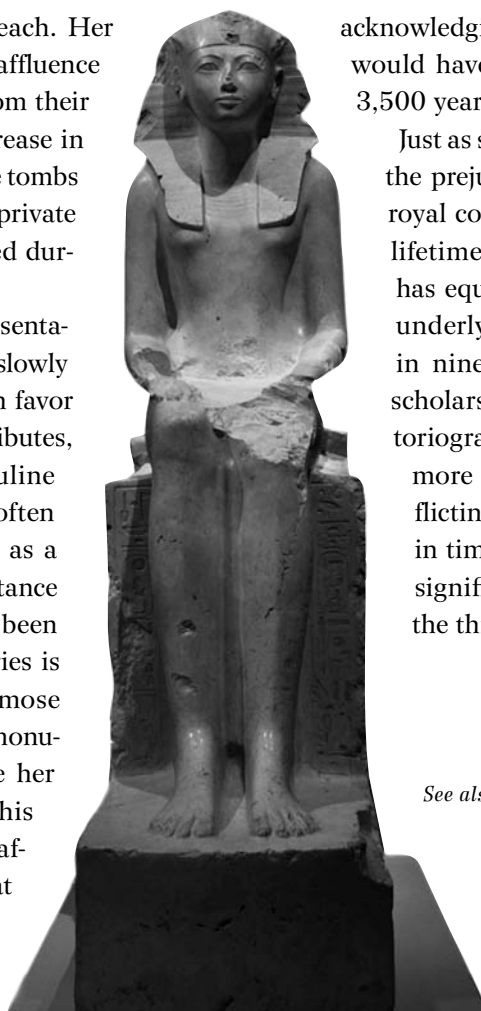
There is no record of the causes and circumstances of Hatshepsut’s death and no royal mummy has as yet been attributed to her, which could provide forensic evidence for the nature of her death. There is also considerable scholarly confusion over the place of her burial, as there exist at least three sarcophagi and two tombs, one in the Valley of the Queens (probably made during her time as wife of Thutmose II), the other in the Valley of the Kings near Luxor.

Hatshepsut was one of the very few female rulers of Egypt, and her historical significance has been widely debated by scholars. She has traditionally been viewed as a schemer who usurped the throne and had a disastrous reign. More recent scholarship views her as a “remarkable woman” (Tyldesley 1996, 1), acknowledging the complex difficulties she would have faced as a female ruler some 3,500 years ago.

Just as she might have been subjected to the prejudices of a predominantly male royal court culture during and after her lifetime, Hatshepsut’s historiography has equally suffered from the tangle, underlying gender biases expressed in nineteenth- and twentieth-century scholarship, which may make any historiographical assertions about her rule more revealing of the prejudices afflicting scholarship at different points in time than of the actual nature and significance of Hatshepsut’s rule on the throne of the pharaohs.

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See also Egypt



Hatshepsut (sculpted c. 1473–1458 BCE). Indurated limestone. Metropolitan Museum of Art.

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Hausa States

Archaeologists and historians believe that the Hausa States emerged around the late 900s CE in present-day Nigeria; by the eleventh century their walled towns were flourishing centers of trade. High levels of education, accomplishments in crafts and trade, and civic organization characterized the Hausa and left a lasting legacy; the Hausa are active in the politics of present-day Nigeria.

The foundation myth of the Hausa peoples says that the seven “true” Hausa States were founded by the seven sons of Bayajidda, who had come from the east (some say from Baghdad) to the state of Daura (in present-day northern Nigeria). Bayajidda had won the hand of the queen of Daura in marriage by slaying an evil serpent; she was the mother of the seven sons. The seven states these sons founded were Kano, Zazzau (Zaria), Gobir, Katsina, Rano, Daura, and Biram. Legend also has it that Bayajidda had other sons by a concubine; these sons are the supposed founders of the “illegitimate” Hausa states of Zamfara, Kebbi, Nupe, Gwari, Yauri, Yoruba, and Kororofa.

Early History

Archaeologists and historians believe that the Hausa States emerged between the late 900s CE and the early 1200s. Hausa towns are known for their walls, which enclose not only houses but farmland as well. This custom of building walls was maintained as the size of the enclosed settlement grew.

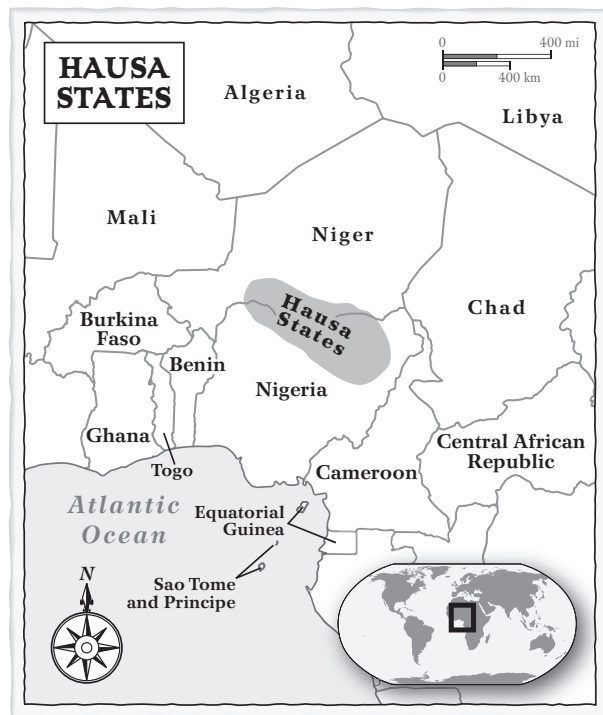
By the eleventh century, these walled city-states were flourishing centers of trade. Kano, Katsina, and Gobir, for example, had developed their

caravan trade and services. Each state also had certain specialties—Kano specialized in leather goods and weaving, for example, while Zazzau specialized in the slave trade. In addition, they drew on the wealth of their rural areas, which produced millet, sorghum, sugarcane, and cotton. Cattle were also plentiful. However, their prosperity put them under steady stress from Songhai and Kanem-Borno, their neighbors to the west and east. The Hausa States paid tribute to the latter empire, and, in turn, fought with their other neighbors, conducting slave raids and open warfare with the Jukun and Yoruba states.

Islam and the Hausa States

Although Islam was known in the Hausa States by the eleventh century, tradition credits its introduction to an Islamic missionary who came from Bornu in the fifteenth century. The elite accepted the new religion first, practicing it while continuing to adhere to older religious traditions. Islam offered the elite a means for organizing an efficient state and promoting education. It also tied the rulers and those who received an Islamic education into a vast Islamic trading network and gave them a language used in the network, Arabic. The Islamic connection strengthened ties with North Africa that already existed through trade (the Hausa States were a southern terminus of the trans-Saharan trade route). These ties were also supported by pilgrimages to Mecca.

At about the same time that Islam fully penetrated the ruling class, Fulani pastoralists came to Hausaland. Muslim Fulani, who had adopted Islam in the area now known as Senegal, settled in Hausa cities in the thirteenth century and began to intermarry



when the Fulani religious leader Usman dan Fodio (1754–1817) waged jihad among the Hausa States, seeking to convert the common people to Islam and to purify the practice of the faith among the elite. Usman dan Fodio's Sokoto caliphate, established around 1808, included the Hausa States, who remained part of Sokoto until Sokoto was defeated by the British in 1903. The high levels of education, accomplishments in crafts and trade, and civil organization that characterized the Hausa States left a lasting legacy, however, and the Hausa (many of whom live in present-day northern Nigeria) are active in the Nigerian politics. Today the Hausa also live in southern Niger, as well as in parts of Ghana and Togo.

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with Hausa. These Hausa-Fulani became an educated religious elite, crucial to Hausa rulers because of their knowledge of government, law, and education.

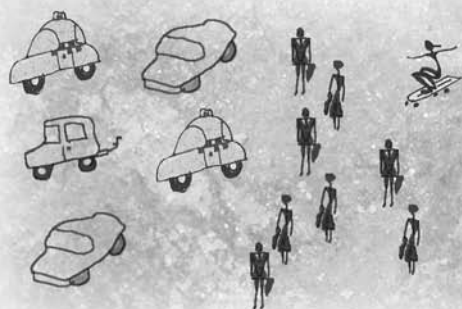
Later History

In the thirteenth and fourteenth centuries, there was a loose alliance of the seven Hausa states, based on the Hausa language and common customs as well as the modified Islam practiced by the ruling class. The ruler of each state, the emir or sarki, collected taxes from the various guilds within the state. These commercial guilds were self-regulating and loyal to the emir, who offered them protection. The guilds' members were commoners, both men and women depending upon the craft. Slaves maintained the cities' walls and grew the food.

From the early sixteenth century, the Bornu state in the Lake Chad basin area grew increasingly powerful; it brought the Hausa States under its control, and they remained subject to Bornu through the eighteenth century. Then at the dawn of the nineteenth century, Bornu's control was overthrown

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Henry the Navigator

(1394–1460)

PORTUGUESE PRINCE

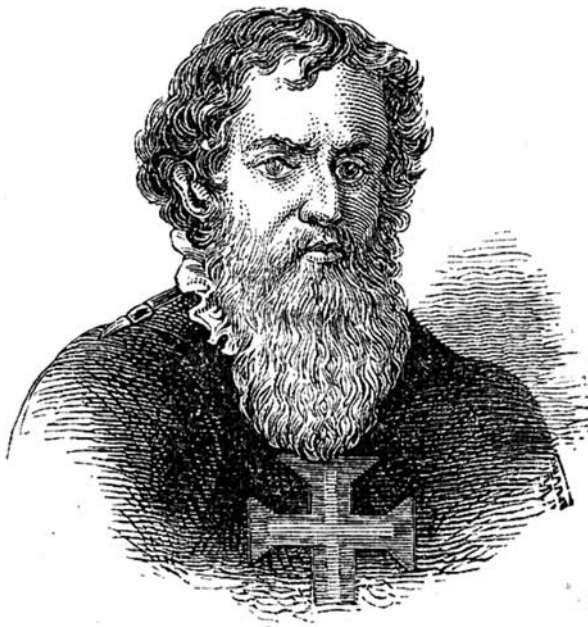
The Portuguese prince Henry (1394–1460)—the epithet “Navigator” was not bestowed upon him until the nineteenth century—is best remembered for the voyages he sponsored to the West African coast, one of which resulted in the discovery of a sea route to India. But his settlements and the ensuing economic development in Madeira and the Azores held more immediate benefits for him and for Portugal as a whole.

Henry the Navigator was one of the earliest and most vigorous proponents of European overseas expansion and exploration. Prince Henry (Dom Henrique) was the third son of King João I of Portugal and his queen, Philippa of Lancaster, of England’s house of Plantagenet. Often credited with founding a school of navigation at Sagres in southwest Portugal, Henry was not actually a mariner—he probably never sailed farther than northern Morocco—and he had no school at Sagres or anywhere else. A strong advocate of the church militant, in 1415 he took part in the capture of the Moroccan port of Ceuta, a place of little economic or strategic significance that proved costly to maintain but impossible to surrender without loss of face. A subsequent attack on Tangier failed, and Henry eventually turned to more commercial pursuits that took his caravels into the archipelagoes of the eastern Atlantic and along the Guinea coast of West Africa. Although the chief impetus for these voyages was commercial, Henry was also motivated by an abiding belief in the medieval concepts of just war and crusade, and an obligation to preach the true faith to heathens and crusade against heretics and Muslims.

Henry’s overseas interests began when he was made donatory (lord-proprietor) of Madeira in 1433, whereupon he began to organize the colonization and exploitation of the islands for lumber, wine, and sugar. He likewise began the settlement of the Azores in 1439. Henry’s interest in the coast of Africa derived from his failed efforts to establish Portuguese control of the Canary Islands, which were claimed by Castile. In the 1420s, Henry began sponsoring a series of voyages down the west coast of Africa in the hope of establishing a kingdom rich in slaves, gold, and the produce of the coastal fisheries. By 1434, the Portuguese knew the coast of Africa as far south as Cape Bojador, in the latitude of the Canaries—widely believed to be the southern limit of safe navigation. By 1445, a large expedition (reportedly numbering 26 ships) sailed for Río de Oro, and a few vessels reached the Senegal River and Cape Verde even farther south. Three years later a fort was built on the island of Arguin (in Mauritania), from which the Portuguese conducted a lucrative trade in ivory, gold, and slaves. By Henry’s death twelve years later, the Portuguese had explored about 4,000 kilometers of the coast of West Africa, including expeditions up the Senegal, Gambia, and other rivers, and they had discovered the Cape Verde Islands.

Henry’s sponsorship of these voyages was predicated on returns, and he set clear objectives for his captains, regulating the distances to be covered and ensuring that details about the navigation and geography of the coast, trade goods, and local languages were collected. One result of these African voyages was the discovery of a sea route to India, but neither Henry nor any of his contemporaries had any

He took his first step when he was twenty-five years old and built himself a modest house on the southern tip of Portugal, where he could stand with Europe at his back, Africa before him, and the Unknown crashing against the boundaries in between. • **Jean Fritz (b. 1915)**



Prince Henry was less of a navigator than an avid sponsor of voyages to the West African coast.

such end in mind. They did, however, believe they could reach the lands of Prester John, the Ethiopian Christian king of medieval legend and a potential ally in any prospective crusade against Islam. The route there was thought to be via the Sinus Aethiopicus, a hypothetical African gulf first described in the fourteenth century, from the head of which Ethiopia was thought to be a short march overland. The possibility that a sea route around Africa to the Indies might exist took hold only after the Portuguese had passed Cape Verde and turned east into the Gulf of Guinea.

Although the economic development of Madeira and the Azores held more immediate benefits for him and for Portugal as a whole, Henry is best remembered for his sponsorship of the African voyages, thanks especially to the flattering chronicle of his

contemporary, Gomes Eanes de Zurara. More reliable is the account by the Venetian Alvise Cadamosto, who made two voyages under Henry's auspices in 1455 and 1456. On the strength of Henry's Plantagenet ancestry, Samuel Purchas also claimed that he was the "true foundation of Greatnesse, not of Portugall alone, but . . . especially of these Heroike endeavours of the English" (Russell 2001, 1). The more extravagant epithet, "Navigator," was not bestowed until the nineteenth century. Another more immediate legacy is the indirect connection between Henry and Christopher Columbus. In 1446, Henry assigned the administration of Porto Santo in the Madeiras to Bartolomeu Perestrelo, who had grown up in Henry's household and who probably advised him on the subject of Atlantic navigation. Perestrelo's daughter Felipa Muniz married Columbus, who thereby received her father's maps and papers.

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See also Portuguese Empire

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Herodotus (c. 484–425 BCE) was the first Greek to write a history of the world as he knew it. The central topic in his nine-book-long *Histories* examined conflict and war among Greeks and Persians. He gathered information by traveling, asking questions, and comparing the stories he was told; although he sought the truth, he often repeated what he heard, warning his readers that he did not personally believe it.

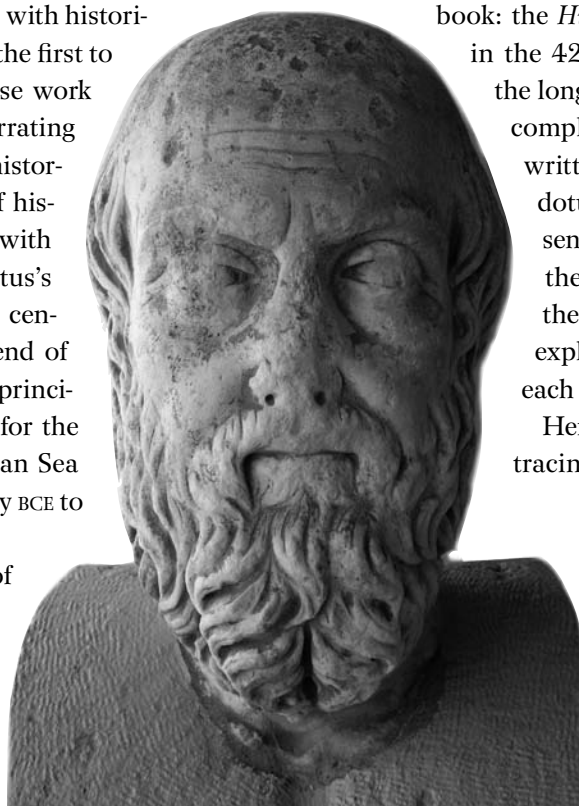
Herodotus was the founder of the Greek historiographic (relating to the writing of history) tradition. Although earlier writers may have written books dealing with historical topics, Herodotus was the first to write in Greek a long prose work that had the purpose of narrating and explaining a complex historical event. The tradition of historical writing that began with the publication of Herodotus's work during the late fifth century BCE extended to the end of antiquity and provides the principal source of information for the history of the Mediterranean Sea basin from the sixth century BCE to the seventh century CE.

No ancient biography of Herodotus survives. The only sources for his life are his work and an article in a tenth-century CE Byzantine encyclopedia entitled the *Suda*. These

sources suggest that he was born in the southwest Anatolian city of Halicarnassus (in modern Turkey) and died in the south Italian city of Thurii. The presence of both Greek and Carian (relating to a region of Anatolia) names in his family indicates that he was probably of mixed Greek and Carian ancestry. Except for his being exiled after an unsuccessful attempt to oust the tyrant of Halicarnassus and his death at Thurii, the only known events of Herodotus's life are the travels he mentions in his work. These were extensive and included visits to Athens, Egypt, North Africa, southern Italy, and the Black Sea.

Herodotus is known to have written only one book: the *Histories*. When it was published in the 420s BCE, it was probably one of the longest, if not the longest, and most complex prose works that had been written in Greek to that time. Herodotus stated his purpose in the first sentence of the *Histories*: to preserve the memory of the great deeds of the Greeks and barbarians and to explain the reason they fought with each other.

Herodotus achieved his purpose by tracing in the first four books of the



Bust believed to be a portrait of Herodotus, Ancient Agora Museum, Athens. In antiquity the “Father of History” was called the “Father of Lies,” but modern scholars have confirmed his reliability and many of his fantastical accounts of events.

The only good is knowledge, and the only evil is ignorance. • **Herodotus (484?–430/420 BCE)**

Histories the rise of the Persian Empire from its foundation in the mid-sixth century BCE to the outbreak of the Ionian Revolt in 499 BCE. Accounts of the history and culture of the various peoples conquered by the Persians interspersed throughout the narrative provided a panoramic view of the world known to the Greeks. In the final five books he then narrated in detail the conflict between the Greeks and Persians from the Ionian Revolt to the failure of the Persian king Xerxes's great invasion of Greece in 480–479 BCE. Uniting his account was the idea that the conflict represented a struggle between Europe and Asia and freedom and slavery as represented by the leading peoples of each continent: the Greeks and the Persians.

Herodotus's work immediately became the standard Greek account of the Persian Wars. Thucydides and other Greek historians continued his work, but none tried to redo it. Already in antiquity, however, Herodotus's status as a historian was controversial, as evidenced by the tendency to refer to him not only as the "Father of History" but also as the "Father of Lies" because of the numerous fantastic stories in his work. The rehabilitation of Herodotus's reputation as a historian began during the Age of Discovery with the recognition of numerous parallels between his work and European explorers' accounts of the Americas. Further evidence of his reliability was provided by archaeological discoveries confirming the accuracy of many of his descriptions of non-Greek monuments and burial practices. Finally, recent scholarship has demonstrated close parallels between Herodotus's methods as described in the *Histories* and traditional oral historians in Africa and elsewhere, thereby vindicating his claim that his work was primarily based on two sources: his personal observations and critical evaluation of what people told him during his travels.

Herodotus's position as the founder of the Greek historiographic tradition is secure, as is his

contribution to world history. That contribution was threefold. He was the first to use the criterion of reliable evidence to distinguish historical time. He also introduced the idea of the succession of empires that provided the basic framework for European world histories until the nineteenth century CE. Most important, however, he recognized that all peoples have their own independent histories and established the principle that historians should rely on native sources to write the history of any people. Although Herodotus's practice was not always equal to his principles, and although his most important successor, Thucydides, narrowed the scope of mainstream Greek historiography to contemporary war and politics, the *Histories* continued to provide a model and fundamental source for world histories throughout antiquity.

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See also Greece, Ancient; Engines of History; World History, Writing of

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Hinduism

Hindu culture began about 4000 BCE on the Indian subcontinent; today some 900 million followers worldwide practice Hindu traditions, or the “Vedic dispensation.” Early Vedic culture was founded on the premise that humans are not born equal, and it considered domestic and public rituals indispensable to the well-being of society and the individual. Pluralism was a hallmark of its religion, with many gods and goddesses invoked in Vedic hymns.

English scholars in the early nineteenth century coined the term *Hinduism* as a collective name for the indigenous religions of India. They added *-ism* to the designation *Hindu*, which goes back several thousand years to the Persians and the Greeks, who had so named the people living beyond the Indus River. It may be impossible to define Hinduism as one religion, but it makes perfect sense to speak of a Hindu culture and Hindu civilization. Over thousands of years there grew on the Indian subcontinent a distinctive culture embracing all spheres of human activity. From India it was carried to large parts of Southeast Asia, including Sri Lanka, Myanmar (Burma), Indonesia, and the Philippines. Ships coming from India via the Philippines may well have reached Central America centuries before Columbus. Today the various streams comprising Hinduism claim more than 900 million followers worldwide.

Origins

Hindus call their own tradition *Vaidika dharma*, “the Vedic dispensation.” Its original heartland was the Sapta Sindhava—the area watered by the seven great

rivers flowing into the Indus. Later this region came to be called the Punjab, the Five-River Country, after one river had dried out and another had changed its course. *Itihasa Purana*, a vast ancient narrative literature that is the repository for ancient Indian history, contains tales of the beginnings of humankind and of Hindu civilization, including long lists of dynasties going back several thousand years.

To account for the close affinity of many European and Indian languages, around 1860 British scholars invented the Aryan invasion theory. Not supported by literary or archaeological evidence but based purely on linguistic speculation, they asserted that a warrior people, coming from the West, invaded India and imposed their culture, their language, and their social structure on the indigenous population. The supporters of this theory equated this invading people with the Aryans mentioned in the Vedas, India’s ancient liturgical literature (c. 1500–1200 BCE). Such an invasion would have been quite a feat, considering that the indigenous population of India at that time is estimated to have been around 23 million. When in the 1920s the first major remnants of the Indus Valley civilizations were unearthed—ruins of large, ancient, well laid-out cities—these were first identified with the fortified places described in the Vedas as having been destroyed by the Aryans’ warrior-god Indra. It later emerged that these cities were not destroyed by foreign invaders but abandoned by 1750 BCE, probably because of drastic climate changes. The Sarasvati River, described in the Rig Veda as a mighty river, had completely dried out by 1900 BCE.

There is growing agreement today that the Vedic civilization originated around 4000 BCE or earlier in northern India itself (and not in the west) and that

the Indus civilization (c. 2500–1750 BCE, now called by some scholars the Sindhu-Sarasvati civilization), was part of it. When the settlements in Sapta Sindhava had to be abandoned, most of the inhabitants moved east into the densely wooded region of the land between the Yamuna and Ganges Rivers (called the Yamuna-Ganges Doab), which became the new center of Vedic civilization. Archaeologists affirm that there is no cultural break between the earlier and the later civilizations in North India.

The Hindu Holy Land

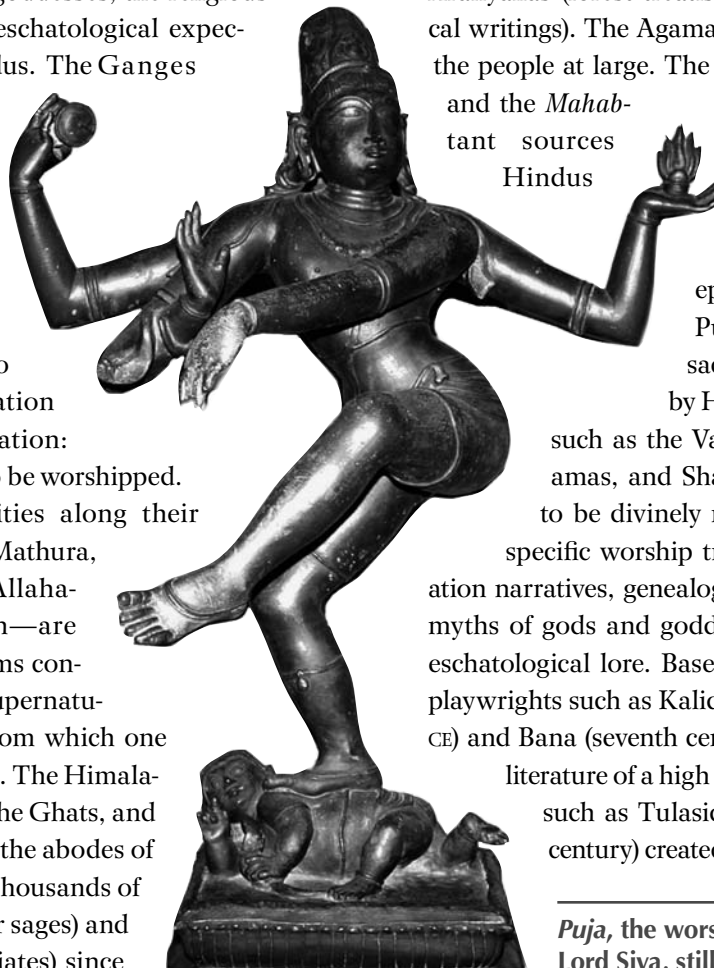
Hindu civilization was from the very beginning closely tied to the land that is present-day India. “The Motherland” has a unique emotional appeal for Indians: the physical features of the country are associated with the gods and goddesses, the religious practices, and the eschatological expectations of the Hindus. The Ganges (or, in Sanskrit and Hindi, Ganga), the Yamuna, the Narmada, the Kaveri are not only reservoirs of water and transportation ways, but also sources of inspiration and ritual purification: they are divinities to be worshipped. The towns and cities along their banks—Varanasi, Mathura, Nasik, Prayaga (Allahabad), and so on—are places where pilgrims congregate to obtain supernatural blessings and from which one can reach liberation. The Himalayas, the Vindhyas, the Ghats, and the Nilgiri Hills are the abodes of gods, sanctified by thousands of *rishis* (visionaries or sages) and *sannyasins* (renunciates) since

ages immemorial. Ancient and medieval India was dotted with numerous sacred groves—large uninhabited areas in which the gods dwelled and where nobody could harm an animal or a tree with impunity. Countless temples embellish India’s landscape, visibly transforming the country into a holy land, where gods dwell among humans.

Scriptures

Hindu scriptures have come down through the ages in two major streams: the Vedas and the Agamas. The Vedas are the literature of the religious professionals, to be memorized and recited by Brahmins only. They comprise the four Samhitas (collections of hymns: Rig Veda, Sama Veda, Yajur Veda, and Atharva Veda), a large number of Brahmanas (ritual texts), the Aranyakas (forest treatises) and Upanishads (mystical writings). The Agamas are the sacred literature of the people at large. The great epics—the *Ramayana* and the *Mahabharata*—are also important sources of Hindu religion: many Hindus consider the *Bhagavad Gita*, a section of the *Mahabharata*, to be an epitome of their religion. The Puranas, which are Bible-like sacred books, are widely read by Hindus from all classes. Texts such as the Vaisnava Samhitas, Saiva Agamas, and Shakta Tantras are considered to be divinely revealed by the followers of specific worship traditions. They contain creation narratives, genealogies of kings and patriarchs, myths of gods and goddesses, edifying stories, and eschatological lore. Based on these texts, poets and playwrights such as Kalidasa (flourished fifth century CE) and Bana (seventh century CE) produced dramatic literature of a high order in Sanskrit. Poet-saints such as Tulasidasa and Kambha (sixteenth century) created popular vernacular versions

Puja, the worship of great Hindu gods like Lord Siva, still involves old Vedic rituals.





Hindu Sadhus (Holy Men) walking in a procession.
Photo by Klaus Klostermaier.

of the classics, performed in plays and (since the advent of film) dramatized on screen to this very day.

The language of the most ancient literary documents of Hinduism, Vedic, is an archaic form of Sanskrit, the refined language standardized around 400 BCE by Panini. Sanskrit was called *deva vani*, the “language of the gods,” a sacred language. It became the language of Hindu scholarship as well as Hindu religious literature.

Rituals

Domestic and public rituals were a prominent feature of early Vedic culture, considered indispensable for the well-being of society and individuals. The praxis and the theory of *yajna* (sacrifice) can justly be called a science: hundreds of intricate and interrelated rules had to be memorized and observed. The construction of the altars required the solution of difficult arithmetic and geometric problems. The altars were built with special bricks arranged in a prescribed geometric

pattern, and were conceived of as symbols of the human body as well as of the universe: the 360 bricks of an altar represented the 360 days of the year and the 360 bones in the human body. Additionally, astronomical knowledge of a fairly high order was required to determine the right time for the performance of Vedic sacrifices, and ancient text explained how to determine the positions of celestial bodies at different times of the year.

The routine of fixed, or obligatory, rituals structured the course of the year and the lifecycle, creating a framework supporting communities and families. Rituals accompanied the change of seasons, as well as the stages in the development of persons: public offerings ensured the fertility of fields and domestic animals, while home rituals accompanied birth, adolescence, marriage, and death. Occasional, nonobligatory, rituals were available to give spiritual support in special circumstances and additional comfort to individuals. In later centuries, when *puja*, the worship of great gods like Vishnu and Siva associated with images and temples, became the predominant form of religion, the old Vedic rituals were not given up. Besides the *pujas* the performance of Vedic rites continues to this very day: Brahmins recite Vedic hymns at initiations, marriages, and last rites.

Many Hindus participate in daily temple *pujas* and partake of consecrated food. Major temple festivals are great public events for every village and town. The performance of numerous domestic rituals, such as offering food to the image of a deity or, in the evening, rotating a plate with burning pieces of camphor before the image, is still very widespread in India.

Music is an important part of Hindu rituals. Vedic hymns are recited according to a definite pattern of pitches. Instrumental and vocal music, together with ritual dance, are indispensable ingredient in temple worship.

Societal Hierarchy and Government

Traditional Hindu society functioned on the assumption that humans are not born equal and that their



Flowers serve as offerings in the *puja* (worship) of Ganesh, one of the best-known Hindu gods. Also called the Remover of Obstacles, Ganesh is usually portrayed as having the head of an elephant.

birth in different *varnas* (classes) defines their specific rights and duties. Brahmans, born from the Great Being's mouth, were the custodians of the Veda, the highest in rank. Kshatriyas, born from the chest, were rulers and warriors. Vaishyas, born from the belly—businesspeople, artisans, farmers, and clerks—had to provide the necessities of life for society at large. Sudras, originating from the feet, were to serve the upper three classes. Ati-sudras, the people below the Sudras, are known in English as “untouchables.” They were outside the pale of Hindu society proper and were relegated to work that was considered ritually polluting, such as skinning carcasses, cleaning latrines, and disposing of the dead. They were not allowed to dwell in the village proper and were not entitled to using amenities reserved for caste people. Today, in spite of legislation forbidding discrimination, they are still often exposed to disadvantage and mistreatment. Each of the four classes

comprise of hundreds of *jatis* (subcastes) that also observe ranking among each other.

Duties varied not only according to *varnas*, but also with respect to one's stage in life. Men of the upper three *varnas* were to spend the first twelve years after their initiation with a reputable teacher. They then had to marry and to produce children. After the children had grown up they were to live lives of simplicity and meditation, and finally they were to become renunciates and as homeless pilgrims were to visit holy places till death relieved them of the burden of their bodies. In reality, relatively few men actually ended their lives as homeless pilgrims.

An important element of the Hindu tradition was the theory and practice of government. Kings were usually Kshatriyas, but Brahmans had great influence as advisers and ministers. One of the aims of the Hindu awakening that began in the early twentieth

God has made different religions to suit different aspirations, times and countries . . . one can reach God if one follows any of the paths with wholehearted devotion. • Ramakrishna (1836–1886)

century was to reestablish Hindu dominion after centuries of rule by non-Hindus. The Hindu Mahasabha, the first modern Hindu political party, proclaimed in its manifesto: “Hindus have a right to live in peace as Hindus, to legislate, to rule themselves in accordance with Hindu genius and ideals and establish by all lawful and legal means a Hindu State, based on Hindu culture and tradition, so that Hindu ideology and way of life would have a homeland of its own” (Pattabhiram 1967, 217).

The Indian struggle for independence from the British in the twentieth century was fought by many for the purpose of reviving Hindu civilization. Jawaharlal Nehru (1889–1964), the first prime minister of India (1947–1964), advocated secular socialism and state-promoted industrialization, calling steel mills and hydroelectric dams the “temples of the new India,” but under his successors the revitalization of Hindu culture became a major issue.

In former centuries Hindu rulers built temples and supported religious endowments. Today government-appointed temple boards oversee the activities and budgets of most large temples. Businesspeople and industrialists, together with the followers of famous gurus, found new temples all over India. Since independence in 1947, more new Hindu temples have been built in India than in the five hundred years before, amongst them the well-known Birla Temple in New Delhi. Today more than 25 million Hindus live outside India. In Southeast Asia, Europe, North America, Africa, Australia, and Oceania hundreds of Hindu temples have been built, often replicas of famous Indian temples, with Hindu priests performing Hindu ceremonies. The Vishva Hindu Parishad, or World Association of Hindus, founded in 1964 in Mumbai, is active in India and among overseas Hindus protecting and promoting Hindu culture.

The Transmission of Tradition

Vedic religion was family based: specific branches of the Veda were preserved in individual families. The home was also a center for religious practices. The sacred hearth fire was not allowed to die out. Husband

and wife together had to perform the domestic rituals. Families were responsible for the lifecycle rituals. Young boys moved into the families of gurus, to be taught. The role of the guru reached great prominence when specific worship communities developed under the leadership of charismatic personalities, who often claimed to be the embodiment of a deity. These religious leaders helped to shape mainstream Hinduism and still exercise great influence on Hindus at large. They regulate the lives of their followers and reinterpret scriptures and traditional teachings. Their writings—especially the commentaries on the Upanishads, *Bhagavad Gita*, and the Brahma sutras—are the main texts for students of Hindu theology. In some circles Vedic tradition has remained intact—in others, it has not. Instead of leaving home with a guru, many boys in big cities receive the sacred thread at the appropriate age and begin being taught traditional ethics and lore by a senior relative or a Brahmin who is a family friend.

Pluralism was a hallmark of Hindu religion from its very beginning. Many gods and goddesses are invoked in Vedic hymns, and Hindus continue to worship a great variety of deities in their temples. There is no creed to which all Hindus subscribe and no one doctrine or practice that is common to all Hindus, except perhaps the nominal acceptance of the Vedas as revealed scripture and the belief in karma and rebirth.

Education

The initiation ceremony at which the sacred thread was given to a young boy (now increasingly again to young girls) was the “second birth” which entitled someone to receiving instruction. It was given to the three higher *varnas*: Brahmans, Kshatriyas, and Vaishyas. Sudras and Ati-sudras were excluded. Traditionally, education was a high priority for Brahmans, whose early life was devoted to study and for whom life-long education was a duty. In addition to learning from a guru in his home, a student could attend a school attached to an ashram or temple. The well-organized, publicly and privately sponsored ancient Indian universities, such as Taksasila (now



Taxila, established c. 700 BCE) in the Punjab, and Nalanda (traditionally dated to the sixth or fifth century BCE, though archaeological evidence points to establishment around the fifth century CE) and Vikramasila (established c. 800 CE) in Bihar, had thousands of teachers and tens of thousands of students. They taught not only the Vedas, but also the “eighteen sciences,” later supplemented by the “sixty-four arts.” The basic curriculum included linguistics, arts and crafts, medicine, logic and dialectics, and spirituality.

High ethical standards were expected both from students and teachers. Students not only had to pass stringent examinations to prove their aptitude, they also had to live an austere and pure life. Hindus believed in a balance of values, however, as expressed in the four “aims of life.” It was legitimate to acquire wealth and to enjoy life, but one also had to practice morality and religion and to seek final emancipation from the bonds of this existence in order to lead a fulfilled life.

Ayurvedic Medicine

Ayurvedic medicine, whose principles derive from the Vedas, was cultivated systematically from early on. It was mainly oriented towards preventing diseases and healing through herbal remedies. Good health was not only considered generally desirable, but also a precondition for reaching spiritual fulfillment. The practice of medicine as a form of charity was widely recommended and supported by Hindu rulers. It was considered a charitable act to provide medicine to the sick free of charge, and it was one of the activities in which monks were encouraged to participate. Two Indian medical handbooks, the result of centuries of development, became famous in the ancient world far beyond India: the *Caraka samhita* (dating from 200 BCE to 300 CE) and the *Sushruta samhita*. Ayurveda was also applied to animals and plants; there is an ancient handbook for professional gardeners and a text for cattle-veterinarians. Other texts deal with veterinary medicine relating to horses and elephants. Ancient India also had veterinary hospitals as well

as animal clinics. *Goshalas*, places in which elderly cattle are provided for, are still popular in some parts of India. The scientific value of Ayurvedic pharmacology is being recognized today by major Western pharmaceutical companies, who apply for worldwide patents on medicinal plants discovered and described in ancient Indian texts.

Philosophy

India does not know the division between philosophy and theology that characterizes much of modern Western intellectual history. It is natural for Hindus with an enquiring mind to analyze and investigate the teachings of their traditions, and professional philosophers with a Hindu background deal also with religious issues in a philosophically meaningful way. Hindu philosophical systems are not mere abstract constructs, but paths for the realization of the highest purpose of life. Among the qualifications required for beginning philosophical study is the earnest desire to find liberation from the sufferings of the cycles of rebirth and death, which are caused by ignorance of the true nature of reality.

Among the six orthodox systems of philosophy (*darsanas*) is Samkhya, which teaches a general theory of evolution based on the interactive polarity of nature and matter on the one hand with spirit and soul on the other. All reality is subsumed under five-times-five principles that originate from one substratum. The twenty-five categories to which Samkhya reduces the manifold world became widely accepted in Hindu thought. A second *darsana*, the Yoga system of Patanjali, which dates to around 200 BCE, is wholly based on it.

Vaisesika, the third of the six *darsanas*, offers a theory of atomism that is possibly more ancient than that of the Greek philosopher Democritus (c. 460–c. 370 BCE), as well as a detailed analysis of qualities and differences. It also developed the notion of impetus.

Adhyatma vidya (the term refers to spirituality in general—not a specific system), the spiritual or inner sciences, which relate to Brahma, the supreme

reality, was considered the highest: it employed personal experience, a coherent epistemology, and the exegesis of revealed utterances. The Upanishads mention thirty-two *vidyas*, paths leading to the goal of all science. The knowledge aimed at through these was of a particular kind, involving a transformation of the student. The ideas of the Upanishads were further developed into the system of Vedanta philosophy laid down mainly in commentaries on the Brahma sutras ascribed to Badarayana (first centuries CE). Beginning with Shankara (eighth century CE) and continuing with Ramanuja (c. 1017–1137) and Madhava (1296?–1386?), the greatest spiritual minds of India have endeavored to cultivate that science of the eternal reality of the spirit.

Hinduism in World History

Membership in the Hindu community was for many centuries restricted to those who were born from Hindu parents and who had undergone the various sacraments that made a Hindu a full member of the Hindu community both here and in the beyond. Hinduism was always a “world religion” due to the fact that India has always been a densely populated, large country and thus home of a considerable part of humankind. In its heyday (prior to the Muslim invasion which began in the eighth century CE) India attracted students and pilgrims from all over Asia who studied at the large indigenous universities or visited holy places associated with such figures as the Buddha.

During the first half of the first millennium Hinduism also spread into most of Southeast Asia, as mentioned earlier. This period was followed by a prohibition to cross “the black seas” under threat of loss of caste. This prohibition was most likely a move to protect the Hindu community from erosion after the Muslims had invaded India and pressured Hindus to convert to Islam. Hindu thought and culture, however, were adopted by many foreigners who came into contact with India during this time. With the establishment of British rule in India in the eighteenth century and the advent of Christian

missions, Hindus’ interest in spreading their religion abroad was awakened: the much-celebrated presentations of Swami Vivekananda (1863–1902) at the World Parliament of Religions in Chicago 1893 and his subsequent journey through the United States and Great Britain resulted in the establishment of Vedanta centers in many places and a fairly widespread interest in Hinduism. The coming of ever more Hindu swamis and gurus to the West since the 1960s familiarized thousands with sectarian Hinduism and attracted many Westerners to Hindu religious communities. It was no longer deemed necessary to have been born Hindu, one could become a Hindu by accepting Hindu doctrines and ritual practices and by receiving initiation from a qualified Hindu guru.

By now millions of Hindus have settled all over the world and have brought Hinduism as their inherited faith to the places where they now live. Scientists with a Hindu background often endeavor to integrate their scientific specialties with Hindu traditional thought and thus consciously promote Hinduism as a modern faith. New Age literature, popular among the educated all over the Western world, is replete with Hindu ideas and images, which it presents as having anticipated modern scientific discoveries and insights. Both by virtue of the large number of adherents and the sophistication of its culture and philosophy, Hinduism is bound to be a major influence on the global civilization of the future.

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See also Harappan State and Indus Civilization; Philosophy, Asian

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History, Maritime

Maritime history is the study of the role mariners play in creating and maintaining commercial and cultural relationships between different parts of the world—in peace and in war. Commerce at sea and naval warfare are central to the development, structure, and expansion of local, regional, and international relationships.

Mariners have played a formative and often determining role in shaping the world as we know it, not just among people dependent daily on the sea for their livelihood, but for those who live deep in continental interiors well away from the tang of salt air. The study of maritime history is crucial to a proper understanding of the rise and fall of civilizations, human migration, and the resulting spread of language, religion, technology, religions and political systems, and flora and fauna across the world. It is equally important for understanding interactions over relatively short distances, both in enclosed seas like the Mediterranean and in continental interiors accessible by rivers and lakes.

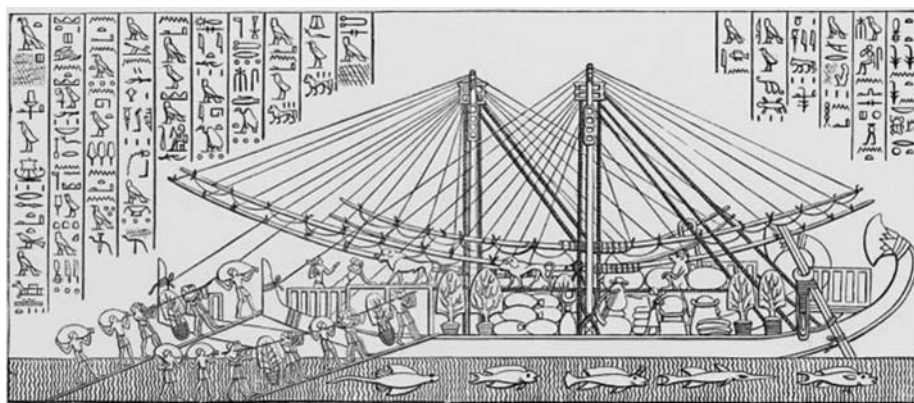
At the beginning of the twenty-first century, about 90 percent of world trade travels by water. Carrying goods by ship is in most instances more energy efficient than transporting goods overland. The energy required to move a ton of freight one kilometer by ship is about one-fifth that required to move it by train and as little as one-tenth that required to move it by truck. Ground transport has been an attractive alternative for shippers only since the development of railways, the internal combustion engine, and hard-top roads in the past two centuries. Until well into the twentieth century it could take as long for a ship's cargo to cross a pier as it did to cross the ocean.

The Start of Maritime Endeavor

Because of the diverse environments in which maritime endeavor takes place, the erratic diffusion of technology, and differences in approach to commerce, few generalizations about the course of maritime history are possible. People have been going to sea for tens of thousands of years: Australia was settled by sea from Indonesia fifty millennia ago, there are stone carvings of Scandinavian vessels from ten thousand years ago, and Scotland's Outer Hebrides were settled about 4000 BCE. Broadly speaking, before 1500 BCE, there was considerable regional interaction across Eurasia, but several maritime cultures evolved in relative isolation.

In terms of oceanic seafaring, the most impressive achievement occurred in Oceania, where between 1500 BCE and 1500 CE people settled virtually all the habitable islands of Polynesia, Melanesia, and Micronesia from the Solomon Islands to Rapa Nui (Easter Island) and New Zealand to Hawaii. To do this, they developed a diverse repertoire of vessels unlike anything found in Eurasia or elsewhere. Although they developed virtually no navigational instruments or written instructions, they navigated by a combination of celestial observation, reading winds and swells, and observing the habits of fish, sea mammals, and birds, a body of information transmitted by oral tradition.

Sails were apparently unknown in the Americas before 1500—except perhaps to mariners who traded between Ecuador and the Pacific coast of Mexico. But traders paddled dugouts and canoes on sea routes from New York to Newfoundland and inland to the Great Lakes and Mississippi. Less well documented



“Ship of Hatasu laden with produce from Punt.” From *Egypt: Descriptive, Historical and Picturesque* by Georg Ebers. London: Cassell, 1881–1882.

are the achievements of the Arawak and Carib of the Caribbean, and the coastal people of the Pacific Northwest, southern Alaska, and the Aleutians. Farther north, Arctic and sub-Arctic mariners traveled, fished, and whaled from skin boats along the northern coasts of Eurasia and North America.

The Ancient World

The first civilizations whose use of ships and boats can be said to have contributed to or reflected the advanced states of their technology and political organization are found from the eastern Mediterranean to the western Indian Ocean in the third millennium BCE. On the Nile, the mastery of shipbuilding and navigation was crucial to the political, economic, and social unification of Egypt. The earliest depiction of a sail is on a late-fourth-millennium vase found in Upper Egypt. By the reign of Sneferu (c. 2600 BCE), the Egyptians were sailing regularly to the Levant for cedar wood. They also traded on the Red Sea to Punt (Somalia, perhaps) for myrrh, gold, electrum (an alloy of gold and silver), incense, and cosmetics. Egyptian records also include the first accounts of fighting between ships, in twelfth- and thirteenth-century BCE accounts of the invasion of the Sea People. The Egyptians also used the Nile to transport thousand-ton blocks of stone hundreds of kilometers from their quarries to the building sites of the pyramids.

Comparable activities advanced domestic and foreign commerce, as well as state formation and expansion, among Egypt's Bronze Age (third to second millennia BCE) contemporaries, notably Minoan Crete (and later Mycenaean Greece) and the Levantine port cities of Ugarit, Byblos, and Tyre. Mesopotamians

used boats on the Tigris and Euphrates rivers and the network of canals they built for flood control, irrigation, and transportation, and in the third millennium BCE there was long-distance trade under sail between the Persian Gulf and the Indus Valley civilizations. Shipping laws in the Code of Hammurabi anticipate later Mediterranean law and custom, and the third-millennium Epic of Gilgamesh includes the archetypal stories of the ark and flood, and of the sea-wandering hero. The former are best known from the later Hebrew Bible, while Homer's Odysseus (early first millennium BCE) is the best-known model for the latter. Neither Gilgamesh nor Odysseus can be identified with specific historical figures, but the geography of the stories is grounded in the experience of the authors' respective contemporaries.

The first examples of maritime expansion on a scale that allowed for sustained two-way transmissions of culture, as distinct from one-way migrations or low-volume trade, come from the Mediterranean world of the early first millennium BCE. In the ninth century BCE, the Phoenicians established colonies at Carthage, in the western Mediterranean, and on the Atlantic coasts of the Iberian Peninsula and Morocco, and the Greeks began to colonize the Black Sea and northern Mediterranean. The Persian invasions of Greece in the early 400s BCE were defeated in part by the Athenian victory at the naval battle of Salamis, which helped foster the concept of a dichotomy between maritime powers and land-based powers, although such distinctions are rarely clear-cut.

Maritime matters assumed ever greater importance in the following centuries, and the Pharos (lighthouse) at Alexandria—the city that Alexander of Macedon (Alexander the Great) founded and which remains



a major port 2,300 years later—and the Colossus marking the entrance to Rhodes harbor were among the wonders of the ancient world. During the Hellenistic period, Alexander's successors embarked on the world's first naval arms race, a major source of friction being the control of eastern Mediterranean timber supplies, a competition for naval resources not unlike that which made Baltic forests a focus of attention in the eighteenth and nineteenth centuries CE, or Persian Gulf oil in the twentieth and twenty-first centuries.

Rome wrested control of the western Mediterranean from the Carthaginians during the Punic Wars of the third and second centuries BCE. Although Roman authors disdained the sea, the empire's survival depended on secure shipping lanes. Pompey the Great eradicated Mediterranean piracy in the first century BCE, Octavian's victory at Actium was the defining battle of the Civil War, Rome fed on grain imported from Sicily, Spain, and Egypt, and the empire's northern borders held only so long as the Romans controlled navigation on the Rhine and Danube rivers and the English Channel. When Germanic and Slavic tribes reached the Mediterranean in the fifth century CE, the different fortunes of the Roman West and Byzantine East were due partly to the fact that the Byzantines had an effective navy.

A coherent picture of maritime activities in Asian waters between India and China emerges only around 1000 BCE, and does not come into sharp relief for another five centuries. There are glimpses of Indian maritime life in Hindu writings like the Rig Veda and the Upanishads (late second millennium BCE) and Buddhist scriptures, as well as decrees from the reign of India's Asoka (third century BCE). Alexander had renewed the Mediterranean world's interest in the Indian Ocean, and the most detailed accounts of trade are from Greek and Roman geographies—Ptolemy described the world as far east as the Malay Peninsula—and merchants' handbooks from the second century BCE to the second century CE. Despite western participation in Asian sea trade, indigenous traders were of far greater consequence. In addition to their traffic in material goods, maritime merchants

carried Buddhism and Hinduism from India to Southeast Asia. The importance of Indian merchants in mainland Southeast Asia is illustrated in two foundation stories for the kingdom of Funan, a productive rice-growing region that dominated east–west trade from Oc Eo, a port on the Gulf of Thailand near the Mekong River.

As was true in Egypt and Mesopotamia, Chinese maritime endeavor began on the rivers that they tamed by building canals for irrigation and transportation. Although the Chinese traded with Korea and Japan from an early date, they were more attracted to the southern trade, which began with the absorption of the southern Yue people in the fourth century BCE, and with their first forays against Vietnam, some of which were carried out by sea. By the time Funan declined in the fifth century CE, Chinese monks and traders were regularly sailing through Southeast Asia as far as Ceylon (Sri Lanka) and other lands within the Buddhist world.

The Medieval Period

The rise of Islam in the seventh century led to a reorientation of Mediterranean trade, signaled especially by the Muslim capture of Alexandria and the rerouting of Egypt's grain trade from Byzantium to Jidda, Mecca's port on the Red Sea. The Muslim caliphs relied on indigenous maritime communities in the eastern Mediterranean to man their fleets. Despite several naval assaults, the Muslims did not take Byzantium; but they did capture a large portion of the east–west trade in a Mediterranean world divided between a Christian north and Muslim south. The balance of power began to shift again around the year 1000, when Italian merchants penetrated the Mediterranean and Black Sea trading networks of the Byzantine Empire. The Venetians were well placed to capitalize on the Crusades at the end of the century. Although the First Crusade reached the Levant overland, the coastal Crusader states required reinforcement by sea, and Venetian, Genoese, Pisan, and other merchants secured favorable privileges for the flourishing Asian trades in exchange for their services.

You tell the men there are four ways of doing things on this ship: the right way, the wrong way, the Navy way, and my way. They do things my way, and we'll get along just fine. • **Humphrey Bogart (1899–1957) as Lt. Commander Philip Francis Queeg in *The Caine Mutiny***

One reason for the decline of Roman rule in the British Isles in the fourth and fifth centuries had been pressure from Germanic raiders from north-west Europe. The maritime expansion of northern peoples accelerated under the Vikings, whose rapid and far-flung expansion was facilitated by the adoption of the sail, which reached the Baltic in about the seventh century. The Vikings raided the British Isles and the fringe of Europe as far as Muslim Spain. They crossed the North Atlantic to Iceland (in the wake of Irish monks), Greenland, and Newfoundland. The rivers of eastern Europe carried them from the modern Baltic states, Poland, and Russia to the Caspian and Black Seas. Between the tenth and thirteenth centuries, many Vikings served in the Byzantine emperor's elite Varangian Guard. The most celebrated of these was Harald Hardradi, who in 1066, as king of Norway, invaded England with a fleet of three hundred ships. He was defeated by the Anglo-Danish king Harold Godwinson at the Battle of Stamford Bridge, near York. Two weeks later, Harold Godwinson was killed at Hastings in battle with the army of William (the Conqueror), Duke of Normandy. A descendant of the first Viking raider/settlers of northern France, William had crossed the English Channel with some nine hundred ships to claim the English throne.

In many respects, William's victory marks the end of the Viking Age. Over the following century, the Baltic and North Sea trades passed to Germanic merchants who sailed under a loose confederation known as the Hanseatic League and specialized in bulky commodities such as grain, timber, fish, and wool, carried in capacious ships known as cogs. The prosperity of northern Europe would depend on such trade for centuries to come.

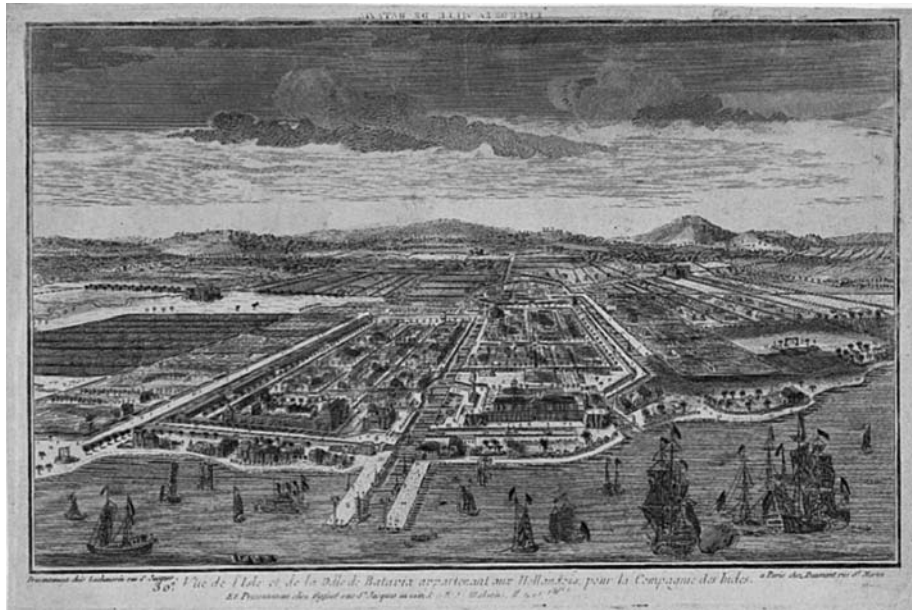
Of greater moment in this period was the Islamic expansion, via Arab and Persian sea traders, down the coast of East Africa as far as Mozambique and eastward to China. During the nearly seven centuries spanned by the Tang and Song dynasties (618–1279), China's overseas trade flourished. The expatriate Arab, Persian, Armenian, Jewish, Christian, Malay, and Japanese traders who thronged the ports of Guangzhou,

Quanzhou, and Yangzhou numbered in the hundreds of thousands. Periodic bouts of violent xenophobia, in which tens of thousands of foreigners were killed, compelled these foreigners to withdraw temporarily to northern Vietnam.

Increased traffic between the China seas and the Indian Ocean affected the politics of Southeast Asia. By the seventh century, ships had abandoned the Southeast Asian coastal route to sail directly across the South China Sea, and the Srivijayan states straddling the Strait of Malacca dominated the route between the Far East and the Indian Ocean. East-west trade also enriched southern India and the Maldiv Islands. In the eleventh century, the expansionist Chola kingdom of southern India invaded Srivijaya, 2,400 kilometers east across the Bay of Bengal. The Cholas could not capitalize on their victory at such a distance, but the emerging state of East Java was able to supersede its weakened neighbor. In their ascendancy, the Javanese inaugurated the first large-scale exploitation of the Spice Islands (Melaku) in eastern Indonesia. Thanks to the prosperity at either end of maritime Asia, cloves, nutmeg, and mace became staples of trade from Song China to Fatimid Egypt and the Mediterranean.

The Early Modern Period

Merchant states jockeying for control of Mediterranean and European trade routes spread a common commercial culture across Christian Europe. Their success depended on the outcome of this period's two major struggles: the Christian advance against Muslim Spain, and the Muslim expulsion of Crusaders from the Levant in 1291. While the latter forced Venetian, Genoese, and other Christian merchants to seek their fortunes elsewhere, the loosening of Muslim control in the Strait of Gibraltar literally opened a new outlet for their commercial aspirations. The start of direct sea trade between the Mediterranean and Northern Europe in the 1270s was a catalyst for economic growth in northwest Europe, which gradually came to rival the Mediterranean in commercial prosperity.



Jan Van Ryne, *View of the Island and the City of Batavia Belonging to the Dutch, for the India Company* (1754). Hand-colored engraving. From the collections of the KITLV/Royal Netherlands Institute of Southeast Asian and Caribbean Studies, Leiden.

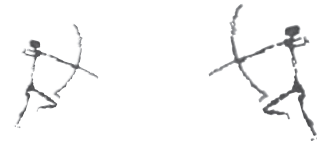
As a result of increased maritime commerce between northern Europe and the Mediterranean, shipbuilding underwent several crucial changes that resulted in the development of the first generation of full-rigged ships in the fifteenth century. These large, strongly built carracks, or *naos*, were built around a skeletal framework, rigged with a combination of square sails (set perpendicular to the centerline of the hull) and fore-and-aft lateen sails, and carried centerline rudders instead of side-mounted steering oars. In addition to having increased carrying capacity and operational endurance, these carracks could mount heavy ships' guns, the use of which altered the nature of commerce and naval warfare.

Important though developments in the European and Mediterranean world were in facilitating Europe's overseas expansion, the lure of Asia's wealth was no less significant. Indian merchants from Gujarat (northwest India) and modern Bangladesh had long composed the major foreign trading community in Southeast Asia. When these states were converted to Islam in the 1200s, the religion and its associated cultural norms—including language and law—spread easily through the networks of trade to the east. By the end of the fifteenth century, Islam was firmly established in maritime Southeast Asia—the first western monotheistic religion to take root east of India.

At the start of China's Yuan dynasty, Khubilai Khan launched four overseas invasions: of Japan (1274 and

1281), Vietnam (1283), and East Java (1291). None was successful, but the expedition against Java helped pave the way for the emergence there of the Majapahit Empire that dominated the trade of Island Southeast Asia for two centuries. Between 1405 and 1433, the Ming dynasty exercised more immediate influence on the region. During this period, seven Chinese fleets under the Muslim eunuch Zheng He passed through the region en route to Indian Ocean ports from Ceylon to East Africa, the Red Sea, and the Persian Gulf. With crews numbering in the tens of thousands, these fleets suppressed piracy, introduced coinage as a medium of exchange in Southeast Asia, and bolstered the importance of the Muslim communities there. Although Chinese overseas commerce was officially banned in the mid-1400s, the twin movements of Muslim and Chinese merchants through Southeast Asia were the two most significant factors behind the emerging prosperity that attracted European interest at the end of the fifteenth century.

Europe's conquest of the Atlantic began with the start of direct maritime trade between the Mediterranean and northern Europe in the thirteenth century. Within two hundred years, Europeans had settled Madeira, the Azores, and the Canary and Cape Verde Islands. Motivated by a combination of ideology and profit characteristic of much subsequent European expansion, in the mid-1400s Portugal's Prince Henry ("the Navigator") promoted the exploration



of the coast of West Africa, a source of gold, slaves, and cheap pepper. These efforts led to the search for a sea route to the Indies, which culminated in the epochal voyages of Christopher Columbus's transatlantic crossing (1492), Vasco da Gama's opening of a sea route between Europe and the Indian Ocean via southern Africa (1497–1499), Ferdinand Magellan's and Juan Sebastian del Cano's east–west circumnavigation of the globe (1519–1521), and Andrés de Urdaneta's discovery of a west–east route across the Pacific (1565). The age of Columbus and his contemporaries (including shipwrights, bankers, cartographers, and gun-founders) is a defining point in world history. But the achievements of the age were the result of collective and cumulative experience, not of individual inspiration. Moreover, progress was hard won; mortality rates for sailors were high and there were many failures, notably the search for the Northwest and Northeast Passages to the Orient.

The Birth of Global Trade

Approaches to maritime trade differed according to a variety of factors. When the Spanish reached the Americas, they encountered no preexisting maritime commercial system, which helps account for the explosive if haphazard way their American Empire grew. In Asia, the Portuguese sailed into a mature commercial network the keys to which they learned early on. Although the Portuguese crown monopolized the spice trade and issued passes for indigenous traders, the Portuguese never dominated all regional trades and many found it more lucrative to participate in the so-called country trades within Asia rather than on the long-distance routes between Asia, Africa, Portugal, and Brazil. There were comparable differences of approach to trade between the Dutch and English in the seventeenth century. No sooner had the Dutch jurist Hugo Grotius articulated a philosophy of free trade in *Mare Liberum*, to counter the Portuguese monopoly, than he helped justify Dutch monopolies in Asia directed specifically against the English, who fell back on trade in high-volume, low-value Indian goods. Both the Dutch and English East

India companies would lay the groundwork for their respective governments' nineteenth-century colonial policies.

The movement of people on a scale sufficient to create social transformation through the transmission of language, religion, and material culture, as well as crops and flocks, accelerated after 1500. The most important vectors for cultural change were the mass movement of African slaves (between the sixteenth and nineteenth centuries), European transatlantic and Australian emigrants (through the twentieth century), and Chinese and Indian coolie laborers transported to Africa and Latin America (nineteenth and twentieth centuries).

In purely commercial terms, intraregional trades remained more important than long-distance ones. Chinese shipping carried the bulk of Asian trade until the nineteenth century, while the maritime integration of northern and southern Europe that began only two centuries before Columbus continued vigorously throughout this period. The bulk of Dutch wealth derived not from the Indies, but from European trades and fisheries. Europeans also dominated the Atlantic world, a rapidly evolving commercial and cultural space bounded by Europe, West Africa, and the Americas, where their influence was indelible.

Starting in the eighteenth century, Europeans undertook a wave of exploratory voyages animated by a spirit of scientific inquiry, though their objectives remained practical: safe navigation, new markets, and the desire to make allies or conquests to forestall the advance of rivals. In the 1760s, a French expedition under Louis-Antoine de Bougainville included ethnographers, zoologists, and botanists, an approach emulated by England's James Cook and his successors. Britain and France sustained active programs of exploration in the Pacific that continued through the Napoleonic Wars, after which the Russians and Americans were active in the business of maritime exploration. Russian efforts were ancillary to the country's eastward expansion across Siberia and Alaska, while the Americans were motivated by rivalry with the British in the Pacific Northwest and Pacific whaling grounds. Efforts to find the Northwest



Chinese and Japanese ships and small boats engage in battle in a bay near a fort, between 1895 and 1900. Chugoku hanga (Chinese) woodblock print. Library of Congress.

and Northeast Passages also resumed in the nineteenth century; the latter was transited in 1878–1879, the former in 1903–1906. The coastal exploration of Antarctica began around the turn of the twentieth century. At the same time, prompted by the need to lay submarine cables and to study the health and potential of commercial fisheries, and later by the need for submarine mining and environmental monitoring and atmospheric research, scientists turned to the exploration of the oceans themselves.

The Steam Age

The advent of commercially viable steam navigation—signaled by the launch of Robert Fulton’s *North River Steam Boat* in 1807—followed by the development of iron and steel shipbuilding, transformed the world. It would take thirty years for steam to be adapted to ocean shipping, but in the meantime steam vessels capable of stemming powerful river currents did as much to open continents as they would to connect them.

The development of the steamship coincided with the Pax Britannica, which was guaranteed by Britain’s overwhelming maritime superiority. The Royal

Navy was functionally equal to that of the next two largest navies combined, and by 1900 Britain’s merchant fleet accounted for more than half the world’s shipping. The rapid growth of industrial capitalism in Europe and North America helped ensure the colonial aspirations of nations with long histories of overseas commerce like France and the Netherlands, and gave rise to new maritime powers such as the United States, Germany, Japan, and to a lesser extent Russia. The need for coaling stations contributed to the burst of European colonialism at the end of the nineteenth century. The cost of fuel (a new element in shipping costs) led to the construction of the Suez and Panama Canals, among others, and dramatic redirections of ocean commerce. Almost overnight, age-old harbors astride sailing ship routes became backwaters while others such as Singapore, on more direct routes favored by steamers, became major trading hubs.

Maritime rivalry was among the factors that led to the outbreak of World War I, and at the start of the twentieth century citizens in maritime countries took a keen interest in both their navies and their merchant fleets, especially North Atlantic passenger ships. The United States merchant marine



Fred Pansing, *New Battleship Maine, Building at Cramp Works, Philadelphia* (c. 1900). The first USS *Maine* sank in 1898 at the onset of the Spanish-American War. A second *Maine*, built by William H. Cramp and Sons, launched in 1901.

emerged from World War I as a major maritime power, second only to Britain. Thanks to an aggressive shipbuilding program in World War II, the U.S. merchant marine and navy were the world's largest by 1946.

Since 1950, the world's merchant fleet has grown enormously, nearly threefold in the numbers of ships and more than fivefold in total tonnage. At the same time, industry consolidation and huge gains in efficiency due to containerization and computerization since 1960 have reduced the numbers of people employed in maritime industries and forced port facilities away from traditional urban centers such as London and New York. This transition has gone all but unnoticed in the West because in the last century European and American ship operators began transferring their ships to "flags of convenience"—foreign registries with more lax labor, safety, and environmental standards. In Asian countries such as Japan, South Korea, and China, however, merchant shipping and shipbuilding is an integral part of the national economy, a fact that suggests an imminent reorientation in the balance of world power.

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See also Columbus, Christopher; da Gama, Vasco; Hanseatic League; Henry "the Navigator"; Magellan, Ferdinand; Navigation; Piracy; Sailing Ships; Spices; Zheng He

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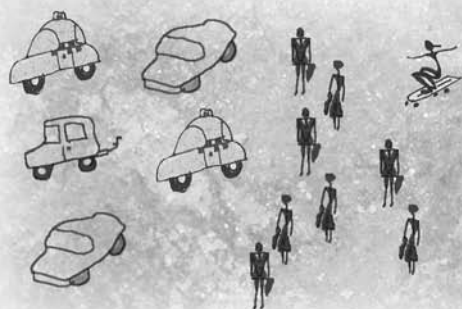
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History, Oral

Oral history is a field of study concerned with obtaining, interpreting, and preserving historical information from verbal accounts. Eyewitnesses, or at least contemporaries to an event or period of time, can provide historians with important primary source materials, often from several points of view.

Oral history focuses on eliciting information (oral accounts) from people who actually experienced or witnessed historical events. It differs somewhat from the fields of folklore and ethnography (cultural studies), which also collect verbal information from living persons. All of these fields of study rely heavily on interviews, but they pursue different goals.

In general the folklorist seeks to uncover folk traditions known throughout a group, and the ethnographer seeks to unravel the cultural patterns and organizational structure of a group. Both the folklorist and the ethnographer attempt to interview a representative sample of people to uncover general cultural patterns, although many ethnographers are also fond of collecting biographies that embed a great deal of historical context. The folklorist and ethnographer therefore focus on reconstructing oral traditions. Oral traditions are verbal accounts of events from the more distant past that have been handed down over generations and are shared by a group of people. Oral traditions tend to become modified during long time periods, often serving to identify and legitimize a group. As one moves further and further into the past, history often fuses with legends and myths in oral tradition and folkloric accounts. Nonetheless, the boundaries dividing these fields of study are often blurry because

cultural traditions often embed intriguing information about a group's actual past, and contemporary oral history accounts frequently reveal insights into a people's culture.

Early Uses of Oral History Accounts

The incorporation of oral accounts into written histories is undoubtedly as old as history itself. Indeed, oral accounts would have predated the invention of writing as the primary means by which events and ideals of the past were captured for a group's posterity. Oral transmission has also been the usual manner in which histories and traditions have been passed from generation to generation in nonliterate societies worldwide. Among the earliest historians to explicitly rely on oral accounts was the ancient Greek historian Thucydides, who interviewed participants in the Peloponnesian Wars (460–404 BCE). Other examples abound throughout history. For instance, Franciscan friars in sixteenth-century New Spain (Mexico) relied on "the memories of the old men" to record the histories and customs of the indigenous people in their native language (Dibble and Anderson 1982, 10), and the French writer Voltaire (1694–1778) questioned lords and servants alike in preparing his history of the French kings.

Oral History: Methods and Goals

As a systematic field of study, oral history is relatively young. In the United States formal interest in oral history dates from 1938 with a suggestion by the U.S. historian Allan Nevins to establish an organization to collect oral as well as written accounts of significant events from people who had participated

The record—history—exists only in the media, and the people who make the media, make history. • James Monaco (twentieth century)



Pierre Bonirote, *A Neapolitan Story-Teller* (1840). Oil on canvas. Folklorists and ethnographers study oral histories handed down from generation to generation and eventually incorporated into written history.

in those events. The idea persisted and developed into the formation of the Oral History Association in 1966. Oral history enterprises have gained popularity in Latin America since the 1960s and in Europe since the 1970s and 1980s.

Oral historians emphasize the collection of verbal information through interviews. Other oral sources, such as scripted performances and the spontaneous recording of unrehearsed events, may embed historical information but are usually not used as major sources in a deliberately designed oral history study. The oral historian, in collecting oral accounts, has a particular research question in mind and a set of questions to elicit meaningful information about that question.

By necessity oral history focuses on the most recent generations whose memories can be tapped for their personal experiences and involvement in the historical events or moments of interest to the historian. The field has evolved from its initial interest in prominent people to an interest in everyday witnesses and participants, with ethnic and gender diversity of particular recent importance. Sophisticated digital technologies of the twenty-first century enable oral historians to accurately record interviews orally and visually and to efficiently store, preserve, and access the interviews.

Limitations, Issues, and Significance

Like historians relying on written accounts, oral historians recognize the imperfection of their data sources: memories falter, people idealize past experiences, and narratives can be selective, biased, or even fabricated. Every person sees an event from his or her unique perspective, and this perspective involves not only personality traits but also cultural background. So, for instance, Sioux oral accounts of the Battle of the Little Bighorn, on 25 June 1876, vary wildly. This variation probably derives not from faulty or selective memories, but rather from the style of Sioux military tactics that favored individual exploits over coordinated action, preventing any one warrior from gaining an overall picture of the battle. Problems in oral history can also arise from the interview experience itself: interviewers' very questions and manner can channel narrators' accounts, and, on the other hand, narrators may tailor their accounts to satisfy their perceptions of interviewers' requests. Historians are well aware that the themes driving the historical enterprise itself reflect changing political and social climates.

Like any field, oral history is not without its issues. One such issue revolves around the fundamental

mission of the field. Should it provide a record for future generations, or should projects be aimed at more immediate interpretations of recent history? Other issues reflect social changes. Should oral history serve as a means through which voices of disenfranchised persons can be heard? Additional issues concern methodologies. Should the original tapes or their transcripts be considered the primary sources? Should the people interviewed be asked or allowed to edit transcripts of their interviews? Philosophical issues mirror general trends in other social science fields, particularly a consideration of the impact of the interviewer on the interview itself and on the quality of the data collected.

Historical enterprises benefit from reliance on as wide an array of complementary primary sources as possible. Oral history adds a unique dimension to the font of primary source material. Recent research pursues a wide range of topics and gathers oral accounts from a wide spectrum of people. Oral history also has practical applications in land use claims, historic preservation, governmental and business history, and cultural impact studies.

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See also Letters and Correspondence; History, Social

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History, Social

Historical narratives are commonly populated by the activities of states, intellectuals, and military leaders. Social historians argue that “good” histories must pay attention to ordinary people outside the realm of power; they must explore human activity and experience—such as work and leisure, emotions and the senses, or poverty and oppression.

The term *social history* can have several related definitions. The basic definition involves the exploration of the history and the historical role of groups who are outside the mainstream of power: working classes and peasants, slaves, women, the young—the list can be considerable, but the purpose is consistent. Social historians argue that these groups have a serious history, stretching from early in the historical record, and that this history powerfully shapes the activities of states, intellectuals, military leaders—the greats who more commonly populate the historical narrative. Social historians are also interested in exploring the histories of a wide range of human activities, contending that these, too, have a serious past that helps explain how human beings function at various points in earlier times and indeed in the present. These activities and experiences can include leisure, work, emotions, the senses, crime, family relationships—the list is essentially as long as our capacity to define aspects of the human condition that change over time.

Some social historians have argued that their approach involves a basic orientation to the whole of human history; others are content with a substantial reshuffling of their discipline’s standard list of topics.

Good histories have always included some social history—some attention to ordinary people and some awareness that human life consists of activities that affect each other, within which politics, for example, has a place but not a monopoly on attention. Formal social history, however, began to be defined in France during the 1930s but was not picked up in the English-speaking world until the late 1950s and 1960s, when many important works were published. Since its inception as a clear subfield of history more generally, social history has evolved. Initial efforts concentrated strongly on topics such as social protest, class structure, and mobility, with great interest in quantitative research and links with sociology. By the 1980s interests were shifting toward more qualitative efforts—sometimes called the “cultural turn”—and alliances with anthropology. Currently, as the cultural turn recedes a bit, scholars are discussing new directions and revivals of older emphases.

Social history and world history have a productive but sometimes uncomfortable, and still incomplete, relationship. Social history was focused and active at least a decade before the rise of serious modern interest in world history, and the separate beginnings inevitably raise issues of coordination. Furthermore, world history was often defined particularly in terms of the doings of great people—kings, general, and philosophers. Some partisans even argued that, because the lives of ordinary people are rather similar across societal lines, with shared poverty and oppression, they do not warrant much world historical focus, at least until modern developments brought the masses more prominently into the picture. This is an outdated argument, which no world historian would now embrace, but it did color the relationship between social



A drawing of six lamps and/or vessels unearthed by archaeologists in Jerusalem in the nineteenth century. Social historians often examine artifacts that illuminate aspects of ordinary peoples' daily lives.

history and world history for some time. For its part social history was often conceived of in terms of great place specificity. Several of the path-breaking U.S. entries into the definition of what was long called the “new” social history centered only on New England. French studies often focused on individual regions because of their particular geography and traditions. Other social historians used nations as units because of the social impact of political systems and national cultures. Source materials also dictated this rather narrow geographical impulse. Because they explore unfamiliar aspects of history, often involving groups who left little explicit documentation, social historians have frequently been tied to regional or national data sets, which are not always easy to access even on

this level. Finally, social historians during the 1980s began to pay increasing attention to cultural factors, beliefs, and forms of expression and discourse—with the “cultural turn.” As with cultural anthropology, to which the cultural approach was closely related, this attention usually encouraged social historians to take reasonably small areas as their essential purview. Thinking on a global scale was difficult.

Subjected Peoples

Yet social history has obvious bearing on world history and vice versa. Both disciplines typically deal extensively with peoples subjected to the control of others. In fact, scholars usually conceive of African history in social-historical terms, as it has surged during the past three decades—with attention to activities of peasants and workers and to popular resistance to and collaboration with outside authorities—as an alternative to older approaches that privileged colonial governments and discounted African history outside their purview. The insights from women’s history, as a branch of social history, concerning not only women themselves but also larger social frameworks, have been irresistible to world historians, and projects designed to incorporate women’s history into world history have been endemic (belonging to a particular people or country), if not yet fully conclusive, for two decades. Finally, social history itself has reached a new point of self-definition early in the twenty-first century, and appeals to reconsider geography are growing, suggesting more intensive linkage in the future.

Social history and world history remain somewhat separate. Many topics of social history, particularly the exploration of behaviors well outside the realm of politics and formal intellectual life, have yet to find a world historical application. Often, in fact, scholars have explored these revealing topics mainly in a Western context, and the topics lack as yet sufficient breadth even for significant comparative statements.

Nevertheless the connections are impressive, and they will surely expand as scholars in both disciplines interact more closely. Growing interest in the development of global contacts, as a basic concern of world

history, inevitably involves social issues: for example, in the impact of global trade or production systems on the organization of work and on social inequality. Growing interest in food habits as a social history topic readily embraces the importance of global interchange.

Even in social history's early years, a number of larger statements suggested important linkage with world history. One of the deans of French social history, Fernand Braudel, wrote persuasively of some common social structures around the Mediterranean, providing a shared framework for daily lives and ordinary people despite apparent national and religious barriers. Research of this sort, aimed at defining regions not according to religion or political systems, but rather in terms of agricultural patterns, village types, and popular cultures, could serve as a vital component of world history if the approach expanded to additional regions. Some historians and anthropologists dealing with family structures launched a somewhat similar effort to define basic family types—around household size, kinships systems, and the like—on a global basis, again often combining regions held distinct in most accounts of specific civilizations or separating regions within a presumed single civilization.

Without assuming that common people are everywhere alike, scholars realized by the 1980s that social historical findings in one society might have applicability in others. A seminal work in Western social history, E. P. Thompson's *Making of the English Working Class*, explored the value systems involved in labor protest as the Industrial Revolution took shape. A key element was what Thompson called the "moral economy," a set of expectations about work loads, treatment by employers, skill levels and training, and other job-related issues, that artisans had developed before the advent of modern, machine-based factory industry. New conditions, including novel pressures on work time and pace, violated the moral economy, which in turn both motivated recurrent protest and shaped protest goals. This moral economy turned out to be highly relevant to protests by other traditional workers, peasants as well as craftspeople, against the

advent of more capitalistic economic arrangements, including those imported under the framework of an increasingly global economy during the nineteenth century. James Scott was instrumental in showing the relevance of the moral economy in protest movements in south and southeastern Asia; following his lead other scholars applied it also to the history of Latin America. Here, then, was another huge potential in linking social history and world history: the applicability of significant reactions first studied in one area to other areas despite substantial differences in prior economic and cultural structures. In this case also, as with the early efforts at a social history-based regionalization, great opportunities exist for further work based on common human responses to roughly comparable challenges.

Comparative Applications and Chronological Patterns

As world history has gained ground, two other applications provide the most common linkages with social history. The first application is comparative. Comparisons of social structures or social experiences constitute an obvious way to utilize one of the standard world history approaches, with its emphasis on individual societies or civilizations analytically enhanced by discussing differences and similarities while also acknowledging the standard social history preference for geographically specific research.

Relying on work by area specialists, many world historians thus compare basic social systems in the classical period (c. 1000 BCE–500 CE) and after, noting the similarities, but more obviously the differences, among India's caste system, the slave-based system common in the Mediterranean, and the social system in China as it was (partially) shaped by Confucian values. Scholars have devoted more intensive analysis to slave systems themselves, probably the best-developed comparative category in social and world history. Comparison between ancient Mediterranean and later Middle Eastern slavery and its more recent U.S. counterpart highlights the greater range of occupations, and often the higher political status,



of the earlier systems, although connections existed between Roman and U.S. slave laws. Comparisons within the Americas have emphasized the greater physical brutality and higher mortality rates of the Latin American and Caribbean systems, compared to that of North America, despite the greater racism that surrounded the institution in the United States. Recent comparative research has also extended to nineteenth-century processes of emancipation. Fruitful comparison has, finally, applied to Russian serfdom and South African slavery and race relations, along with U.S. examples.

Other major social history topics are just beginning to find comparative voice. Gender comparisons remain tentative, although scholars have made interesting analyses of Christian and Islamic impacts on women in the postclassical period (500–1450). Scholars have devoted considerable attention also to the less-unequal gender systems of a few nomadic peoples such as the Mongols, compared to those in civilizations. Comparisons of feminisms have mainly stayed within a North American–European orbit (including Russia). However, research on women in Asia and Africa inevitably invokes the more familiar Western historical experience, at least for comparative suggestions. The same applies to histories of the urban working class and to labor movements and also to the growing field of the history of disabilities. Researchers also make rich global comparisons of city types and of migration patterns. With all this, comparative opportunities remain considerable, particularly for those aspects of social history that involve the wider range of human experience, such as the emotions or the senses. Even the conditions of the elderly have drawn more comparative treatment from anthropologists than from historians, who continue to treat the history of old age mainly within a Western context.

The second widespread application of social history to world history involves efforts to develop chronological models of social change that will apply to many societies in a given time period or across several periods. Some of these models explore the results of intersocietal contacts or the impacts of global forces such as trade—the two other main approaches to world history besides comparison.

Before the early modern period, that is, before the sixteenth century, patterns are not easy to discern. Because of the considerable separation among major societies, regional developments often seem distinctive beyond general similarities such as patriarchal family structures. Contacts can be explored, for example, the Chinese adaptations of Buddhism in light of Confucian beliefs about women and family hierarchy. Chinese influence on Japan during the postclassical period worsened women's status, but not to Chinese levels, while ironically providing some elite Japanese women opportunities to innovate in Japanese cultural forms (left to them because Chinese forms were more prestigious) or Buddhism. Islam's limited influence on gender relations in sub-Saharan Africa was often noted by travelers such as the Arab traveler and author Ibn Battutah.

Some scholars, seeking more general patterns, have hypothesized a trend for the status of women to deteriorate in agricultural civilizations through time. The argument is as follows: more effective political power, as governments become more sophisticated, reduces women's informal voice. Growing prosperity provides an economic margin for elite men to treat upper-class women more ornamentally. A more cultivated aristocracy, turning from war, contributes to such ornamentation as well (women often gain functions when men are away at war). Patterns of deterioration can be traced in Tang China (618–907 CE), postclassical India, and the later Islamic Middle East. However, many exceptions exist, with periods of greater women's assertion in business or intellectual life, so the model remains tentative at best.

Global Forces for Social Change

Generalizations become firmer when global forces can be more clearly identified. Significant social history was built into the world economy theory, applied from the early modern period onward. According to the theory's formulators, a society's position in the world economy (assuming significant involvement) determined a characteristic labor system—from the coercive labor of peripheral societies (Latin America, Poland) to sharecropping

It should be known that history is a discipline that has a great number of approaches. • **Ibn Khaldun (1332–1406)**

in semiperipheral societies to low-paid wage labor in core economies. The theory has often been criticized, but it continues to deserve attention for its capacity to correlate social and economic change through time on a global basis. Correlations muddy by the later nineteenth century, with the abolition of serfdom and slavery, but a strong relationship between position in the capitalist global economy and working conditions continues to hold. Current discussions about the impact of globalization on economic inequality derive directly from earlier world economy patterns and issues.

World economy theory is not the only applicable model for global, or at least extensive, social change. The Columbian Exchange between the Americas and Afro-Eurasia demonstrates the important effect of early modern biological interactions (foods, animals, diseases, conquerors, and slaves) on population levels in the Americas, Africa, Asia, and Europe. Recent research has devoted greater attention to the impact of colonialism on gender relations, through a combination of economic shifts, including women's loss of manufacturing jobs and cultural and legal influences.

Additional patterns of global social change during the nineteenth and twentieth centuries—beyond the acceleration of the world economy and, for a considerable time, imperialism—are somewhat less well defined. Attention to the dynamic of modern revolutions has always maintained a social component, involving attacks on the ruling class and discussions of the mix of social groups carrying these attacks forward along with a revolutionary political agenda. Some scholars during the 1980s disputed the social-historical basis of the French Revolution of 1789, through greater emphasis on ideology, but it is being restored in modified form, with implications for the wider set of Atlantic revolutions through the mid-nineteenth century as well. Revolutions during the twentieth century called attention to conditions and roles of peasants, along with other revolutionary elements, from Mexico and Russia early in the century through Cuba and other Latin American risings from the 1950s to the 1970s. The impacts of revolutions, similarly, can be measured through degrees of social change, for example, in the extent to which the previously dominant landholding

class was displaced. The social bases and results of movements of national liberation are harder to define but also receive attention. Here, and to an extent with revolutions as well, involvement of women, which was often followed by subsequent constraints, adds to the social dimension of one of the twentieth century's major developments.

More broadly still, some social historians have grappled with larger processes of twentieth-century social change, associated with the decline of the traditional aristocracy (a virtually universal phenomenon wherever this class had a foothold) and the rise of a professional/managerial middle class. Comparing the precise patterns of professionalization within a larger set of trends combines the two main facets of social history on a global scale. Interpretations have applied particularly to industrial societies, headed by Japan and those in the West, but they can increasingly apply to other societies with a burgeoning middle class, such as China, India, and many parts of Latin America.

Consumerism is another phenomenon increasingly receiving attention in terms of global social change. Changes in popular culture and a blurring of traditional social boundaries—class, gender, age hierarchies—were wrapped up in modern consumerism as it fanned out from the West during the nineteenth and twentieth centuries. Systematic analysis remains sparse for a subject that long seemed too frivolous for serious historical attention. However, fascinating case studies are spreading. An examination of comic books in Mexico shows how a U.S. artifact was both taken up and modified by a neighboring culture from the 1930s onward. Current research on Islam shows the growing adoption of practices such as gift and card exchange during Ramadan, a fascinating innovation in a religious holiday traditionally devoted to abstinence. As with other global patterns, including, by the 1990s, “global history” itself, opportunities for significant generalization mix with challenges for comparative analysis.

During the past decade world historians have been attempting wider incorporation of social history topics and materials, constrained in part because of unevenness of research results concerning different

societies. More recently, social historians have committed to an active discussion of a wider geographical compass for their own work. Much remains to be done to bring the two disciplines into fruitful union, but the prospects are increasingly promising.

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See also Adolescence; Childhood; History, Oral; Sociology; Women's and Gender History

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Hitler, Adolf

(1889–1945)

NAZI GERMAN DICTATOR

Adolf Hitler, the dictator whose name conjures the horrors of the Holocaust, channeled his youthful frustrations into extreme German nationalism and growing anti-Semitism. Hitler instituted a profound social revolution in Germany, but it was highly exclusionary. Unleashed violence against Jews in November 1938 led to their resettlement in ghettos and, in 1942, to the Nazi's "Final Solution," a euphemism for the mass murder of all Jews.

Adolf Hitler is best known as the ultimate fascist dictator. After World War I he guided his National Socialist German Workers Party, popularly known as the Nazi Party, into prominence in Germany's Weimar Republic and in 1933 imposed a one-party dictatorship that steered Germany into World War II. Antidemocratic, antiforeign, anti-intellectual, anti-Bolshevik, and anti-Semitic, he was nevertheless charismatic, led an effective economic recovery, and, with help from propaganda minister Joseph Goebbels (1897–1945), developed powerful emotional and political control over most Germans by the late 1930s. Most historians consider Hitler to have been the key person who caused World War II and the Holocaust. In consequence, his very name is associated with evil.

Adolf Hitler was born in Braunau, a provincial Austrian town near Germany, to a minor customs official of uncertain parentage. The Hitler household was not happy, and Hitler was an undisciplined schoolboy who envisaged grand goals for himself as a loosely defined artist, perhaps as architect, set designer, or music critic, but his accomplishments fell far short of reality. Reduced to vagrancy, Hitler found relief

from his frustrations in extreme German nationalism, rabble-rousing politics, and growing anti-Semitism. Only Europe's call to arms in 1914 "saved" him. He joined a Bavarian regiment, preferring to render military service to Germany. Soldiering became his first real job.

Turning Failure to Success

A rarity among 1914 volunteers, Hitler survived four years of trench warfare, winning the German Iron Cross as a lowly corporal-runner (he was not considered officer material). This decoration allowed him to campaign freely in postwar German politics. The wounded veteran Hitler returned to Munich in 1919, working undercover to assess the myriad political movements that had emerged after Germany's defeat amid revolutionary turmoil. Hitler casually entered politics by joining one of the obscure parties to which the army had assigned him for surveillance.

From its outset Germany's Weimar Republic reeled under the harsh conditions imposed by the Versailles Treaty, especially its reparations clauses. Numerous extremist political parties arose, among them Hitler's Bavarian movement, which in 1921 took the name National Socialist German Workers Party with Hitler as its spokesman. The party adapted its unwieldy name to everyday usage by shortening the word *National* to *Nazi*, and Hitler personally chose the swastika, a hooked cross that became the movement's central icon. Yet, demagoguery won Hitler his central role. Prewar passions and prejudices that had existed in embryonic form within him came to the fore. An animated and indefatigable speaker (and reader), Hitler discovered at age thirty that he could rivet people's



This broadside of political cartoons published in Mexico City in 1942 ridicules the Nazi Party, Adolf Hitler, and Generalissimo Francisco Franco of Spain.

attention, be it in a beer hall or in a salon. Recognizing the emotional power of the spoken word over the printed word, he pioneered in using new electronic media such as the microphone, radio, and film.

Hitler's formula for political success was as potent as it was lacking in subtlety. The very name that he chose for his party was indicative. The National Socialist German Workers Party was ultranationalistic ("National . . . German") but also spoke for "the little guy" ("Socialist . . . Workers"). Ergo, the Nazis were

Germans first, but they came from the same bedrock class of little people whose unrecognized talents had made their nation great, that is, they were just like Hitler. He played masterfully on the public's fears and resentments, which were numerous after Germany's defeat. Hitler's message was built on absolutes: those who oppose us are traitors; those who support us are patriots.

Armed with this self-assuring message, Hitler dominated his own party, whose unruly members were

There is a road to freedom. Its milestones are Obedience, Endeavor, Honesty, Order, Cleanliness, Sobriety, Truthfulness, Sacrifice, and love of the Fatherland. • **Adolf Hitler (1889–1945)**

compelled to recognize his charisma. Outside events also helped him to build his political base. The Weimar Republic's first blow came in 1923 when French and Belgian troops occupied the Ruhr industrial area of Germany. Industry came to a standstill, and rampant inflation impoverished the nation overnight. Opportunistically, Hitler struck at what he thought was the right moment, but his Beer Hall Putsch of 9 November 1923, ended in his arrest, trial, and a five-year jail sentence.

Phoenix-like, Hitler turned his trial into a political forum and gained national recognition. During his reduced sentence of one-year fortress arrest, he wrote his memoir-cum-political statement, *Mein Kampf* (My Struggle). In turgid prose Hitler envisaged a rejuvenated Germany that would expand into an empire comprised of pure Aryan Germans, one in which Jews, Slavs, and other unwanted peoples would be banished. Fortunately for him, few people outside his party took his statement seriously. Upon his release Hitler reasserted control over his unruly following and plotted future campaigns.

From Figurehead to Führer

As long as the Weimar Republic experienced economic stability from 1924 to 1929, aided by private U.S. loans, it could pay off its reparations. Prosperity also deadened the appeal of political extremists, Nazis included. However, the stock market crash of October 1929 struck Germany's export economy with particular severity. The nation's conservative business and political leaders could not stem massive unemployment, and the Nazis and Communists successfully gridlocked government. The crisis deepened, and gradually moderate voters drifted rightward into the ranks of the Nazis. Finally, on 30 January 1933, the conservative leaders elevated Hitler to the chancellorship of a coalition government. They assumed that they could use him as a figurehead.

Hitler proved them wrong. Once in power he undermined democracy, deliberately fostering panic after an arsonist burned the Reichstag (Parliament) building. The Nazis herded thousands of Communists

and other opponents into hastily erected concentration camps. In March 1933 Hitler forced passage of an enabling act that granted him dictatorial powers and emasculated the Weimar constitution. Weimar's last election gave the Nazis only 43.9 percent of the vote, but that plurality enabled Hitler to wield complete power. Soon he suppressed all other political parties, absorbed the trade union movement, and instituted *Gleichschaltung* (leveling), the co-opting of all political, social, and professional associations into his party apparatus. Germans were compelled to greet each other daily with the words "Heil Hitler!" and an outstretched right arm. That greeting powerfully reinforced political conformity.

Shunning orthodox economic advice, Hitler began construction of expressways and public housing, programs that he had blocked while in opposition. Quietly he also initiated massive rearmament programs. Within months the economy improved, unemployment ebbed, and Hitler's popularity soared. Renewed prosperity plus the use of terror even within his own party—as happened in June 1934 when he purged his Sturm Abteilung (Storm Troopers) in the so-called Night of the Long Knives—created a Hitler myth: Germany's all-knowing Führer (leader) was forging unity at home and rebuilding prestige abroad. Propaganda minister Goebbels powerfully reinforced Hitler's image as an infallible Führer.

Hitler instituted a profound social revolution in Germany, one that affected citizens' daily lives and attitudes, but it was highly exclusionary. Only Germans could participate because in Hitler's mind-set Jews and other foreigners were inferior to Aryans. By stages he isolated Germany's Jewish citizens, first with business boycotts and purges of the civil service in 1933, then with his Nuremberg Laws of 1935, which denied Jews citizenship or the right to marry Aryans. Ominously, a vast pogrom (massacre) on 9 November 1938 unleashed violence against Jews and led to their resettlement in ghettos. Finally, in January 1942 at the secret Wannsee Conference, members of Hitler's inner circle, including Reinhard Heydrich (1904–1942), leader of the paramilitary Schutzstaffel (Protective Echelon), settled upon their



“Final Solution,” the Nazis’ euphemism for the mass murder of all Jews. Hitler never issued written orders, but his subordinates knew his wishes and hastened to carry them out.

Master of Deceit

From the outset Hitler knew that his policies would incite fear abroad. Anticipating this, he masqueraded as a defender of peace. In retrospect his actions showed him to be a master of deceit who played on Europe’s war weariness in order to win concessions. Between 1935 and 1939 he repeatedly caught other nations, especially Britain and France, off guard. Their leaders hoped to appease him with timely compromises. Hitler scrapped the Versailles Treaty, openly rearming in 1935, remilitarizing the Rhineland a year later, annexing Austria, then the Czech Sudetenland in 1938, and finally the rest of Czechoslovakia a few months later. Simultaneously, he outspent France and Britain on rearmaments six times over, transforming Germany into a military superpower by the time he invaded Poland on 1 September 1939, beginning World War II. Opportunistically, Hitler shared his Polish conquest with the Soviet dictator Joseph Stalin (1879–1953), a diplomatic marriage of convenience that lasted scarcely twenty months.

Initially Hitler’s armies ran rampant, defeating all opponents and forcing Britain’s expeditionary forces back into their home islands. By June 1941, along with his Axis (Germany, Italy, Japan) partner, the Italian Premier Benito Mussolini (1883–1945), Hitler held sway from Norway to North Africa. However, at this time Hitler’s character flaws surfaced. His ultimate goal, *lebensraum* (living space), required that he conquer the vast eastern territories occupied by Slavic peoples in order to achieve his fantasy of a greater German *Reich* (empire) that would last a thousand years. He was also convinced that he alone could accomplish such a feat. Pessimistic about his own longevity, Hitler was determined to finalize his conquests within his lifetime.

In July 1940, after Germany’s victories in the West, Hitler ordered the preparation of Operation

Barbarossa, his plan for conquering the Soviet Union. Accordingly, 3 million soldiers attacked eastward on 22 June 1941. At first his Wehrmacht (armed forces) attained easy victories over the surprised Soviets. However, enough defenders survived over the vast expanses and deteriorating weather conditions to halt the invaders before Moscow in December 1941. Soviet reserves launched fierce counterattacks that threw the astonished Germans back. Hitler’s hopes of rapid victory proved illusory. He had embroiled his country in a lengthy war of attrition. Amazingly, Hitler compounded his error by declaring war on the United States four days after the Japanese attack on Pearl Harbor, turning the conflict into a world war.

Total war revealed severe weaknesses in Hitler’s governmental structure. Ever since his youth Hitler had held social Darwinist notions of life as an eternal struggle. The title of his book, *Mein Kampf*, implied as much. These notions manifested themselves in the way that Hitler created agencies with overlapping authority in order to foster tension among competing officials. Ultimately all threads led back to him so that he could control his minions amid their institutional infighting. As a result, Germany’s administration and armed forces suffered from duplications of effort and muddled lines of authority. Hitler’s personality was unsuited to the administrative drudgery that might have blunted such chaos. In consequence, strategic decisions were delayed or never resolved. Scientists and technicians received contradictory orders for weapons development and other war-related activities (many of Germany’s best scientists were in exile). Industrialists never geared up properly for a long war; thus, production remained static until too late. Hitler’s disdain for women precluded their effective mobilization for the war effort. Occupied European nations discovered that their conquerors behaved like thugs and stole production, services, capital, artworks, and people in the form of forced labor. Genuine cooperation ceased, and the occupiers acquired only a fraction of the support they needed. Hitler’s hatred of “inferior” peoples such as Jews and Slavs turned the war in the East into a racial war; thus, the captive populations, many of whom

despised Communism and its cruel master, Joseph Stalin, never coalesced as a labor pool for Germany.

Ultimately Hitler's role as commander-in-chief defeated him. After the victories of 1939–1941 he convinced himself that he was military genius. In his youth his intuition had told him that he was a great artist. Now, in wartime, his intuition convinced him that he was a great captain on the order of King Alexander of Macedon, the Carthaginian general Hannibal, or the French emperor Napoleon. In reality he was an amateur. Hitler alone ordered the invasion of the Soviet Union without adequate intelligence. He bobbled his army groups in the opening campaign of 1941 while issuing his cruel Commissar Order for the indiscriminate killing of Soviet leaders (and by implication the entire Russian intelligentsia). Most fateful was his decision a year later to steer his soldiers into the Battle of Stalingrad, where an entire German army was annihilated. Neither Hitler, nor his once-adoring public, nor his armies recovered from that blow as the Allies (France, England, China, Russia, and the United States) closed in from east and west. For that eventuality, Hitler and his generals had no solution despite the smoke and mirrors that he and his propaganda minister threw up about exotic new "vengeance" weapons, an "impenetrable" Atlantic Wall, or the German people's "fanatical" will to resist.

Too late small numbers of Germans concluded that Hitler was leading their nation over the abyss, and on 20 July 1944, they nearly assassinated him. Nevertheless, the attempt failed, and Hitler remained in control until, surrounded by Soviet forces in Berlin, he committed suicide on 30 April 1945. Even as his ultimate fate approached, he refused to accept blame or express remorse for any of his decisions. In February 1945 he had issued his notorious "Nero" order calling for the destruction of Germany's basic infrastructure. Had his followers carried out his scorched earth policy, millions of Germans would have died from malnourishment, exposure, and disease. Fortunately,

recipients of his order, such as his chief technocrat, Albert Speer (1899–1979), balked. The pity is that they had not disobeyed him sooner.

Before Hitler committed suicide, he prepared his last will and testament. Far from an apology, it was yet another mumbling diatribe against the Jews and an indictment of his own people for failing him in executing his hate-filled schemes. His will became part of the historical record and helps explain why the name "Hitler" is synonymous with "evil."

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See also Genocide; Holocaust; Interwar Years (1918–1939); World War II

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HIV/AIDS

Epidemiologists isolated the human immunodeficiency virus (HIV) that causes acquired immune deficiency syndrome (AIDS) in 1984. Cultural attitudes about this epidemic, sexually transmitted disease and the populations it affects—homosexual men, male and female sex workers, drug addicts, and citizens of underdeveloped countries—subdued the initial response to the crisis. AIDS will continue to destabilize economically and politically vulnerable communities and countries until an HIV vaccine is developed.

The appearance in Western medical literature in 1981 of a strange and inexplicable cluster of clinical manifestations—unusual opportunistic infections, cancers, and metabolic or neurological disorders—marked the emergence of what would become a global pandemic known as acquired immune deficiency syndrome, or AIDS. Efforts to find a cure for AIDS are in full swing at the beginning of the twenty-first century, but initial responses to the onset of the crisis were sluggish. Those responses have been determined by cultural attitudes toward disease (both epidemic and sexually transmitted) and by the socioeconomic disadvantages of the populations most closely associated with AIDS (homosexual males, male and female sex workers, drug users, and citizens of underdeveloped countries).

History of the Epidemic

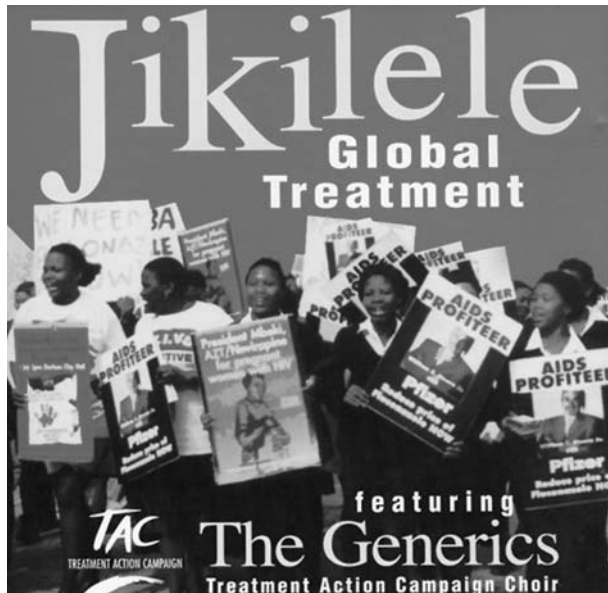
While epidemiologists who study the origins of disease rely in part on documentation such as medical and autopsy reports, and material evidence such as

serum and tissue samples, tracing the history of a disease ultimately requires a certain amount of speculation. In the case of the virus that causes AIDS (human immunodeficiency virus or HIV, first isolated in 1984), a preponderance of evidence suggests it originated among monkeys in western Africa, moving from simian to human populations perhaps as early as the mid-twentieth century. From there it was rapidly transmitted from human to human by means of infected bodily fluids such as blood, semen, or vaginal secretions.

Increased travel between rural and urban Africa in the postcolonial period, as well as travel between Africa and Europe or the United States, helped spread the virus to the developed world. A number of aspects of modern society—including population mobility, relaxed sexual mores, intravenous drug use, and medical innovations like blood transfusion and organ transplantation—have facilitated the spread of HIV, which lives in the body for an extended period before manifesting itself in opportunistic infections.

In the late 1970s, the first documented cases of the medical syndrome occurred among gay men in urban centers of the United States with large gay communities, chiefly Los Angeles, San Francisco, and New York. Official recognition of what would eventually be called AIDS was published by the Centers for Disease Control in June 1981. Physicians in France and England took note of these cases, which were comparable to their own clinical observations during the same period.

A syndrome rather than a disease, AIDS, unlike most bacteriological or viral infections, does not manifest itself in a single symptom or even a small cluster of symptoms. Instead, HIV attacks the cells



The CD *Jikilele* was recorded in 2001 by the Generics, a choir comprised of individuals working with the Treatment Action Campaign (TAC). TAC advocates for greater access to treatment for all South Africans.

responsible for the body's immunological defenses, making the body vulnerable to a wide range of common but normally unthreatening bacteriological and viral agents. Thus, in the early years of the epidemic, a clinical diagnosis occurred only after the appearance of secondary infections, making it difficult for physicians initially to recognize a pattern or even identify the causal agent and its presence in patients. Several years elapsed before a viral cause and a clinical test for antibodies were determined. Slow to cause the immunodeficiency that signaled its presence, HIV had ample opportunity to be spread by those who did not know they were infected. Unlike the causes of past epidemics such as plague, smallpox, or influenza, HIV could survive unnoticed in the infected for months or even years.

Historically, different cultures have responded to epidemic disease in remarkably similar ways. In the ancient and modern worlds, plagues have often been viewed as divine punishment for breaking taboos or committing sins. (For example, both Homer's *Iliad* and Sophocles's *Oedipus the King* begin with such plague punishments.) Because AIDS was first documented among intravenous drug users, sex workers, and men who were having sex with men, these

already stigmatized groups were regarded by many as undeserving of medical treatment, and the culturally or legally proscribed activities that served as modes of transmission were frequently left out of public discussion. Even today, more than twenty years into the epidemic, much of the debate about HIV-prevention training remains mired in conflicts over cultural and religious values rather than discussions about effective public health practices.

In addition, during an epidemic the unaffected can conclude either that only the marginalized group is vulnerable (in which case, no further action is required) or that everyone is vulnerable (so the marginalized group needs to be expelled or contained and regulated). Throughout the first two decades of the AIDS epidemic, governments and communities made both assumptions, in violation of standard public health practices. Heterosexuals in industrialized nations assumed AIDS was a homosexual problem. African-American clergy and leaders assumed it was a white problem. African leaders assumed it was a problem of former French, English, or Belgian colonizers and American hegemonic capitalists. Communist leaders in the People's Republic of China and the Soviet Union assumed it was a decadent bourgeois problem. The result of this blindness was a lack of AIDS-prevention education and health monitoring worldwide, allowing infection rates to soar.

Recent Trends and Future Prospects

The end of the Cold War and the rise of a more tightly knit global economy have in many ways exacerbated the AIDS problem. Within the old Soviet bloc, the end of communism resulted in economic dislocation and hardship, which in turn increased the rates of poverty, intravenous drug use, and prostitution while reducing the capacity of socialized medicine to respond to the epidemic. Expanded trade in Africa and Asia similarly facilitated HIV transmission among marginalized or migratory workers. The rise of the Internet and the attendant proliferation of online pornography have resulted in new types of sex work as



AIDS: 1 in 61, a bilingual poster by Gran Fury (artists' collective).

a form of economic subsistence. In addition, airline deregulation has encouraged Western sexual tourism in developing nations.

Furthermore, the development in recent years of effective pharmaceutical treatments to manage HIV infection has brought with it unintended consequences. In Western industrialized nations where such medications are available, some people have become lax about employing AIDS-prevention measures, and infection rates in some populations have risen. In developing nations where AIDS medications are prohibitively expensive, governments and non-governmental organizations have had to lobby for reduced drug costs.

A rationalist Western scientific worldview will continue to be confronted by a variety of local beliefs and values. To Western medicine, AIDS is simply caused by a virus (HIV) that is commonly transmitted through unprotected sex; the prevention of HIV transmission, therefore, is simply a matter of preventing HIV infection (through sexual abstinence, through sexual fidelity to one partner, or through use of condoms or "safer sex" practices). But sexual

behavior is notoriously immune to rational choice. Furthermore, the power to make and enforce decisions about safer sex is often asymmetrical in many cultures, with males having greater power over females or johns having greater power over prostitutes. Misinformation and falsehoods about HIV and AIDS are prevalent in many communities (such as the belief that one can tell by a person's appearance if they are HIV infected or that an HIV-infected man can be cured by having sex with a virgin). Even HIV/AIDS denialism (rejecting HIV as the cause of AIDS) is not simply the peculiar aberration of a few individuals but can influence public policy, as in the case of former South African president Thabo Mbeki's opposition of antiretroviral medications in that country.

AIDS will continue to destabilize economically and politically vulnerable communities and countries until an HIV vaccine is developed. Research into a cure for AIDS continues apace; but until researchers develop an effective vaccine, AIDS-prevention education and a commitment by Western nations to provide funds for medical treatment will remain the primary means of limiting this epidemic.

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See also Diseases—Overview

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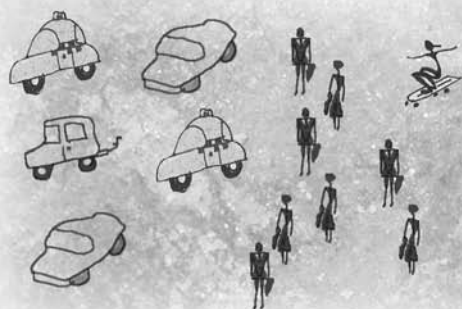
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Ho Chi Minh

(1890–1969)

VIETNAMESE NATIONALIST LEADER

Ho Chi Minh was the most prominent leader of the Vietnamese nationalist movements against French colonialism in the 1940s and 1950s. He epitomized the will of colonized peoples to obtain independence from Western imperialism, but also embodied the paradoxical convergence of two apparently conflicting ideologies: nationalism and Marxism.

Nguyen Sinh Cung, born in the Vietnamese village of Kim Lien, in Nghe An province, assumed multiple aliases during his years as a revolutionary, but was best known as Ho Chi Minh, which means “He Who Enlightens.” Ho Chi Minh grew up in a poor family of Confucian scholars. His father, despite being a scholar-official, preferred to remain in the village to teach rather than serve an imperial court he considered corrupt. At the time, Vietnam had been broken up into three fragments (Tonkin, Annam, and Cochinchina) under the colonial control of France. The Vietnamese royal court, centered at Hue, the imperial capital, and under the nominal rule of the Nguyen dynasty, answered to the French. Ho Chi Minh was thus steeped early on in an atmosphere of fervent nationalism. In 1911, after pursuing an education at the National School in Hue, Ho Chi Minh decided to travel to the West to search for ways to liberate his country, which had been colonized by the French since 1862. Ho Chi Minh’s travels were to last him thirty years, but in 1917 he alighted in Paris, a fertile ground for revolutionaries. He joined the French Socialist Party, frequented Vietnamese nationalist milieus, and published anti-colonial articles in his journal, *The Pariah*, under the alias Nguyen Ai Quoc (“Nguyen Who Loves

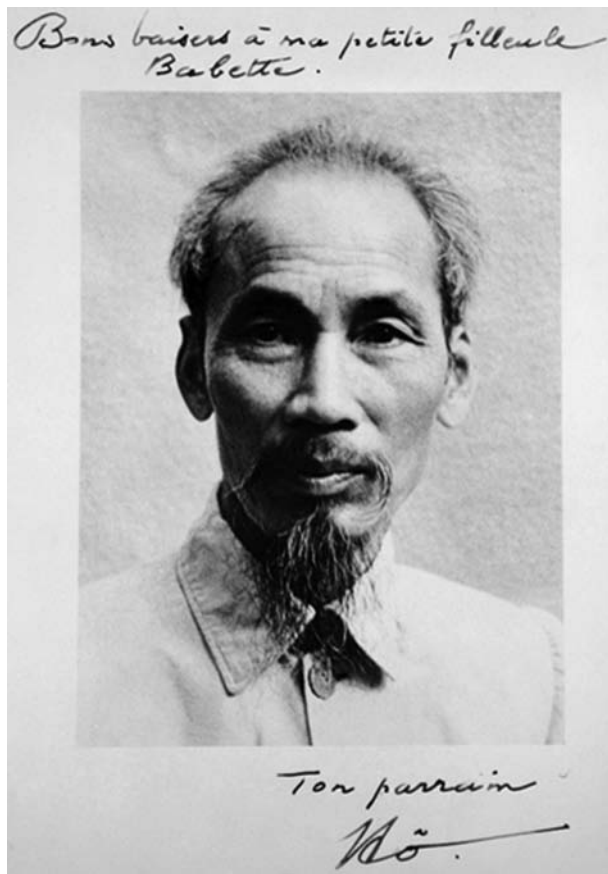
His Country”). World War I ended in 1918, and in 1919 came the peace conference at Versailles. Ho Chi Minh used the conference as an opportunity to present a list of reforms to the delegations present; when he was turned away, Ho Chi Minh, who had already been involved in French socialist activities, became even more deeply committed to Marxism. In 1920 he became one of the founding members of the French Communist Party, where he advocated for Vietnamese independence.

In 1923 he traveled to Moscow for further Marxist training, and from 1924 he traveled and worked as a Communist revolutionary in various parts of Asia. What drove him foremost was his mission to liberate Vietnam from French rule, at whatever cost. Jailed, tortured, sentenced to death, and surviving years of hardship, Ho Chi Minh emerged the undisputed leader of the Vietnamese Communist movement when he founded the Indochinese Communist Party (ICP) in 1930 in Hong Kong.

The French colonial government was at its weakest during the Japanese wartime occupation of Vietnam, and it was in 1941, during the occupation, that Ho Chi Minh returned to Vietnam and established the Viet Minh Front, or the League for the Independence of Vietnam. The surrender of Japan on 16 August 1945 gave the Viet Minh the opportunity to launch its nationwide August Revolution and to seize power. On 2 September 1945, in Hanoi, Ho Chi Minh, by then an emaciated, wizened man, read the Declaration of Independence, declaring the formation of the Democratic Republic of Vietnam (DRV).

The French were determined to regain their colonial possessions, but the First Indochina War (1946–1954) concluded with the French defeat at

You will kill ten of our men, and we will kill one of yours, and in the end it will be you who tire of it. • **Ho Chi Minh (1890–1969)**



Portrait of Ho Chi Minh (c. 1946). This photograph was a gift to Raymond Aubrac, the father of Ho Chi Minh's goddaughter. The French written around the photo translates: "A big kiss to my little goddaughter Babette. Your godfather, Ho."

Dien Bien Phu in May 1954. The Geneva Accords, signed in July 1954, temporarily separated the warring parties on either side of the seventeenth parallel until elections scheduled for 1956. In the north was the DRV under President Ho; in the south were the French, from which emerged the Republic of Vietnam under Ngo Dinh Diem (1901–1963). In the north was the Democratic Republic of Vietnam (DRV) under President Ho; in the south emerged the Republic of

Vietnam (RVN), inaugurated on 23 October, 1955, under Ngo Dinh Diem (1901–1963) who refused to hold the 1956 reunification elections as stipulated by the Geneva Accords. With the United States' intervention, the Second Indochina War (1960–1973) plunged Vietnam deeper into bloody and destructive conflict. The Communist forces continued the combat with the U.S.-sponsored southern regime, which the DRV considered illegitimate. Until his death on 2 September 1969, Ho Chi Minh was able to keep the DRV focused on carrying on the struggle. His stature acquired legendary proportions, and he became known as Bac Ho or "Uncle Ho" among supporters. Ho Chi Minh came to symbolize the Vietnamese determination to resist, and his name was chanted repeatedly in antiwar marches in the 1960s and 1970s in the West and in Third World countries. Ho Chi Minh was deft in steering the DRV through the shoals of Communist rivalry that pitted the Soviet Union against China during the Sino-Soviet crisis while managing to obtain vital economic, financial, and military aid from both. His final wishes were that his ashes be deposited in the three regions of Vietnam, but he was embalmed and remains in state at the Ho Chi Minh Mausoleum in Hanoi.

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See also French Empire; Revolutions, Communist

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Holocaust

Adolf Hitler's plans for "the extermination of the Jewish race in Europe" during World War II were manifest in what became known as the Holocaust, in which some 6 million European Jews perished.

Prior to the mass slaughter of European Jews by the Nazis during World War II, commonly known as the Holocaust, German dictator Adolf Hitler made no secret of his intentions. Writing in prison in 1924, he laid out his anti-Semitic views in the book *Mein Kampf* (My Struggle), and he began to act on them after coming to power in 1933. Though great effort was ultimately devoted to concealing the murder of Jews in concentration camps, Hitler repeatedly spoke publicly about his plans, predicting in January 1939, for example, the "extermination of the Jewish race in Europe" in the event of war.

Despite Hitler's openness about his objective, few people inside or outside Germany took his words seriously. After all, Germany was regarded as one of the world's most civilized nations, and Jews were among its most prominent citizens. It therefore came as a shock when a boycott against Jewish businesses was initiated early in 1933.

Gradually, the persecution of Jews in Germany escalated, culminating in the adoption of the Nuremberg Laws in 1935. These laws excluded Jews from all public business life and denied them the right to vote or hold public office. Later, professionals such as doctors were stripped of their licenses. The Law for the Protection of German Blood and German Honor prohibited the marriage of Jews to non-Jews. Other bans prevented Jews from using the same facilities as non-Jews. In 1937, the Nazis began to confiscate

Jews' possessions. Jewish children were expelled from school, Jews were banned from cultural and sporting events, and limits were placed on what Jews could do in public.

The prohibitions were devised, implemented, and enforced by a bureaucracy devoted to the "Jewish question." Virtually every government institution contributed to the Nazi anti-Jewish policies. Among the most important were the Press and Propaganda Ministry, which fed the German people a steady stream of anti-Semitic propaganda. The result was the dehumanization of Jews to the point where ordinary citizens were willing to persecute or even murder Jews while others watched silently. While it may be an overstatement to say, as some scholars have, that Germans were predisposed to anti-Semitism, few Germans were prepared to raise any objections to Hitler's policies.

The Danger Rises

The discriminatory measures adopted in Germany did not initially pose a physical threat to the Jews. This began to change on 9–10 November 1938, when the government organized attacks by mobs that destroyed 191 synagogues and looted 7,500 shops. At least ninety-one Jews were killed in what became known as the Night of Broken Glass, or Kristallnacht.

The authorities' clear role in the attacks convinced many Jews the time had come to flee. The question, for those with the courage and the means to leave their homes, was where to go. Just four months earlier, delegates from thirty-two countries had met at Evian, France, to discuss what to do about the growing number of refugees trying to flee Europe.



Young Jewish girl in a Polish ghetto (c. 1940).

Malnutrition in ghettos was widespread, and death by starvation and disease was a daily occurrence. New York Public Library.

The United States, which had initially proposed the conference, showed so little interest in solving the problem that other countries felt no need to open their doors to fleeing Jews. In the end, the Dominican Republic was the only country that welcomed Jews.

The situation grew increasingly ominous for the Jews when more than 26,000 Jewish men were imprisoned in concentration camps at Dachau, Buchenwald, and Sachsenhausen. The first of these camps, Dachau, was established in June 1933 for non-Jewish opponents of the Nazi regime and other criminals, but Dachau, along with the others, gradually became prisons primarily for Jews.

World War II Begins

Germany's invasion of Poland on 1 September 1939 marked the unofficial start of World War II. One of the reasons Hitler said he went to war was to make room—*lebensraum*, or “living space”—for Germans. He believed that eastern Europe had to be conquered to create a vast German Empire with a greater population and new territory to supply food and raw materials.

The conquest of Poland, however, brought another 2 million Jews under German authority. These people needed to be removed to create the German living space. Toward that end, Heinrich Himmler, the head of all German police forces, created special task forces

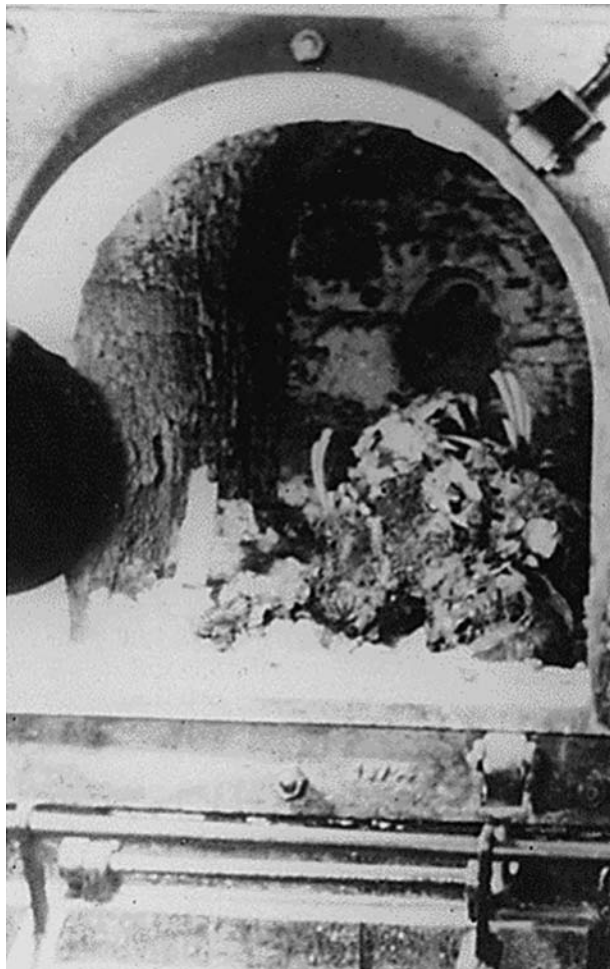
within the elite SS, called *Einsatzgruppen*, which were charged with liquidating all political enemies of the Third Reich.

The *Einsatzgruppen* killed approximately 1.4 million Jews in actions that involved little more than lining men, women, and children up in front of ditches and machine-gunning them. Ultimately, however, the mass shooting of Polish Jews was not practical, so while the Nazis planned the creation of special camps for the efficient extermination of the Jews, they decided to isolate them in ghettos.

Ghettoization

The Polish ghettos were enclosed areas—barbed wire at Lodz, a brick wall in Warsaw and Cracow—guarded by German soldiers. The Jews tried to live as normally as possible, but conditions in the ghettos were horrible. Malnutrition was widespread and death by starvation and disease was a daily occurrence.

Each ghetto was administered by a Jewish council (*Judenrat*) composed of influential members of the Jewish community who had to decide whether to help the Nazis or risk being murdered for their refusal. While the *Judenrats* hoped to improve the plight of Jews in the ghettos, they were often forced to choose who would be deported to the death camps. Ultimately, their cooperation did not save them from



Oven in the concentration camp at Buchenwald, Germany, during World War II. Library of Congress.

suffering the same fate as the other Jews. In 1942, Hitler decided to liquidate the ghettos and, within eighteen months, had the more than 2 million Jews deported to death camps.

The Final Solution

The first people Hitler systematically began to murder were not Jews. In September 1939, he gave an order authorizing doctors to grant “the incurably ill a merciful death.” The program was based in Berlin at No. 4 Tiergartenstrasse and became known afterward as the T-4 program. Patients from hospitals all over the Reich who were considered senile, insane, or in some way “mentally defective” were marked for death. Initially people were killed by starvation, then by injections of lethal doses of sedatives, and ultimately by gas. The gas chambers, disguised as showers,

were first developed for use in the T-4 program, and corpses were cremated, as those of Jews would later be in the camps.

Hitler’s extermination campaign was already nearly three years old when Reinhard Heydrich, head of the SS Reich Security Main Office, arranged for a conference in the Berlin suburb of Wannsee on 20 January 1942. The German army had overrun most of Europe, and the Nazis recognized that it would require greater coordination among their various institutions and officials to accomplish the goal of a “final solution” to the Jewish question, namely the extermination of the 11 million Jews Hitler believed to be living in Europe.

From that point until the surrender of Germany, the Nazis followed the course laid out at Wannsee and murdered approximately 6 million Jews as well as an almost equal number of non-Jews. The killing continued unabated even when the tide of war turned against Germany. When every German was needed to fight, and when food, oil, and transportation were in short supply, resources continued to be diverted to the killing of Jews rather than to military use.

The Germans were determined to find practical ways to kill as many people as quickly as possible. They built six camps—Chelmno, Treblinka, Sobibor, Belzec, Majdanek, and Auschwitz/Birkenau—specifically for murdering Jews. In Auschwitz alone, more than a million people were murdered, mostly in gas chambers.

The Last Stop

Jews deported from their homes or ghettos were usually told they were being transferred to another area or sent to work; they had no idea what to expect when they were packed like animals into boxcars and shipped to their final destination. Before they knew what was happening, their possessions were seized and they were confronted by snarling dogs, armed soldiers, and officials barking orders at them. Those taken directly from the trains to the gas chambers did not realize they were headed to their deaths, and it did not occur to them to resist.



Two men sitting after liberation from Lager-Norhausen Death Camp, circa 14 April 1945. Library of Congress.

The numbers of bodies being buried eventually grew so large that the mass graves were overflowing. Ovens were installed in some camps to cremate the dead. After the Jews were killed, camp inmates were forced to extract gold from the teeth of the corpses, as well as confiscate money, jewelry, and anything else of value, which was then delivered to the German Reichsbank. Other personal items, such as clocks, wallets, and clothes, were cleaned and delivered to German troops. The best of the loot was reserved for SS officers.

Jews who were not immediately killed were segregated by sex, their personal possessions taken away, and their heads shaved. They were issued prison uniforms and, at Auschwitz (after 1941), had numbers tattooed on their arms. Prisoners were fed starvation rations and brutalized by guards.

Because the Germans believed Jews were inferior and essentially subhuman, they felt no hesitation about using them for cruel experiments. At Auschwitz, the Germans experimented with sterilization techniques. At other camps, the Nazis broke bones over and over again to see how many times it

could be done before the bone would no longer heal. Prisoners were exposed to extreme heat and cold to determine the maximum and minimum temperatures at which people could survive, and experiments were conducted to determine the effects of atmospheric pressure on the body.

Jews were not only murdered in concentration camps. At the entrance to camps such as Auschwitz, a sign read, *Arbeit Macht Frei*, or “Labor Wins Freedom.” Thousands of prisoners were literally worked to death. Others died working in German industrial factories owned by large companies such as IG Farben (which produced synthetic rubber and fuel) and Krupp (which produced fuses).

Survival and Resistance

It took luck and determination to survive in the camps or in hiding. People lived underground in caves for years, escaped through latrines, and hid inside monasteries, pretending to be non-Jews. Prisoners in the camps had to stay healthy enough to work, and that often required stealing or trading food and clothing. The very young and old had little chance of survival; more than a million children were murdered in the Holocaust. Women were more likely to be killed than men, because they were less able to perform hard labor and because they could not be allowed to live and produce more Jews.

Despite the overwhelming odds, lack of training and weapons, and their usually weak physical condition, Jews did engage in acts of resistance, such as joining armed partisan groups, participating in the uprising in the Warsaw ghetto, attempting to escape from Sobibor, and blowing up the crematorium at Auschwitz. Prisoners who refused to give in to the dehumanization of the camps displayed a different type of resistance, secretly organizing religious services or classes.

The Failure to Act

Many reports of what was happening to the Jews appeared in media abroad, but they were often buried

That was only the beginning—where one burns books, one will finally also burn people. • **Heinrich Heine (1797–1856)**

deep in the newspaper and written in a way that detracted from their credibility. Most people could not believe that hundreds of thousands of people could be murdered in a single place.

The U.S. government knew what was happening to the Jews in Germany throughout the 1930s and learned about the Final Solution by 1942. Roosevelt was urged to use the military to slow down or try to stop Hitler's killing machine, but defense officials rejected suggestions to bomb the concentration camps. Roosevelt believed the best way to save the Jews was to devote all the nation's resources to winning the war. Undoubtedly, the Allied victory saved Europe and millions of lives, but 6 million Jewish lives were still lost in part because U.S. officials made it difficult and sometimes impossible for Jews—except those who were famous or could help the war effort—to enter the country to escape Hitler. Late in the war, Roosevelt created the War Refugee Board, which took modest measures to rescue Jews, but it was too little too late.

Rescuers

The Holocaust was only possible because of the complicity of ordinary citizens. Besides the perpetrators and bystanders, however, thousands of people acted courageously and morally, risking their lives to save others. These "righteous persons" did everything from providing shelter to food to documents to Jews in danger. A few diplomats, such as Sweden's Raoul Wallenberg and Japan's Chiune Sugihara, helped Jews escape by giving them visas. In the case of Le Chambon, France, a whole town shielded Jews from their tormentors. Denmark was the only occupied country that actively resisted the Nazi regime's attempts to deport its citizens and saved almost its entire Jewish population.

War Crimes

Hitler and several of his top aides committed suicide at the end of the war to avoid arrest and prosecution. The twenty-two highest-ranking surviving officials were tried for war crimes at Nuremberg, Germany, and hundreds of other trials were held

for camp guards and others who committed atrocities. Low-ranking officials claimed they were "only following orders" and should not be held responsible for their actions, but the judges rejected this excuse. Both those who gave orders to commit atrocities and those who pulled the triggers were found guilty.

Many Nazis were executed for their crimes, but most had their sentences reduced or commuted. Others were never tried and escaped to countries in Latin America and elsewhere, where they lived quiet lives under assumed names. The United States actively recruited some Nazis to help in intelligence operations against the Soviet Union. A number of Nazi hunters pursued Nazis who escaped justice. The most dramatic case was that of Adolf Eichmann, one of the architects of the Final Solution, who escaped to Argentina and was found and abducted by Israeli agents who took him to Israel, where he was tried, convicted, and executed for his crimes against humanity. By the start of the twenty-first century war criminals were still being found and tried.

Mitchell G. BARD

American-Israeli Cooperative Enterprise

See also Genocide; Hitler, Adolf; Judaism; World War II

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Homer

(NINTH?—EIGHTH? CENTURY BCE)

Two epic poems attributed to Homer, the *Iliad* and the *Odyssey*, became almost as influential for ancient Greeks as the Bible became for Christians. Homer offered an example of heroism that later generations admired and often emulated. When study of Greek and Latin literature became fashionable again in Europe during the Renaissance, Homeric heroism revived among the educated classes and affected war and politics once more.

Homer is the Greek poet credited with the composition of the epics the *Iliad* and the *Odyssey*. There is little evidence for a historical figure called Homer. The earliest written mentions of him date from the seventh century BCE, but these are not in agreement. A number of Greek cities claim Homer for their own, most of them in Ionia in Anatolia (modern Turkey). Textual and linguistic analysis suggests that Homer was from Euboea, a large island that hugs the east flank of mainland Greece opposite Ionia, and that he lived around 800 to 750 BCE.

Although the background for both epics is the Trojan War (c. thirteenth century BCE), which was fought at Ilium (Troy) in modern Turkey, the *Iliad* and *Odyssey* deal with distinct themes. The *Iliad* relates the rage of the hero Achilles who, insulted by the Greek leader Agamemnon, refuses to fight and urges his mother, Thetis, to have the gods turn the tide of battle in the Trojans' favor. His anger changes to grief when Hector kills his friend Patroclus, who is wearing Achilles's armor. Achilles returns to battle and kills Hector, threatening to defile his corpse until Hector's father, Priam, asks him to surrender the body for a proper funeral, which he does. The action

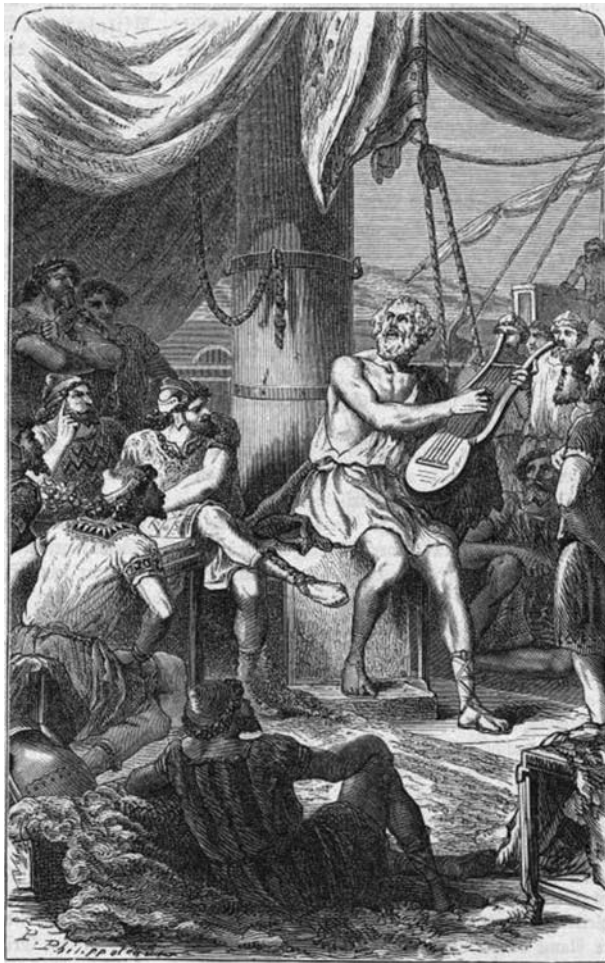
of the book takes place over a few days in the last year of the war, but Homer also recounts the origins of the conflict and much of the story of the previous nine years.

The *Odyssey* relates the return home of the Greek hero Odysseus after the war. Although it is regarded as more of a folktale in which the hero makes excursions to fantastic lands and the underworld, the geography of the *Odyssey* is apparently modeled on the experience of eighth-century Greece, which was then beginning its westward expansion. His homecoming takes ten years because of the obstacles put in his way by Poseidon, god of the sea. In addition to telling of Odysseus's wanderings and tribulations, the *Odyssey* also tells of the efforts of his son, Telemachus, to rid his house of the many suitors who have descended in hopes of marrying his mother, Penelope. In the end, father and son are reunited, they kill the suitors, and Odysseus resumes his place as lord of Ithaca.

Thanks to their exploration of human (and divine) motive, their narrative force, and the sheer beauty of the language, the *Iliad* and *Odyssey* have been regarded as cornerstones of the Western literary tradition since antiquity. More recent evaluations of Homer have established an important historical place for him. At the end of the nineteenth century, the German archaeologist Heinrich Schliemann discovered the site of ancient Troy, which is believed to have burned in about 1250 BCE. This discovery suggested that the story of the *Iliad* had a factual basis. If the stories originated in the thirteenth century BCE, they underwent a contextual metamorphosis so that by the time they were written down, apart from a few intentional archaisms, many of the poem's details reflect

Oh you vile gods, in jealousy supernal! / You hate it when we choose to lie with men.

• Homer (ninth–eighth? century BCE) as the goddess Kalypso in *The Odyssey*



“Homer delights foreign sailors during his captivity.”

From *Illustrierte Weltgeschichte für das Volk*, Otto von Corrin, editor. Leipzig: O. Spamer, 1880–1883.

the reality of eighth-century Greece, then emerging from a centuries-long dark age, not that of the more prosperous Mycenaean age.

The Homeric poems are also among the oldest—if not the oldest—works of written Greek and their transcription marks a crucial transition in the development of writing. The West Semitic alphabet upon which Greek is based has only consonants. Greek,

on the other hand, contains both consonants and vowels, which are essential for rendering the metrical rhythm of Greek poetry, and one theory holds that the scribe who first set down the Homeric epics was bilingual and forced to introduce vowels to accommodate the Greek. Homer’s use of dactylic hexameter was widely imitated in antiquity, most notably in the *Aeneid*, Virgil’s epic of the founding of Rome by the Trojan refugee Aeneas. The first half of the *Aeneid* recounts Aeneas’s voyage to Italy, on the model of the *Odyssey*, while the second half has the more martial spirit of the *Iliad*.

As important as the epics are as a foundation of the “Western” literary tradition, many of the plots and themes derive from older Near Eastern antecedents, the best known of which is the Epic of Gilgamesh. As well as being a standard reading in survey courses of Western literature, Homer’s legacy is seen in the design of James Joyce’s mock-heroic epic novel *Ulysses* (the Latin name for Odysseus), which Joyce divided into the Telemachiad, the Wanderings of Ulysses, and the *Nostos* (homecoming).

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See also Greece, Ancient

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Hong Merchants

Because Chinese officials in the Qing dynasty (1644–1911/12) refused to have direct dealings with European and U.S. merchants beginning in the mid-eighteenth century, the government licensed hong merchants to serve as intermediaries at Guangzhou (Canton), the only Chinese port open to foreign trade from 1759 to 1842. Many became prominent and wealthy until Britain's 1842 victory over the Chinese in the First Opium War.

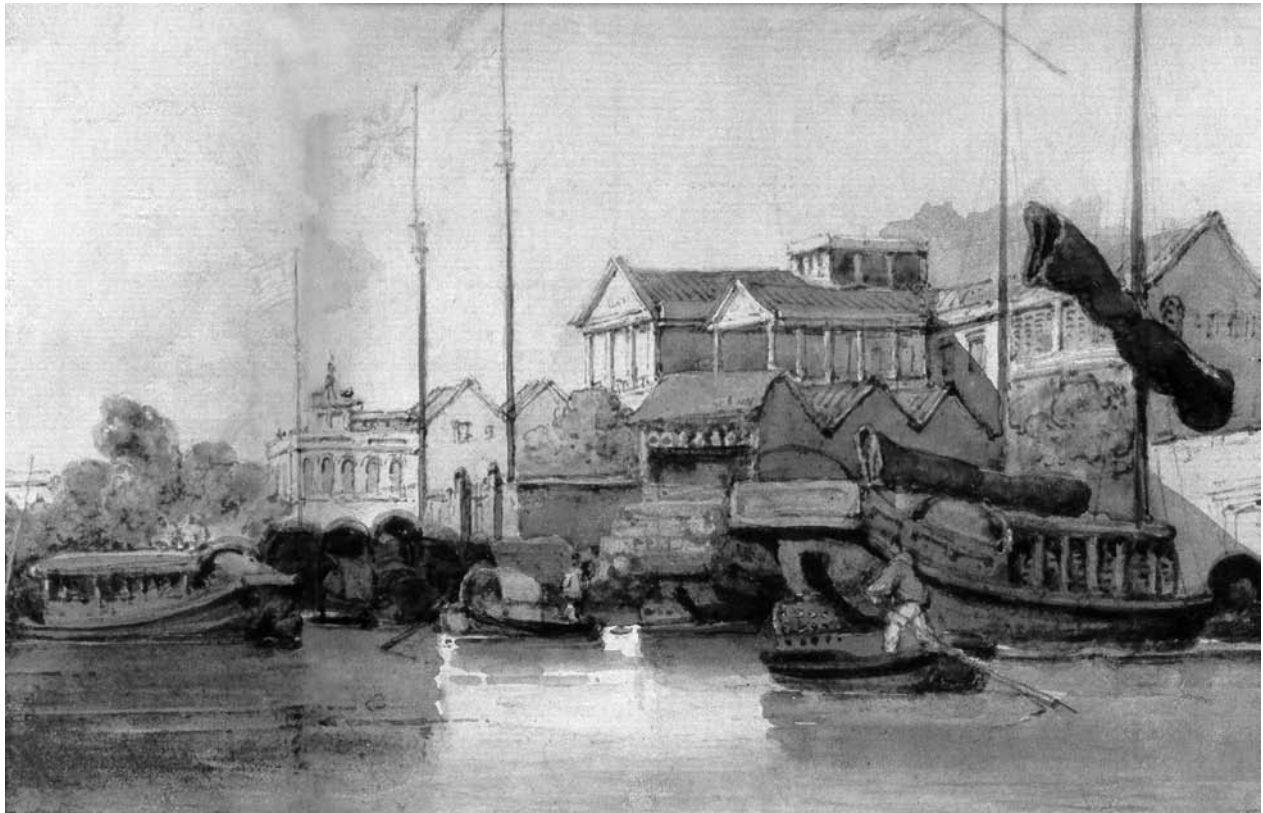
Since the early days of the Sino-Western trade in Guangzhou (Canton), China, Chinese merchants who were licensed by ruling the Qing dynasty (1644–1911/12) to trade with foreign merchants were known as hong merchants. The term came from the name of the trading guild, Cohong, established in 1720, to which they all belonged. As their number was highly restricted to about a dozen or less at any one time, and as the trade volume grew to very substantial size by around 1775, many hong merchants became some of the most prominent and wealthy merchants in China. During the early nineteenth century, the most powerful hong merchant was Houqua (d. 1843). The full extent of his wealth is not known, for besides running extensive business enterprises in China, Houqua also formed joint ventures and partnerships with Russell & Company, a U.S. firm that did business in China. He consigned specific shipments of goods to it for sale overseas without the knowledge of the Chinese State. He also invested directly in the United States, including in stocks in the transcontinental railroad. From what can be gleaned from various accounts, Houqua appears to have been worth several million

U.S. dollars, and thus may well have been the richest man in the world at that time.

Not all hong merchants were as successful. Indeed, there were many who, for a variety of reasons—highly speculative ventures, poor management, unduly heavy pressure from government officials, conspicuous consumption, simple bad luck, among others—had to declare bankruptcy. These failures became so prevalent in some years that, by 1775, the Cohong decided to establish a kind of self-insurance fund, called the Consoo Fund, to cover the debts left behind by their bankrupt members. The fund was officially recognized in 1780. Each member paid 10 percent of his previous year's profit to the fund annually. In 1789, in order to ensure that no debts would be owed to foreign merchants, the Qing authorities imposed a 3 percent levy on foreign imports that went to augment the fund.

While the main functions of the hong merchants were the buying and selling of goods for the foreign merchants that congregated at Guangzhou, the only Chinese port opened to foreign trade from 1759 to 1842, they were also charged to secure the port, collect all the port charges and papers for each arriving or departing foreign vessel, and guarantee the good behavior of individual foreign merchants. With respect to the goods they sold to foreigners, hong merchants also stood behind quality and authenticity thereof, and if goods were returned, then the hong merchants were obligated to replace them without charge. They also gave advice to supercargoes (officers on merchant ships who were in charge of the voyage's commercial concerns) and to private traders. Indeed, many life-long friendships were struck

Buying is a profound pleasure. • Simone de Beauvoir (1908–1986)



George Chinnery, *Guangzhou: The Foreign Factories* (c. 1840). Pencil and watercolor. The scene depicts thirteen factories along the riverbank that were designated for use by European and American merchants.

between Western and hong merchants, and their advice often extended from the professional to the social and personal. These friendly relationships, however, did not result in greater mutual understanding of each other's culture. Because Chinese officials refused to have direct dealings with European and U.S. merchants, hong merchants had to serve as intermediaries. Thus, in addition to handling business matters, they also took care of foreign merchants' personal needs, such as petitioning grievances, finding living quarters and household servants, and getting official permits to leave their living compounds for occasional outings in the countryside. These official functions, together with the considerable customs fees that they collected for the Imperial Household Bureau—for all taxes levied from foreign trade went directly into the emperor's private purse—gave them

access to senior officials and opportunities to receive official commendations.

Several second- or third-generation hong merchants were scholars who had passed the state examinations and were therefore treated as social equals by the local officials. As a group, they occupied a rather unique place among the Chinese merchant class. The hong merchants' exclusive trading privileges with foreigners and their position as intermediaries between foreign merchants and Chinese officials came to an end in 1842 with Great Britain's victory over China in the First Opium War. The hong merchants and their Cohong guild were disbanded, and they came to be regarded as relics of a period when the Chinese world and the Western world came together without much mutual understanding. The Chinese government did not recognize foreign trading as a private citizen's



George Chinnery, *Portrait of the First-Ranking Hong Merchant Howqua [Houqua]* (c. 1828). Oil on canvas. Collection of the Hongkong and Shanghai Banking Corporation Limited.

right. According to normative Confucian values, trading with foreigners was an element of diplomacy and therefore ought to be highly controlled and limited in scope. Nevertheless, it was not a matter of sufficient importance to involve the state directly, and hence, any communication between Chinese officials and foreign merchants was channeled through hong

merchants. On the other hand, both the Chinese and the foreign merchants worked successfully together, for they shared a similar set of values about private enterprise and profit motives. After 1842, many of the hong merchants, joined by newcomers, continued to engage in foreign trade in the form of compradors (Chinese agents in the employ of foreign firms). The Chinese worldview itself remained fractured, and it would take another generation or two before the Chinese state gave proper recognition to international trade and the critical role played by the hong merchants.

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See also Trading Patterns, China Seas

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Horses

After the invention of stirrups (c. 500 CE) horsemen became especially formidable as they charged forth in battle, thrusting spears or using both hands to shoot with bows and arrows. As a result cavalry warfare became dominant throughout Eurasia for the next thousand years, and the horse remained an animal of war until plowing and pulling wagons came later.

Horses played two main roles in world history. First and foremost, they served in war, and men driving or riding horses dominated battlefields for centuries in many but not all parts of the Earth. Second, when efficiently harnessed, horses pulled plows, wagons, and coaches faster than oxen were able to, and for a short while dominated short-range overland transport until displaced by tractors and motor cars in the twentieth century, at least in the Western world. A third role survives undiminished, for horses still run races and are used to play polo and chase foxes for the amusement of elite groups, as they have done for several centuries, here and there around the globe. And, occasionally, children still ride wooden horses on merry-go-rounds.

Evolution

The evolution of horses from a small, three-toed creature called *Eohippus* that ran about in both North America and Europe some 2.5 million years ago is relatively well known. Successive species grew larger with longer legs and fewer toes until a hoofed, one-toed genus, *Equus*, evolved from

which modern horses, zebras, and donkeys all descend. Modern horses (*Equus caballus*) appeared in North America about 2.5 million years ago and spread to the Old World across a land bridge between Alaska and Asia to occupy the grasslands of Eurasia. But, for reasons unknown, the species disappeared from its North American homeland between 10,000 and 8,000 years ago, only to be reintroduced by Spaniards during their conquest of Mexico in 1519–1521. Human hunters arriving from Asia may have killed them off, but this is speculative and may not be true.

When horses arrived in Eurasia, they were highly specialized grass eaters, lived in herds (each led by a male stallion), and relied on speed to evade attackers, including human hunters. A few horses appear in the Magdalenian cave paintings of France, made between 16,000 and 13,000 years ago, and this suggests that they were among the game animals Magdalenians hunted. But domesticating fleet horses was not easy. Peoples of the western steppe in what is now the Ukraine may have succeeded in taming them about 6,000 years ago but for a long time continued to kill horses for food, just as hunters had done before. At some unknown date mares, like cows, were induced to let humans milk them, and mare's milk remained a significant resource for later generations of horse nomads across the steppes. But mare's milk was not very abundant. Cows gave more milk, and slaying male newborns to assure access to milk—however practical when applied to cattle—became costly for horse breeders when riding stallions allowed them to manage and protect their herds.



A family, with shovels and horse-drawn carts, working at the iron mines in the Bakaly hills (near Ekaterinburg, Russia) 1910. Photo by Sergei Mikhailovich Prokudin-Gorskii (1863–1944). Library of Congress.

Going to War

Riding horseback probably began almost from the start of human interaction with horses, but the earliest evidence dates only from about 3000 BCE in the form of a few clay statuettes. It took a long time before riders could safely use weapons from horseback. The first riders were probably more interested in guiding their herds to the best pastures and keeping them together than in attacking other men.

As far as we know, horses first began to play a critical part in organized warfare about 1700 BCE on grasslands adjacent to the Iranian plateau, north and east of Mesopotamia. Wheelwrights learned how to construct slender, spoked chariot wheels able to withstand the bumps and thumps caused by rolling rapidly across battlefields. A pair of galloping horses could

haul two men in a light chariot; one man held the reins and drove the horses while the other stood ready to use his bow to shoot arrows at the enemy. When such chariots were new they were very expensive, and all but irresistible in battle. Foot soldiers could not come to grips with a swarm of rapidly moving chariots, nor dodge the arrows that came so swiftly at them. The weapons charioteers used were short, resilient compound bows made of wood, bone, and sinew, and were just as difficult to construct properly as were the chariots' wheels.

Building war chariots and making compound bows required specialized skills and materials that only civilized or semicivilized societies could mobilize. Feeding horses away from the steppes was also very expensive, since grass was scarce in the earliest centers of civilization. Charioteers therefore



This Japanese woodblock print (ukiyo-e) shows the warrior Sasaki no Takatsuna on horseback at the Battle of Uji River. Created between 1772 and 1789 by Shigemasa Kitao.

remained relatively few, but success in battle assured the eventual spread from their place of origin in every direction. Western Asia was closest and most immediately affected. Charioteers from the steppes conquered Mesopotamia, Syria, and Egypt by 1687 BCE when the Hyksos came in their chariots to invade and rule over Egypt. Chariots and horses arrived as conquerors in India about 1500 BCE, and Chinese rulers acquired them some two hundred years later. Westward, chariots probably arrived in Greece from Asia Minor. A stone carving in Sweden shows that even remote European chieftains had acquired war chariots by about 1300 BCE. For the first time the whole breadth of the Eurasian continent was disturbed by the impact of horses and the styles of chariot warfare they made possible, and its peoples remained loosely but significantly in touch thereafter,

especially with respect to military and technological advances.

The Chariot's Decline

To be sure, small elite groups of charioteers did not retain power for very long. Two further changes in warfare were responsible.

One was the advent of iron armor and weapons. Iron was abundant in the Earth and became much cheaper than bronze when methods for attaining the high temperatures needed to smelt it had been perfected. Successful smelting of iron started in Cyprus and eastern Asia Minor about 1200 BCE and spread across the Old World quite rapidly. Its effect in western Asia and Greece was to enable armored infantrymen, equipped with iron helmets, shields, and spearheads, to withstand charioteers' arrows as never before; when superior in number, infantrymen were sure to be victorious in prolonged battles, since arrows were rapidly expended, and emptied quivers made charioteers wholly ineffectual.

Foot soldiers thus regained their former primacy in Greece and western Europe for the next few centuries, despite the advent of cavalry warfare among steppe nomads, which allowed single bowmen to move even more swiftly without the hindrance and cost of dragging a chariot. This, in turn, required riders to let go of the reins and rely on legs and voice to guide their galloping horses wherever they wanted them to go, while using both hands to bend and their bows and aim their arrows. Horse and man had to learn to move as one and trust each other amid all the noise and excitement of battle. This level of coordination between two such different species is almost as extraordinary as the way cows and mares allowed human hands to milk them.

Once achieved, shooting from horseback made every adult man a potential soldier among nomad peoples of the steppes. This compensated for the superior numbers of farming populations; and the superior mobility of mounted men in warfare gave nomads an enduring advantage that lasted more than 2,300 years, from the time when steppe cavalymen



This illustration shows warriors fighting from a horse-drawn chariot in a battle during the Homeric (or Heroic) age of Greek warfare. From the *Münchener Bilderbogen* series. (Munich: Braun und Schneider, 1852–1898.) New York Public Library.

participated in the overthrow of the Assyrian Empire in 612 BCE until Chinese soldiers compelled the last steppe confederacy ever to confront a civilized army to flee and submit to Russian protection in 1757 CE.

Throughout that long period the frontiers between steppe grassland and cultivated farmland witnessed a long struggle between horse nomads and settled, much larger agricultural populations living south of them. Raid and trade were alternative ways of life for both parties. Nomads welcomed grain and other supplies from the south, while civilized populations needed peace to bring in the harvests and often hired border nomads to protect them from other steppe raiders. But peace was always fragile, and raids and conquests recurrent, as each side borrowed military techniques and organization from the other whenever possible.

A New Breed

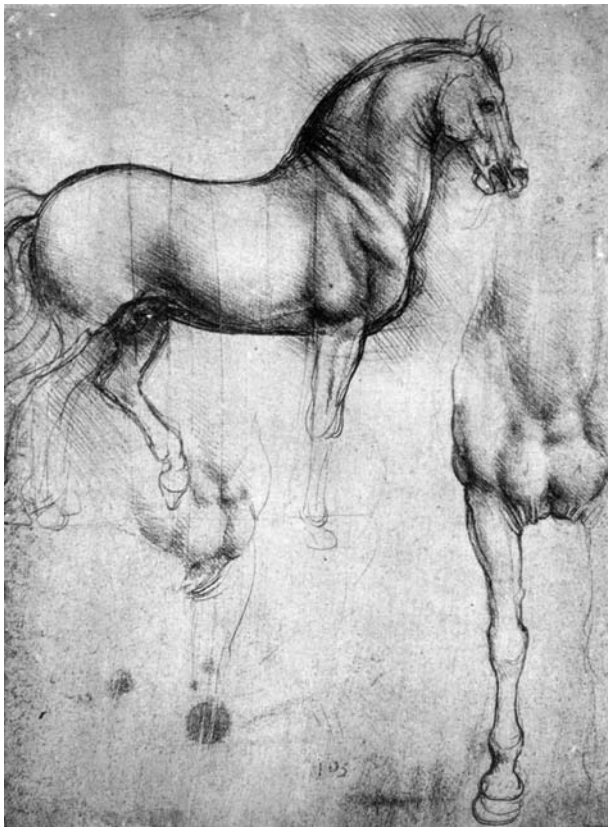
A significant shift of military balance occurred during the Parthian Empire (247 BCE to 224 CE) in Iran when Parthians developed a new breed of horse, far larger and stronger than the steppe ponies that served their nomad neighbors. Such horses, fed on alfalfa, could carry an armored rider and wear a breastplate, so

Parthian warriors became able to repel unarmored steppe raiders with comparative ease. But the big horses could not thrive on steppe grazing alone and were slower than the ponies, so a standoff set in that protected Parthian farmers from raids very effectively. News of these powerful horses reached China and in 101 CE Emperor Wudi sent an army all the way across Asia to bring some of them back. But feeding such big horses in China was so expensive that they remained rarities in Chinese armies.

Not so in Europe, for when Roman armies began to encounter big warhorses and armored archers across their eastern frontiers, the Parthian style of heavy cavalry seemed worth adopting, and by the time of Emperor Justinian (reigned 518–565) East Roman (or Byzantine) armies were mainly composed of armored bowmen who rode on big warhorses and were known as cataphracts. The fact that stirrups had by then been invented made riders far more secure on horseback.

Two centuries later King Charles Martel (reigned 714–741) granted estates to fighting men in France who became armored knights sworn to serve in his armies for a limited time each year on the same big warhorses. Unlike Parthian and Byzantine horsemen, however, these knights rode into battle carrying

A horse is a thing of beauty . . . none will tire of looking at him as long as he displays himself in his splendor. • Xenophon (c. 430–c. 354 BCE)



Leonardo da Vinci, *Study of horses* (c. 1490).
Silverpoint on prepared paper.

spears, perhaps because western Europe was still heavily forested and arrows could not pass freely through tree branches. Stirrups were essential for keeping knights safely seated when their spears engaged an enemy. Throwing a spearhead from a galloping horse allowed a knight to overwhelm anyone except another knight riding in the opposite direction, in which case one or both might be unseated or killed. These armored, human projectiles became the backbone of western European armies for the next few centuries, and knights became a powerful and often unruly privileged class in European society at large.

The Rise and Fall of Cavalry

Big horses could not find enough to eat on the open steppes, however, and steppe cavalymen benefitted from stirrups too, so nomad raiders

remained formidable wherever forests did not impede them. The apex of horse nomad ascendancy came when Chinggis (Genghis) Khan and his successors created an enormous empire (1227–1330) that extended westward from the steppes of Mongolia through Central Asia to Russia and the east coast of the Mediterranean, and also embraced the whole of China. The Mongols' extraordinary victories depended on the way Chinggis Khan broke with traditional tribal organization by borrowing Chinese patterns of military bureaucracy, forming regular units of 10, 100, 1,000 and 10,000 men commanded by officers promoted on the basis of success in battle rather than because of kinship or some other inherited status.

The Mongol armies moved with unparalleled rapidity and precision, relying almost wholly on cavalry. Yet they also enthusiastically accepted gunpowder, newly invented in China, and by spreading familiarity with its explosive power eventually paved the way for the overthrow of steppe nomad armies when handguns made arrows obsolete by about 1700. When the Mongol Empire was at its height, thousands of persons and caravans moved back and forth across the breadth of Asia, and the peoples of Eurasia began to exchange goods and ideas more intensively than before. Consequently, such influential Chinese novelties as the compass, paper making, and gunpowder all reached Europe and regions in between. Camels were the most efficient caravan animals, but horses and even donkeys played a part in long distance caravan trade as well.

In warfare, horses remained critical across most of Eurasia even after guns upset older balances by making it easy to destroy city and castle walls whenever heavy siege guns could be brought to bear upon them at close range. In civilized lands, combined forces of infantry, cavalry, and artillery became imperative. But horsemen retained much of their older prestige, riding ahead and along the flanks of advancing armies to guard against ambush or surprise, yet ready, when battle was joined, to charge en masse and deliver a decisive blow against a wavering foe and turn retreat into a route by hot pursuit.

The role of horses in war enlarged when lighter field guns were introduced, since horses pulled them and their ammunition to the scene of battle. And as roads slowly improved, horse-drawn wagons carried more and more supplies—tents, cook stoves, food, medicines, and bandages, for example—that were vital to an army's long-term efficiency. Fodder for horses was a critical necessity for every army and long restricted campaigning to summer time, when fresh herbage abounded and hay did not have to come from the rear. As recently as August 1914, delivery of hay to the British army in France occupied more shipping space than any other single item of supply.

But cavalry played no part in the trench warfare that ensued from 1914 to 1918. Railroads bore the brunt of supplying the immobilized armies, and when mobile warfare resumed in World War II internal combustion engines in tanks, trucks, and airplanes displaced horses just as they had by then been displaced in civilian life by tractors, trucks, and automobiles. Noxious exhaust gases thus terminated the military career that had been so central for horses in world history.

Pulling Plows and Wagons

Civilian roles for horses were more modest. For a long time oxen were both cheaper and easier to harness, and so pulled Europe's plows and wagons. In China and India, water buffalo were the principal animals pulling plows. Oxen and sometimes donkeys did so in western Asia where light scratch plows prevailed. But western Europeans adopted a larger, mouldboard plow after about 900 CE that needed six to eight oxen to pull it. Until padded collars resting securely against each horse's shoulder bones were invented, horses were useless for farmers since simple strap harnessing choked their windpipes when heavy pulling was required. Horses also required better fodder than oxen, and thus cost more.

In spite of that, by the seventeenth century well-fitting horse collars had been invented and horses began to pull wagons and plows in parts of western

Europe, where their superior speed allowed fewer people to plow more land and carry larger loads in less time than oxen were capable of doing. Thereafter, by slow degrees, European farmers' reliance on horses expanded, and use of ox teams diminished. Similarly, as roads were improved (mainly in the eighteenth century) coaches and wagons began to travel long distances more rapidly, and horses took over the job of pulling them. Likewise within cities, paved streets allowed horse-drawn carts and wagons to distribute commodities of every sort to desired destinations with increasing frequency. Human and horse populations both increased in number accordingly, and even when canals and then railroads cheapened long-range internal transport after the 1750s, horse-drawn vehicles continued to multiply as local deliveries increased in scale.

In North America, internal combustion engines supplanted horses very quickly after 1910 or thereabouts, though horses still hauled milk bottles through the streets of cities like Chicago until about 1940. That was exceptional, however, and only a few police horses, used for crowd control, remained on the streets after the 1940s. Tractors replaced horses on farms throughout North America and much of the rest of the developed world. Aside from their prominent use for transport and agriculture in less developed countries, today horses survive most conspicuously at sporting events—as racehorses and polo ponies, for instance, and notably in Afghanistan's famous game, Buzkashi—or as merry-go-round rides for children.

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See also Plows; Warfare—Steppe Nomads

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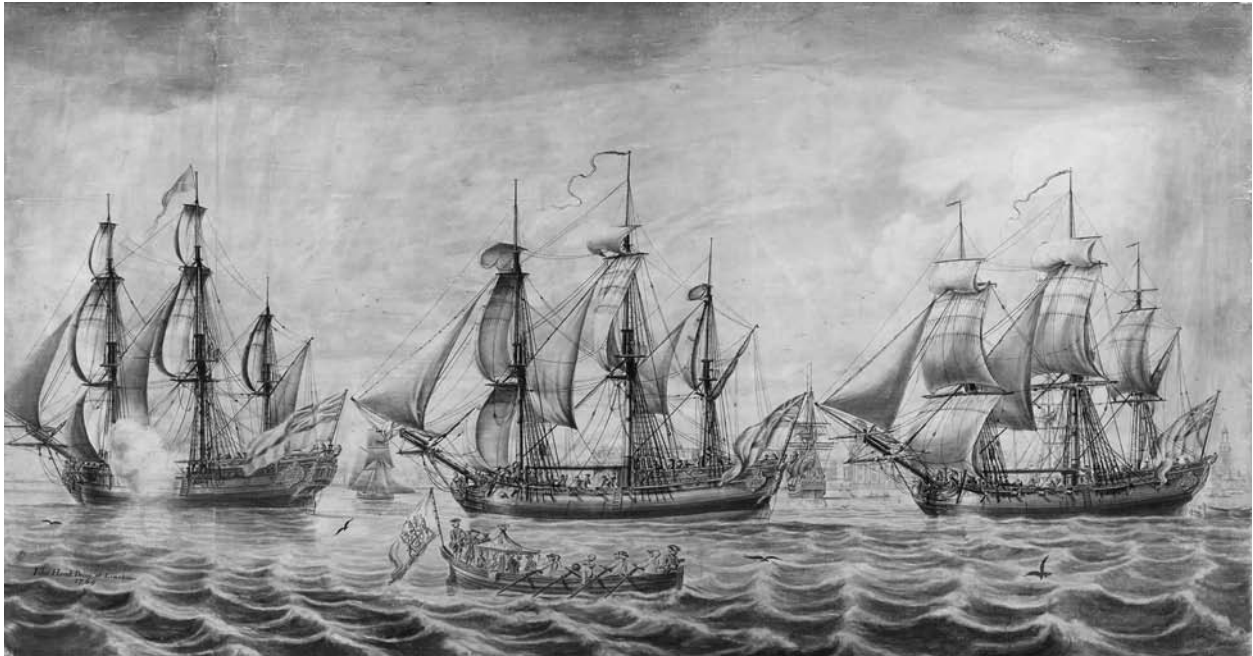
Hudson's Bay Company

The Hudson's Bay Company was a significant British trading company, leading in fur trade, exploring and developing the Canadian wilderness, and holding the biggest territory of any company in the history of the world from its foundation in 1670 till the forced sale of its landholdings in 1869. Since the land sales it has remained a significant actor in Canadian business till present times.

The Hudson's Bay Company was founded as a monopoly by a royal charter given by King Charles II (1630–1685) in concession to Prince Rupert (1619–1682), the king's cousin, and his syndicate was subscribed to by royal courtiers. Originally, and until 1970, headquarters were in London while the main area of activities was located in the Hudson's Bay area of what is now eastern Canada and northeastern United States. From its beginning the company antagonized the French, especially those of Montreal, who had already established trading interests in the Hudson's Bay area. However, temporary political affinity prevented active hostilities between the company and the French until 1689, when relations between England and France soured as William III (1650–1702) and Mary (1662–1694) ascended to the throne of England and joined the Netherlands in the League of Augsburg against France. As the political climate opened for hostilities, the conflicts of interests between French Canadians and the Hudson's Bay Company led to continued fighting for nearly a century, in which the loyalties of the Native Americans were eagerly pursued by both sides both as fighting and as trading partners.

The main products of the sparsely populated Hudson's Bay region were furs and pelts, especially highly profitable beaver pelts, which were much valued in Europe where, manufactured into felt, they were used for a range of hats, including the triangle hat that was in common use in the eighteenth century. Many of the beaver pelts were acquired through trade with the Native Americans, who through their choice of trading partners came to be allied with either the French Canadians or the Hudson's Bay Company. Originally the company offered standard European manufactured products, such as metal tools like scissors and hatchets, and vanity items in exchange for the beaver pelts traded with the natives. The exchange rate was fixed with the beaver pelt as the main currency: a "made beaver" could be precisely measured in value against European manufactured goods and the furs of other Canadian game, and tokens were even minted by the company to match the value of a pelt, with values from one-fifth to one whole beaver. In 1780, the company introduced a new product, the point blanket, which was a durable woolen blanket that won favor with European Canadians as well as Native Americans, who started to accept the blanket as one of the main goods of trade, as they found it useful both as clothing and as a standard blanket.

Contention about land arose in connection with the American Revolution, as the Hudson's Bay Company and the new states tried to claim the same territory in the border region around the Great Lakes. The dispute was settled, largely in favor of the United States, by the Treaty of Paris (1783), in which Britain acknowledged the new republic and its national borders.



Three ships of the Hudson Bay Company sailing off Greenwich, England, drawn in 1769 by John Hood, a shipwright who specialized in large pen and wash drawings of maritime scenes.

The Hudson's Bay Company was in charge of enormous landholdings, at its height estimated at about one-twelfth of the solid surface of the earth, and through its explorations into the chartered territory it provided a great contribution to the knowledge of the area. Through most of its early existence, the company was almost all male, governors as well as associated employees usually living as singles as the cold Canadian climate was considered particularly unsuitable for white women.

In 1869 the British North America Act was passed, creating Canada as a self-governing dominion of the British Empire. A condition for the formation of the new state was the sale of the chartered area and the end of the monopoly of the Hudson's Bay Company. Given no choice but to sell, the company was handsomely paid for giving up its land and rights. After the land sale and breakup of the monopoly, the company turned increasingly to retail, fur auctioning, and, after 1929, oil and gas, remaining an important factor in

Canadian business and a contributor to the allied efforts in both World War I and World War II. In 1970 a supplemental royal charter turned the company into a Canadian company, and headquarters were moved from London to Winnipeg. In the twenty-first century, the Hudson's Bay Company is Canada's biggest company in general retail and one of its five biggest employers.

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See also Fur Trade

Further Reading

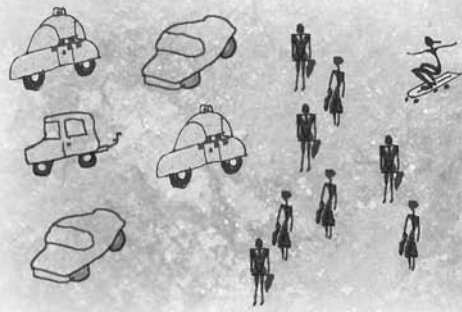
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Human Evolution

Disciplines involved in the study of human evolution—as a process both related to and distinct from the origins and evolution of other hominids—include anthropology, archaeology, paleontology, primatology, linguistics, and genetics. Because of the extensive time scale and the relative scarcity of data, the study of human evolution is an inexact science that requires a degree of theorizing.

One important way world historians have expanded their perspectives on humanity's past is through the integration of hominid evolution with their customary consideration of events covering the last 5,000 years. To understand hominid evolution, they have turned to the findings of paleoanthropologists, who rely primarily on fossil evidence rather than written records to reconstruct the patterns of prehistory that stretch back 5 to 7 million years, when our earliest direct ancestors in the family of hominids, an amazing variety of distinct species, notably the australopithecines, or southern apes, diverged onto their own evolutionary line. Seventy million years of primate evolution set the parameters and determined the possibilities for the origins and development of hominids. From their primate heritage, human beings have derived a unique combination of physical attributes, including large brains relative to body size, eyes capable of binocular vision, nimble hands, smaller canine teeth, and a skeleton designed for upright walking. Human evolution also rested on long-standing trends in primate behavior, including social learning and cooperation, toolmaking, and group organization.

Before discussing human evolution in more detail, however, it's important to mention the evidence used

in paleoanthropology and the types of disputes that tend to arise. Given the paucity of evidence available to paleoanthropologists, the immense gaps in existing knowledge, and the number of recent archeological finds that call into question prevailing views, world historians should not be surprised to find the experts constantly disagreeing among themselves about the variables of hominid evolution. They utilize detailed site surveys, stratigraphic observations, chronometric methods of dating, and precise forms of climatological, biomolecular, and comparative anatomical analysis to begin to interpret what they have found. They have increasingly emphasized the diversity rather than the uniformity of early hominids and the possibility that early hominids lived widely throughout sub-Saharan Africa, but have remained divided over how to distinguish one species or genus from another, and hence over the use of proper nomenclature. Such fundamental aspects of human evolution as the development of walking, speaking, and the hunting-gathering adaptation remain subjects of considerable debate.

Earliest Hominids

Despite unresolved disagreements and uncertainties, and evidence for the development of a discernibly upright posture in primate evolution, paleoanthropologists have focused on bipedal locomotion, the peculiar human capacity to walk efficiently on two legs with a fully erect posture, as the key to understanding what separated our oldest forebears from other hominoids. Indisputably, Australopithecines living in eastern and southern Africa had ape bodies adapted to permit upright balance and a striding

gait. Bipedalism represented a beneficial adaptive response to Africa's expanding open woodlands and savanna environments. Compelled to traverse the considerable distances between shrinking wooded areas as they foraged for sustenance or sought a refuge as nightfall approached, our distant forebears must have benefited from the cooling effects of upright posture, the advantages of a panoramic view, especially when striding through tall grass, and the convenience of having free hands to carry food, artifacts, or children. The occasional bipedalism that natural selection steadily reinforced as australopithecines adapted to their special niche set the stage for the subsequent evolution of every other fundamental feature that separates us from our hominoid cousins. It probably contributed to such physical modifications as progressive hair loss, improved sweat glands, and the refinement of the human hand. By indirectly encouraging tool use and heightened levels of social interaction, it may even have served as a fountainhead for the development of cultural behavior.

For several decades after the discovery of *Australopithecus afarensis* in 1974, paleoanthropologists devoted considerable attention to the fossil evidence for this relatively small, gracile species known as *Australopithecus afarensis*, which lived in East Africa between 4 and 3 million years ago. Still viewed by most investigators as the common ancestor of all subsequent hominid forms, *afarensis* possessed an almost humanlike skeleton below the neck, but a braincase only about one-third that of the modern average. In the mid-1990s, archaeologists discovered the remains of two other previously unknown hominids, *Australopithecus amanensis*, an apelike creature that apparently lived in the dense forests of East Africa at least 4 million years ago, and what researchers originally called *Australopithecus ramidus*, another East African species remarkably similar to chimpanzees.

Ramidus inhabited flat, forested regions as many as 5.8 million years ago, and apparently did walk upright, at least on occasion, although doubts about its capacity for bipedalism have led some investigators to conclude that it should be treated as a distinct genus, *Ardipithecus ramidus*. If that judgment is sustained, then only *amanensis* will be viewed as a

direct precursor of *Australopithecus africanus*, which itself completely died out 2.5 million years ago, but not before giving rise to other varieties of australopithecines as well as to the most ancient members of our genus almost 3 million years ago. One of these species, *Australopithecus africanus*, lived in southern Africa between 3 and 2.5 million years ago, giving way to a robust group that included *Australopithecus aethiopicus* and then *Australopithecus boisei* in East Africa and *Australopithecus robustus* in the far south. (Some paleoanthropologists classify *aethiopicus*, *boisei*, and *robustus* as members of the genus *Paranthropus*, which gives some impression of the degree of debate in the field.) *Robustus* died out about 1.5 million years ago, while *boisei* endured for another 500,000 years, at last succumbing to less burly creatures with larger brains relative to body size and greater dependence on tool use. The earliest forms of our genus, *Homo*, collectively known as *Homo habilis* or "handy man," were indisputably present in East Africa somewhat more than 2 million years ago, coexisting with *Australopithecus boisei* for at least a million years and with *robustus* in South Africa for a much shorter period.

Appearance of the Genus *Homo*

What paleoanthropologists have lumped together as habilines may actually have been several closely related species. At a minimum, some experts insist on differentiating *Homo rudolfensis* from *Homo habilis*. Others explain substantial variations in terms of a pronounced sexual dimorphism (that is, pronounced differences in the physical appearance of the sexes). But all agree that an abrupt species transition apparently did take place about 2.6 million years ago, and that the brain size of habilines jumped appreciably around 600,000 years later. But beyond enlarged cranial capacity, *Homo habilis* remained remarkably apelike. Paleoanthropologists have used the earliest evidence for systematic tool manufacturing—a momentous accomplishment that gave birth to the development of culture as a primary adaptive mechanism for humankind—as the means for differentiating habilines from australopithecines.



No later than 2.4 million years ago, East African hominids who may have been the immediate precursors of *Homo habilis* rather suddenly started to modify water-smoothed pebbles and rocks gathered in river beds, fashioning them into rudimentary stone artifacts suitably shaped to fit immediate needs. Soon after 1.9 million years ago, habilines had at their disposal an array of simple but clearly recognizable choppers, scrapers, burins, and hammerstones, all made in set patterns created by striking a core with a smaller stone to chip off a few sharp-edged flakes. Known as the Oldowan industry, this basic technique eventually spread throughout much of Africa and Eurasia, continuing to be practiced in isolated areas as recently as 200,000 years ago. Intentionally designed Oldowan tools enabled habilines to broaden their subsistence strategies through increased dependence on meat. While the bulk of their diet still consisted of vegetable foods, habilines probably turned with growing frequency to opportunistic scavenging of predator kills and expert tracking of small game animals. Although their hunting activities remained limited, they were beginning to define the basic contours of the gathering and hunting adaptation.

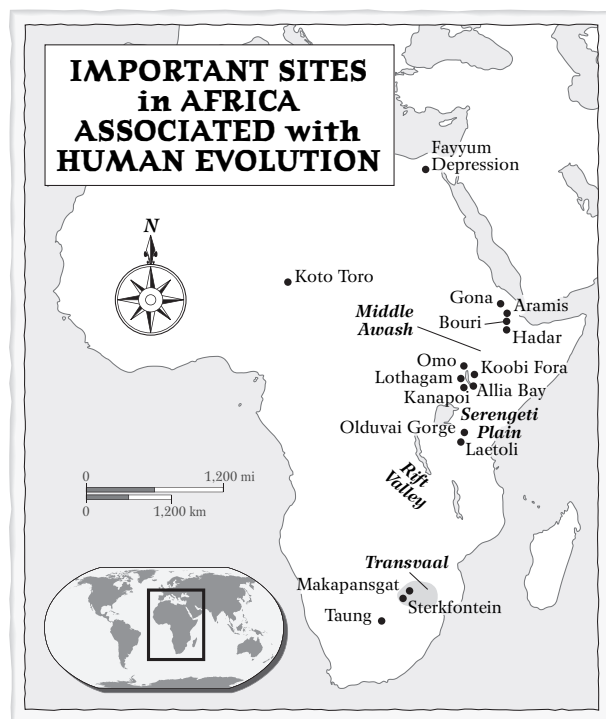
As the social organization of their bands became more complicated, the demands placed on individuals in their relationships with others may have contributed to the development of the brain. Manual dexterity, bipedalism, and tool use simultaneously showed signs of improvement, all evolving together with enhanced mental capacity. What made the hominid brain truly distinctive was its division into two asymmetrically structured hemispheres, each containing identifiable areas designed to control particular mental and behavioral functions. Among other consequences now vital to our existence, habilines may have possessed a feature of the cerebral cortex known as Broca's area, a region connected with speech in modern humans. Despite an immature larynx, which would have limited the range of sounds they uttered, habilines may have articulated a combination of vowels and consonants adequate for the exchange of some genuinely complex ideas.

Significance of *Homo Erectus*

As ever more elaborate cultural innovations augmented biological changes, the pace of hominid evolution quickened, starting with the appearance of *Homo erectus*, a species that apparently evolved from habilines in East Africa between 1.9 and 1.6 million years ago. Erectines were more humanlike in their anatomical features and behavior patterns than any of their hominid predecessors. What made them such a milestone in the biological evolution of our kind, however, was their impressive cranial capacity. The brain of *Homo erectus* was not simply bigger, but it was distinctly less symmetrical, since each part expanded at a different rate and was designed to perform specific functions.

Better control over the hand as well as the unprecedented ingenuity made possible by an increased brain-to-body ratio enabled erectines to become more sophisticated toolmakers and to create what paleoanthropologists call the Acheulian tradition. Beginning about 1.6 million years ago, they gradually learned to devise a more patterned and versatile stone artifact known as the hand axe. Erectines discovered how to remove flakes from both sides (faces) of a shaped stone core, producing two straight, sharp edges that converged at a point. Erectines made another important technological innovation when they introduced the cleaver, and they turned to other materials, such as volcanic rock and flint. No later than a million years ago they possessed a standardized tool kit containing at least eighteen types of highly effective implements, each proportioned in accordance with its intended purpose.

Nearly 1.5 million years ago, *Homo erectus* took definite steps toward the controlled use of fire, the next great cultural advance after the fashioning of stone artifacts. The domestication of fire, for which archeologists have evidence dating back 400,000 years, gave hominids their first real command over a powerful force of nature. Still unable to ignite a fire on their own initiative, they nonetheless taught themselves to collect flaming debris from volcanic eruptions and lightning strikes and actively keep it burning in small hearths. Fires provided warmth as



well as protection against dangerous animals. Erectines may have intermittently exploited fire for cooking as early as 700,000 years ago. As opportunities arose, they certainly drove game in a desired direction and opened up their hunting grounds with fire. Drawing on it in their toolmaking, they hardened green wood and occasionally bone or antler in the heat of their hearths. Along with warmth, fire provided light, permitting *Homo erectus* to lengthen the day.

Erectines learned how to turn animal skins into clothing, and at least 400,000 years ago started to build substantial, oval-shaped huts. Such attainments, taken together, underscore the extent to which they had become dependent on cultural rather than biological adaptations in comparison with their hominid predecessors. Until roughly a million years ago, the evolution of every living thing had unfolded largely in response to challenges emanating out of the natural environment. Then, uniquely with *Homo erectus*, shared understandings and norms of conduct, painstakingly learned and transmitted to the next generation, began to override behavior dictated strictly by genetic inheritance, more and more setting the context for everyday existence.

Given the size and complexity of their brains, erectines probably became more adept at sharing their thoughts through speech. Their nearly human linguistic potential enabled them to become active and

perhaps even habitual hunters. Coming together in groups to improve their chances for successful expeditions aimed at big game strengthened and multiplied the patterns of interdependence between erectines, making their social structures more complex, tight-knit, and more recognizably human than any network of relations that may have prevailed among habilines. They probably took a full million years to forge the enduring characteristics of the gathering and hunting adaptation, a lifeway at once highly flexible and extraordinarily stable.

Homo erectus was the first hominid to spread far beyond the African continent. Successive waves of a grand migration out of Africa may have started a million and a half years ago, but the first well-documented expansion into the frost-free zones of Eurasia occurred about 500,000 years later. Erectines funneled through the Near East, fanning out into southern Asia, where they encountered woodlands and savanna environments similar to those they had left behind. They simultaneously moved westward into parts of Europe without ever establishing an appreciable presence there. Reacting to mounting population pressures, tiny parties of the sole surviving hominid species dispersed by means of repeated budding—the splitting away of a small group from an existing band—in a continuous process which enabled them to reach southern China at least 800,000 years ago by way of India and Southeast Asia.

The tempo of evolutionary change again accelerated about 400,000 years ago. In what must have been a mutually supportive feedback process, erectines in Africa and Europe abruptly showed signs of perceptible cranial expansion at a time when they were mastering the deliberate ignition of fires and developing bona fide strategies for hunting large game animals. Just 200,000 years later, *Homo erectus* had virtually disappeared, having succumbed to competition from the most recent hominid species—*Homo sapiens*, or “wise man.” Isolated erectines did survive in Java until *Homo sapiens* intruded into the region between fifty and sixty thousand years ago. For world historians, the task of sorting out these issues has been complicated by experts who now argue that a hominid species called *Homo ergaster* was probably the forerunner of

modern humans, while erectines should be regarded as a branch of humankind's lineage.

Emergence of *Homo Sapiens*

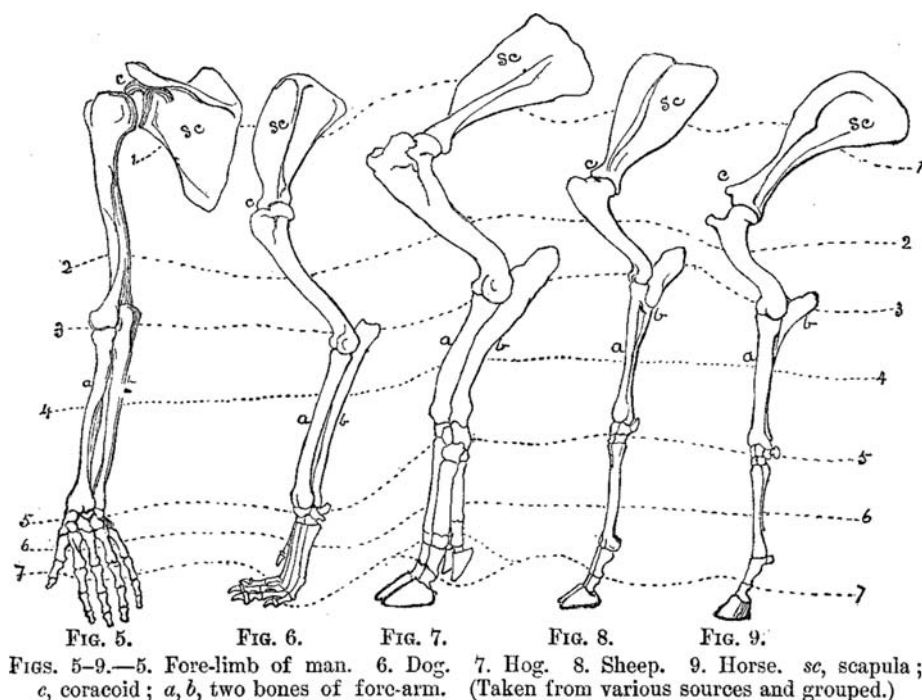
Although gaps in the archaeological record have kept scholars from acquiring a clear understanding of how the emergence of anatomically modern humans actually unfolded, archaic *Homo sapiens* seem to have appeared first in north central and East Africa, but by 200,000 years ago, they had colonized much of Africa, and settled into the temperate latitudes of Eurasia. Always more populous in Africa than elsewhere, bands of archaic humans migrating out of that continent apparently displaced *Homo erectus* in one location after another, and subsequently diversified into many distinctive regional types without ever branching into more than a single species. From a cultural perspective, archaic *Homo sapiens* made few innovations beyond the sphere of stone toolmaking. About 200,000 years ago, however, an indisputable advance in stoneworking appeared in tropical Africa, and subsequently spread to Europe, most likely through cultural contacts. This more sophisticated technique, known as Levallois, relied on stone (typically flint) cores preshaped into set patterns, which allowed craftsmen to determine with reasonable consistency the dimensions of their flakes. The Levallois tool kit featured specialized scrapers and rough-hewn projectile points attached to wooden shafts among its more than fifty kinds of purposely designed implements.

The first signs of a cultural takeoff appeared with Neanderthals, or *Homo neanderthalensis*, which evolved in Europe and western Asia sometime after 250,000 years ago. Whether they constituted a distinct species or represented a subspecies of *Homo sapiens* continues to be another source of disagreement among the experts. In any case, learning to adapt to intensely cold climates, they extended the range of hominid settlement far beyond frost-free ecological zones, penetrating the great Siberian forests and unforgiving Arctic tundra. Neanderthals showed themselves to be outstanding toolmakers; they reinforced the trend toward smaller, lighter stone artifacts by improving the prepared-core techniques of the Levallois

tradition. Never exploiting the possibilities of bone, antler, or ivory, they did utilize wood in assembling what could have been the first composite tools. Striving to increase the number of specialized devices, they developed the disc-core method to yield thin flakes easily trimmed at their sharp edges. With this approach, Neanderthals maintained a tool kit of more than sixty separate types of finely crafted implements, including haftable spearheads as well as delicate little saws and borers.

By 120,000 years ago, techniques characteristic of what paleoanthropologists call the Mousterian industry had spread to Africa, probably from southern France. Exploiting nature like no hominids before them, Neanderthals pushed into habitats as diverse as the Russian steppes and the immense mountain ranges of Asia. Their propensity for wearing animal furs for clothing, erecting skin-covered tents and hut-like structures made from bones and tree branches, constructing snares with sinews, and maintaining hearths within which to start encampment fires enabled them to gather in settlements as far north as the Arctic Ocean. Armed with heavy spears and a rudimentary spoken language more complex than anything *Homo erectus* had produced, Neanderthals became magnificent big-game hunters. Still lacking the cognitive capacity essential for modern speech, they nonetheless began to bury their dead in simple but clearly self-conscious ceremonies no later than 75,000 years ago. Experts have presumed that their ritualized treatment of death reflected at least an elementary awareness of mortality, a need to think about dying, and possibly even belief in an afterlife.

Somewhat later, Neanderthals created the first known ceremonial pieces and decorative objects out of pebbles, and the teeth and bones of animals. Personal ornamentation, whether accomplished with jewelry or body paint, presumably allowed them to express a hint of individuality and offered a means of declaring whatever social status they enjoyed. They could also unequivocally assert their kinship ties, thereby regularizing interactions within and between bands. However, none of these accomplishments meant that Neanderthals could match the overall cultural levels attained by anatomically modern humans, and thus



This early study involving human evolution depicts human bones next to those of other animals. Comparative anatomy was an early focus in the field of human evolution.

make the behavioral adjustments that could have delayed, if not prevented, their extinction.

Anatomically Modern Humans

Experts who have advocated a multiregional interpretation of human origins envision distinct populations of *Homo sapiens* undergoing similar evolutionary alterations in different areas of the Eastern Hemisphere more or less simultaneously. Yet the preponderance of current archaeological, genetic, and fossil evidence seems to indicate that beings with a physiological and behavioral potential virtually indistinguishable from humans currently inhabiting Earth first evolved from African ancestors beginning about 200,000 years ago. Between 100,000 and 30,000 years ago, *Homo sapiens* appeared throughout most of the Eastern Hemisphere, gradually replacing the various populations of their archaic forebears. No later than 30,000 years ago, they had become the sole surviving hominid type, and the anatomical attributes as well as the cultural capabilities that have subsequently characterized our kind were fully formed.

The hallmark features of *Homo sapiens* were located from the neck up. They had delicately configured vertical faces with high foreheads, small brow ridges and teeth, reduced jaws, and prominent chins. Their modified vocal tracts made room for

an enlarged pharynx and for the rearrangement of vocal cords, larynx, and tongue that together permitted them to make more varied sounds—in particular vowel sounds. The ability to speak fluently was interrelated with a further enlargement and internal reorganization of the human brain, now encased in a higher, rounder skull. Amazingly, the diverse facets of our mental potential are products of the brain's structural complexity. While nearly four-fifths of the cortex remains uncommitted to particular operations, leaving substantial areas free to apply previous experience to immediate circumstances or forge links between seemingly unrelated ideas, certain parts of the brain perform highly specialized functions, the left hemisphere being organized for such tasks as sequential thinking and language, the right hemisphere for abstract and intuitive reflection.

Homo sapiens possess a unique ability to create symbols, and through symboling to infuse objects and ideas with discretionary meanings that transcend whatever may have been derived from sense experience. Symboling attained its ultimate expression in language, perhaps the most revealing outgrowth of our intelligence. Along with language came the earliest manifestations of culture based upon the symbolic expression of shared understandings. The capacity to create meaning and value and to infuse meanings and

Observe constantly that all things take place by change, and accustom thyself to consider that the nature of the Universe loves nothing so much as to change the things which are, and to make new things like them.

• Marcus Aurelius (121–180 CE)

values into objects and events made it possible for human culture to reach full expression as a marvelously flexible, quickly modified, and endlessly cumulative adaptive mechanism that has almost replaced biological evolution as the primary determinant of our long-term survival.

Upper Paleolithic Takeoff

Beginning about 40,000 years ago, anatomically modern humans were already approaching the threshold of a cultural breakthrough that would mark a profound watershed in the human experience. Armed with spoken languages that improved the transmission of information, and probably driven for the first time by population pressures, they added to their cumulative heritage at an accelerated rate. Our Upper Paleolithic ancestors thus stood on the brink of making their culture—learned systems of behavior based on their symbolizing capacities—a complete way of life. Their intensified creativity peaked at the height of the last ice age 18,000 years ago, and lost momentum roughly 11,000 years ago. In crossing this Upper Paleolithic watershed, humans fundamentally transformed their social structures, making their gathering and hunting adaptations far more elaborate, diverse, and specialized than ever before. No later than 15,000 years ago, clusters of bands in regions with unusual population densities were organizing themselves into larger tribal units that could number up to eight hundred people.

As networks of interaction became more extensive, the growing need for a formal expression of beliefs that could help them preserve values, heighten social coherence, and overcome tension and uncertainty in their lives surely contributed to the relatively swift development of human aesthetic sensibilities. Artistic creativity rapidly assumed an incredible variety of forms. Rock engravings date back more than 35,000 years, while large quantities of sophisticated ornaments made of carved wood, bone, antler, ivory, shells, and stone date back at least that far. These ornaments include personal objects such as necklaces, pendants, and bracelets as well as tools and weapons used for ceremonial or decorative purposes.

Archaeologists have unearthed artifacts more than 30,000 years old with patterned markings that may be lunar calendars and systems of mathematical notation. They have discovered remarkably beautiful cave paintings in France and Spain, sculpted figurines nearly as ancient, and the remains of musical instruments as varied as bone flutes, whistles, rattles, and drums. In addition, Upper Paleolithic peoples apparently expressed themselves through the rhythmic flow of poetry, dance, and song, although experts have little empirical evidence verifying such activities.

These arts derived their social potency from supernatural beliefs nearly as old as *Homo sapiens* themselves. Yet another manifestation of abstract thinking, human spirituality and religious responses to the world soon permeated every facet of daily existence. *Homo sapiens* discovered a means of comprehending perceived phenomena in terms of ubiquitous spirits, all instrumental in determining what happened in the world through activities almost everyone could understand. Through a holistic formulation of mythic concepts that embodied the actions of these spirits, they elaborated on what little they knew about the world from direct experience with visions that inserted humankind into a single, all-encompassing order of existence.

Like the spectacular burst of innovations in art and religion, radical advances in Upper Paleolithic tool-making beginning roughly 35,000 years ago reflected the newly enhanced symbolizing capacity of modern humans. All of a sudden craftsmen were devising a wide range of more specialized, durable, and efficient implements. Along with at least 130 identifiable devices, the tailored clothing, control of fire, and insulated shelters that anatomically modern humans developed helped them expand throughout Earth's habitable regions during the Upper Paleolithic.

Peopling of the Planet

Waves of migrations out of Africa, where populations were heaviest, began modestly around 100,000 years ago, exploded 40,000 years later, and by the start of the Holocene epoch 10,000 years ago gave to humankind a virtually global range. Pushed forward by



frequent band splitting, *Homo sapiens* soon traversed the open grasslands of a Sahara region somewhat cooler and wetter than it is today and moved into the Near Eastern corridor. A progressively arid climate then drove excess populations into the steppe lands and tundra of southern Europe and western Asia. Anatomically modern humans appeared in East Asia 70,000 years ago at the very latest, reaching the heart of what is today China perhaps 30,000 years ago, not too long after Cro-Magnons (a particular population of anatomically modern humans) had established themselves in Europe and at approximately the same time that pioneers were starting to adapt to Arctic latitudes in earnest.

By moving along the southern shores of Asia, humans reached Australia some 40,000 years ago and perhaps as much as 20,000 years earlier. Around 45,000 years ago, the sea level in Australia was probably about 200 meters lower than it is now, meaning that mainland Australia and adjacent islands would have been connected. It is reasonably widely accepted that at this time people had already arrived in the region. There is also some evidence, such as at Lake Mungo in New South Wales, that suggests Australia was home to small populations as early as around 62,000 years ago. At the least there is some mitochondrial DNA evidence that lends support to the disputed theory that the peopling of Australia took place earlier than 45,000 years ago as a single founder population that was later cutoff or isolated from much of the rest of the world.

Although experts hold various theories about the peopling of the Americas, they agree that it happened at a relatively late date, and most likely involved a land bridge across the Bering Strait, known as Beringia, which appeared and vanished as ocean levels rose and fell. Although the earliest evidence for possible human settlement in the Americas has been problematic at best, isolated bands may have reached central Alaska as many as 40,000 years ago. Archaeologists have recently verified a site of human habitation at Monte Verde, located roughly 800 kilometers south of Santiago, Chile, that was certainly occupied 12,500 years ago and may date back more than 30,000 years. What experts have concluded with confidence is that

between 14,000 and 12,000 years ago, scattered Paleo-Indian settlements with tool kits, languages, and cultural traditions resembling those common on the other side of the strait expanded throughout eastern Beringia and south of the retreating glaciers onto the Great Plains. Shortly after 12,000 years ago, the Paleo-Indian population suddenly exploded, pushing human beings to continuously occupy much of the Americas within several millennia.

Here it is worth noting a theory associated with the volcanic eruption at Lake Toba, on Sumatra (Indonesia) around 70,000 to 75,000 years ago. Probably one of the largest volcanic eruptions of the last twenty-five million years, it is thought to have plunged the Earth, already in the midst of an ice age, into an even darker and colder phase. Based on mitochondrial DNA evidence, it is thought that this cold snap might have reduced the world's human population to less than 10,000 breeding pairs, effectively creating a sort of "bottleneck" in human evolution. Nevertheless, by the end of the most recent ice age, *Homo sapiens* had established themselves as the most numerous and widely scattered mammals on the planet, a dominant species culturally equipped to manipulate the natural environment in a manner potentially beneficial to their well-being, but simultaneously disruptive of the ecosystem's sensitive balances. Although world population had probably reached 10 million in the aftermath of the Upper Paleolithic watershed, the gathering and hunting adaptation continued to prevail everywhere *Homo sapiens* resided. The attributes that now distinguish us as human beings had emerged at different stages in a prolonged and complicated evolutionary process as yet not fully explained, despite many recent scientific advances. Although the relatively hospitable savannas of sub-Saharan Africa invariably provided the setting for the emergence of our species, we cannot readily designate a precise period in world history when our behavior became truly human, unless it would be the tremendous evolutionary leap that occurred during the Upper Paleolithic.

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See also Paleoanthropology; Universe, Origins of

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Human Rights

After World War II, those building a new international legal structure understood that protecting the human rights of all people was necessary to avoid future global conflagrations. The spread of democracy further boosted human rights issues. Although nations continue to disagree about the universality of certain human rights, a clear global consensus has emerged about the need to recognize the fundamental rights of every individual.

Human rights have emerged as a major subject of international law since 1945. Before World War II, the international community gave little attention to how a country treated its own citizens within its own borders. This reluctance ended after the world witnessed the horrors committed by Germany against its own citizens during World War II, as well as by Germany and Japan against the citizens of the countries they occupied.

Historical Background

The focus on individual rights in Europe evolved over centuries as monarchs began to recognize the political and economic rights of at least some individuals. In England, the Magna Carta in 1215 and events in subsequent centuries gradually gave wealthy male property-owners some rights that they could assert against the crown. The American Declaration of Independence in 1776 declared that “all men are created equal,” but all of the original thirteen states in fact granted rights only to white males, and many only to male property-holders; African slaves, Native Americans, and women were granted no rights

to participate in political decision-making. Slavery was not eliminated until almost nine decades after the United States declared its independence; women were not given the vote until 1920; and Native Americans were not finally accepted as U.S. citizens until 1924.

Like the American Revolution, the French Revolution in 1789 was based on concepts of individual liberty, and some European writers of the time articulated the watershed idea of a government, based on the consent of the governed, that would protect the worth of each individual. France and the other European nations moved slowly, however, in the direction of any real recognition of individual equality.

Laws of War

Western nations also made efforts in the nineteenth century to reduce the destructive effects of warfare by distinguishing between combatants and noncombatants and by protecting those captured in battle. In the United States, President Abraham Lincoln asked the political philosopher Francis Lieber to draft a code to govern military conduct during the U.S. Civil War (1860–1865). The laws of armed conflict were further developed by international treaties such as those promulgated at the 1899 and 1907 Hague Conferences, which attempted to protect civilians in time of war and focused on prohibiting the use of weapons that caused unnecessary suffering without providing a significant military advantage.

The Geneva Conventions of 1929 provided a comprehensive and widely ratified set of treaties designed to protect captives and civilians in warfare. These treaties were revised in the four Geneva Conventions

My humanity is bound up in yours, for we can only be human together. • **Desmond Tutu (b. 1931)**

of 1949 and were further updated through two protocols adopted in 1977.

These early efforts were important in providing some recognition of individual rights, but the real impetus to protect human rights at the international level did not begin until after World War II. The post-war trials of German and Japanese war criminals held in Nuremberg and Tokyo were defining moments in reinforcing the culpability of human rights abuses. Although criticized at the time as “victors’ justice,” that is to say, punishment of the losers of the war by the winners, the careful and dramatic evidentiary documentation of government planning and implementation of systematic wartime atrocities made clear the need to work toward a world where such depravities would “never again” occur.

International Human Rights Law in the Postwar Era

The most important event in the development of contemporary international human rights standards was the establishment of the United Nations in 1945. The United Nations Charter contains two key articles recognizing the importance of protecting the human rights of all individuals: Articles 55 and 56 state that the United Nations and its members shall promote “universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language, or religion.”

Pursuant to this mandate, delegates representing the founding members of the United Nations, led by the former U.S. first lady Eleanor Roosevelt, drafted the Universal Declaration of Human Rights, which listed the fundamental rights of individuals. This text was promulgated by the U.N. General Assembly in 1948, the same year the Genocide Convention was offered for ratification (the latter came into force in 1951). The Universal Declaration has come to be respected as an authoritative listing of rights, and its provisions are now widely regarded as customary international law.

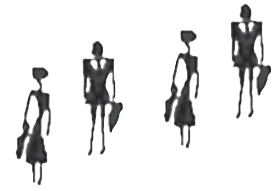
Many U.N. delegates wanted a formal treaty to give the rights listed in the Universal Declaration

even more force. The ensuing process of treaty drafting took eighteen more years. The United States and others viewed human rights as primarily civil and political rights, designed to allow individuals to participate in political decision-making and to protect them against government abuses. But other countries stressed the additional importance of economic, social, and cultural rights, arguing that food and shelter, for instance, were more basic and more important for those in the developing world than the more abstract civil and political rights. These different categories of rights require different mechanisms of enforcement, because economic rights can be protected only through the expenditure of money; thus, the enforcement of economic rights is commonly regarded as best undertaken by legislative bodies balancing competing priorities, rather than by courts with no budgetary responsibility.

Because of differences such as these, it was decided to prepare two separate treaties, and in 1966 the U.N. General Assembly promulgated both the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social, and Cultural Rights.

In the first treaty, the fundamental civil and political rights include the right to life; the right to freedom from torture and cruel, inhuman, and degrading treatment; the right to freedom from slavery; the right to freedom from arbitrary arrest and detention; the right to equal treatment without regard to race or sex; the right to participate in political decision-making, directly or through chosen representatives; the rights to freedom of thought, conscience, and religion; the rights to freedom of opinion, expression, association, and assembly; the right to privacy; the right to freedom of movement; and the right to fair procedures in criminal, civil, and administrative matters.

The International Covenant on Civil and Political Rights is overseen by the Human Rights Committee, an eighteen-member body based in Geneva, Switzerland, with members elected by the countries that have ratified the treaty. Ratifying nations provide regular reports regarding their human rights record to the committee, and individuals can bring complaints



against their own government, if the government has also ratified the Optional Protocol to the Covenant. The opinions issued by the committee are influential in clarifying the rights in the treaty and can be used by the complaining parties in their national courts. Complaints can also be filed by one country against another under Article 41 of the covenant.

The fundamental economic, social, and cultural rights in the second treaty include rights to free choice of employment and to form and join trade unions; rights to education, food, housing, and health care; the right to rest and leisure; and the right to participate in the cultural life of the community. Again, ratifying countries are expected to prepare reports regarding their protection of these rights, and the committee established to review these reports issues opinions to provide guidance to the ratifying countries.

Groups of people also have human rights recognized under international law: Article 27 of the International Covenant on Civil and Political Rights recognizes the right of members of ethnic, religious, and linguistic minorities to enjoy their own culture, practice their religion, and use their own language. Indigenous people who are not self-governing also have the right to self-determination. Other rights generally recognized as important, but whose specific content and means of enforcement continue to evolve, include the right to a clean and healthful environment, the right to economic development, and the right to peace.

In addition to these global covenants, many specialized treaties addressing specific human rights areas have been promulgated by the international community including the 1951 Convention Relating to the Status of Refugees (and its 1967 Protocol), the 1966 International Convention on the Elimination of Racial Discrimination, the 1979 Convention on the Elimination of All Forms of Discrimination Against Women, the 1984 Convention Against Torture and Other Cruel, Inhuman, or Degrading Treatment or Punishment, the 1989 Convention on the Rights of the Child, and the 1989 International Labor Organization Convention Concerning Indigenous and Tribal Peoples in Independent Countries. Also of substantial

importance are the three regional human rights treaties: the European Convention for the Protection of Human Rights and Fundamental Freedoms, the American Convention on Human Rights, and the African Charter on Human and Peoples' Rights.

The European Court of Human Rights issues opinions binding on the European nations, and it has evolved into a court of last resort on a wide range of important and controversial issues. In the 2003 case of *Lawrence v. Texas*, the U.S. Supreme Court cited some of these European cases to provide support for a ruling that declared a Georgia law banning sodomy unconstitutional. The American Convention on Human Rights is overseen by a seven-member commission and a seven-member court, both based in San Jose, Costa Rica. Although this convention has not yet attained the near-universal ratification of the European Convention, the Inter-American Human Rights Commission and Court have issued numerous important opinions bringing clarity to human rights principles applicable in the Western Hemisphere.

Also helping to identify and protect human rights is the United Nations Commission on Human Rights, a body that reports to the U.N. Economic and Social Council (ECOSOC). The Human Rights Commission consists of fifty-three government representatives elected by ECOSOC for three-year terms. It meets in Geneva for six weeks each spring to discuss specific human rights violations, initiate studies and fact-finding missions, and draft conventions and declarations.

Universal Jurisdiction

Because international and regional enforcement mechanisms (with the exception of the European Court of Human Rights) remain somewhat primitive and inadequate, some human rights victims have attempted to utilize national courts to bring claims against human rights abusers. These cases have been brought under the theory of "universal jurisdiction," which allows those who violate the most fundamental human rights to be sued and prosecuted in any jurisdiction where they are found.



In London, in 1998, masked protestors demand that General Augusto Pinochet be returned to Chile to answer war crimes' charges.

U.S. federal courts have adjudicated a number of universal jurisdiction claims, utilizing jurisdiction provided by the Alien Tort Claims Act, which was enacted by the First Federal Congress in 1789, and the Torture Victim Protection Act, enacted in 1992. A claim was brought in 1986 in the federal court in Hawaii, for example, by a class of 9,500 victims of torture, murder, and disappearance in the Philippines during the dictatorial regime of Ferdinand Marcos, which lasted from 1972 to 1986. A U.S. federal jury determined that Marcos was personally liable for these atrocities, and awarded the class members \$775 million in compensatory damages and \$1.2 billion in exemplary or punitive damages. Efforts to collect this judgment have been frustrated, but are continuing.

Other countries, including Spain and Belgium in particular, have also utilized universal jurisdiction to bring human rights abusers to justice. In late 1998, after former Chilean dictator general Augusto Pinochet arrived in London for a herniated disc operation, a Spanish judge asked the United Kingdom to extradite him to Spain for prosecution for torture and murder during his seventeen-year rule from 1973 to 1990. The British House of Lords ruled that Pinochet did not have any immunity from such prosecution and that he should be extradited, but the transfer never took place because of Pinochet's declining health.

In the 1990s, the U.N. Security Council established criminal tribunals to prosecute those who had

committed war crimes, crimes against humanity, or genocide during the civil war in the former Yugoslavia and the ethnic slaughter in Rwanda. More recently, tribunals utilizing both local and international judges have been established to prosecute those who engaged in criminal behavior in Sierra Leone and East Timor, and efforts are continuing to establish a similar tribunal in Cambodia.

To establish a permanent court to deal with future systematic abuses, the countries of the world met in Rome in the summer of 1998 to draft a treaty creating an International Criminal Court. The treaty needed sixty ratifications, which were obtained relatively rapidly, and the court came into existence in March 2003, when its eighteen judges from all over the world were sworn in. The International Criminal Court has jurisdiction over war crimes, crimes against humanity, and genocide, and it will gain jurisdiction over the crime of aggression, after that term is defined in further detail. Although some important nations, including the China, India, Russia, and United States, remain reluctant to ratify the court's statute as of 2010, its establishment stands as a landmark achievement in the quest to protect human rights globally.

Human Rights in the Twenty-First Century

Although nations continue to disagree about the universality of certain human rights, a clear global

consensus has emerged about the necessity of protecting the fundamental rights of every individual. The nations of the world have made enormous strides in defining these rights during the past sixty years. Although the mechanisms for protecting human rights are still evolving, the mix of national, regional, and international tribunals currently being employed to prosecute wrongdoers and provide compensation for victims is beginning to show promise. The dream of having a world where every individual's rights are protected has not yet been attained, but progress toward that goal is continuing.

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See also Gay and Lesbian Rights Movement; Genocide; Indigenous Peoples; Labor Union Movements; Race and Racism; Roosevelt, Eleanor; United Nations; Women's Emancipation Movements; Women's Reproductive Rights Movements; Women's Suffrage Movements

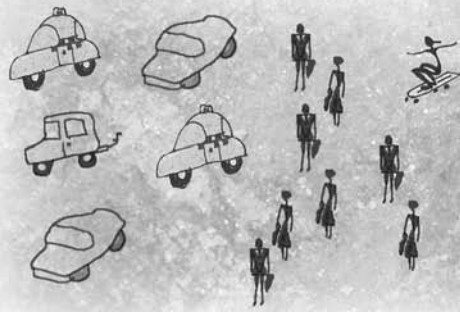
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Hygiene

Hygiene, in its modern sense the act of personal and domestic cleansing, is an adaptive behavior practiced by insects, birds, fish, and animals (including humans); organisms that can best reduce the costs of disease through the avoidance of parasites become more evolutionarily “fit.” Hygienic behavior in humans has been culturally elaborated to serve symbolic, ritual, and moral functions.

Hygiene is the set of behaviors that keeps individuals and their environments clean, especially to prevent infection. The word hygiene has narrowed its meaning through history. Its roots are Indo-European; *hy* is thought to have meant “well” and *gies* to have meant “live.” The Greek word *hygies* means “in good health” or a force “good for health, promoting health.” Hygieia, daughter of Asclepius, was the Greek goddess of health (Parker 1983). Hygiene still had this broader connotation as the science of public health in the Anglophone world of the nineteenth and twentieth centuries, but in recent decades it has taken on a narrower sense as personal and domestic cleaning, and some now use it even more narrowly to denote behavior or rituals involved in avoiding germs.

All animals, including humans, exhibit hygienic behavior because it is adaptive. Animals are under constant pressure from microparasites such as viruses, fungi and bacteria, and macroparasites such as nematodes (roundworms), helminths (intestinal worms), and insects that are seeking nutrition, shelter, and reproductive opportunities within, or on, their bodies. Those animals that can best reduce the costs of disease through the avoidance of parasites do best in the evolutionary fitness stakes, all else being equal.

Hence, animals invest energy in carrying out the hygienic behaviors that serve to detect, deter, avoid, and remove damaging parasites from their bodies and environments. In humans hygienic behavior has been culturally elaborated beyond these basic functions to serve symbolic, ritual, and moral functions.

Animal Hygiene

To judge from its ubiquity today, hygienic behavior is probably almost as old as animal life itself. So, for example, the simple nematode worm *Caenorhabditis elegans*, which has only 302 neurons, can detect the presence of a parasitic species of bacterium in its petri dish and flee from it. Insects display many hygiene behaviors. Social insects such as ants and termites groom each other, and they build nests using materials that incorporate antifungals and antibacterials. Many social species employ separate castes to carry wastes, as well as the sick and the dead, to dung-hills; if an ant relegated to the status of a “cleaner” tries to contact other ants it is repulsed with aggression (Holldobler and Wilson 1990). Insects avoid fouling their ranges with their own feces (frass) by shooting it out, flicking or pushing it away, walling it up in their webs, or disposing of it in disused tunnels (Weiss 2006). Lobsters make sure their dens are clean and ventilated; the gregarious Caribbean spiny lobster demonstrates social hygiene by refusing to share a den with others infected with the lethal PaV1 virus. Similarly, killifish avoid shoaling with other fish that appear to have parasites. In the Red Sea, the surgeonfish stops feeding on the reef every five to ten minutes and swims to a spot beyond the reef edge to defecate. Reptiles demonstrate similar



The chickadee's nest. Parent birds remove excrement, eggshells, foreign debris, and ectoparasites from nests to preserve the health of their offspring. From *In the Morning Glow* by Roy Rolfe Gilson, illustrated by Alice Barber. New York: Harper, 1903. New York Public Library.

behaviors. Geckos, for example, defecate around the edges of their territories. Bullfrog tadpoles avoid other tadpoles that have a dangerous yeast infection. Salamanders that observe the food hygiene practice of not cannibalizing others reduce the risk of acquiring parasites.

Birds, such as the oystercatcher, are careful to avoid eating food that may contain parasites. Nestlings are particularly vulnerable. Parent birds therefore remove nestling excrement, eggshells, foreign debris, ectoparasites, and dead nestlings from their nests. Parent birds defecate away from nests; penguins, for example, can shoot out a projectile excrement that hits the ground about half a meter away from the nest, making stains that are used in biodiversity monitoring by satellite. The Great Tit, a common woodland species in Europe, cuts down on sleep to clean its nest if nestlings have a heavy infestation of fleas. Blue tits, falcons and starlings bring fragments of aromatic plants, which contain the same active compounds used by humans to make house cleaners and herbal medicines, to their nests. More than 250 bird species

are known to “ant,” that is, to rub crushed insects over their plumage. This behavior distributes compounds such as formic acid that protect from parasitic bacteria, fungi, and arthropods.

Mammals demonstrate myriad hygienic behaviors including: nest cleaning (badgers change nest material regularly); selective feeding (sheep avoid eating from patches of grass that are heavily dosed with dung); avoiding the sick of their species (female house mice distinguish the smell of sick males and refuse to mate with them); feces disposal (blind mole rats have latrine chambers; tapirs, badgers, raccoons, and lemurs use latrine sites); and grooming behavior (impala use their teeth to comb off lice). It seems that the reindeer’s annual migration may even be for hygienic purposes—moving in response to the build up of dung in calving grounds.

Primates are well known for grooming each other. Chimpanzees keep themselves clean too, for example, by engaging in penile hygiene—wiping themselves off with leaves after mating—while mother chimps sometimes wipe the behinds of their infants who have just defecated. Colobus monkeys rub their fur with the juices of leaves and fruit, probably to deter parasites, and many primate species avoid defecating on, or near, food plants. Primate troops limit their size, especially in parasite-dense ecozones, and quarantine new members until it is clear that they are healthy.

Extant animals across taxonomic groups thus demonstrate food hygiene (avoiding the consumption of parasites), personal hygiene (removing and discouraging ectoparasites), social hygiene, (avoiding contact or sex with sick others or outsiders who may be harboring parasites), and domestic hygiene (removing parasites, vectors [hosts], and parasite-containing wastes from the living environment). Some sedentary and social animals also display sanitary behavior (constructing a niche that is not conducive to parasites).

Human Hygiene

As recently evolved primates, *Homo sapiens* have inherited the gamut of food, social, personal, domestic, and sanitary hygiene behaviors from their ancestors.



Ancient Roman baths and bathing implements. Bathing in Rome was a communal activity, and public baths often included libraries or lecture halls.

This behavior is proximally motivated by disgust, an emotional reaction triggered in the brain which causes the avoidance of micro- and macroparasites (Curtis 2004). (The psychological systems that motivate animal hygiene behavior have been little studied, but presumably involve some form of proto-disgust.)

Disgust is universal in humans, as is hygienic behavior. It is thus likely that ancient humans, unlike their caricature, would have been hygienic. But evidence of early hygienic behavior among humans is hard to come by. The earliest signs of the interment of the dead date from the Middle Palaeolithic era. Neanderthals used seashell tweezers, possibly to pluck hair, and early cave paintings show beardless men, suggesting that grooming was common, perhaps to remove facial parasites. Hygiene artifacts are amongst the earliest material goods recovered; for example, an ivory comb in the collection of the Metropolitan Museum of New York dates from predynastic Badarian Egypt (3200 BCE). A Babylonian letter of the seventeenth century BCE counsels not sharing a chair, a bed, or a cup with a lady suffering from a disease. Excavations of the earliest city states of the

Indus basin dating from 3000 BCE found drainage structures, and early Minoan and Roman plumbing and toilet facilities are well documented.

Cleansing aids have a long history. Early cave dwellers may have discovered they could remove stubborn stains with the residue of fat and ash left over from roasting meat. The first recorded use of soap, however, is from Babylonian times, although the use of oil and a scraper was a more common way of cleaning the skin in the Greek and Roman eras.

Ritual and Religious Purification

While the above examples show an early concern for material hygiene, with the dawn of written records comes evidence of a further aspect of hygiene. Imaginative humans began to find the *idea* of hygiene useful in symbol and ritual. Disgust is a powerful emotion with seemingly magical properties. It is not just elicited by dead bodies, unfit food, bodily wastes and fluids, certain animals, and signs of sickness, but also by everything that has come into contact with such things—that is, anything that is contaminated (Rozin 2008). It is also elicited by moral violations (perhaps because disgust helps condemn immoral acts that are akin to social parasitism).

Early religions wove hygiene rules into their prescriptions for correct behavior. In ancient Egypt priests had to maintain immaculate purity by washing from head to foot twice every day and twice every night. The Semitic religions employ purificatory rituals such as “Kippuru,” the washing off of a specially applied paste, to remove material and moral pollution. Greek texts prescribed purificatory rituals to cleanse the pollutions of childbirth, death, sex, and murder (Parker 1983). Failure to cleanse a moral pollution could bring down the wrath of the gods. For example, in Sophocles’s ancient Greek drama *Oedipus the King*, a plague is visited on Thebes because of Oedipus’s sin in killing his father and marrying his mother. Oedipus’s stain (miasma) is purged by his self-blinding and exile.

The Laws of Manu, part of the four sacred Vedas of Hindu scripture (c. 200 BCE), prescribed the



Gerard ter Borch, *Woman Washing Hands* (1655).
Oil on oak.

avoidance of the twelve impurities of the body: oily exudations, semen, blood, urine, feces, the mucous of the nose, ear wax, phlegm, tears, the rheum of the eyes and sweat. Similarly, Leviticus 11–16 provides detailed rules about purity and impurity, listing, for example, animals that are clean and unclean, unclean bodily fluids, and unclean acts requiring ritual purification.

Mary Douglas's influential work on purity and pollution argues that such rules about impurity are byproducts of the ways in which societies organize themselves. She writes: "Dirt then, is never a unique, isolated event. Where there is dirt there is a system. Dirt is the by-product of a systematic ordering and classification of matter, in so far as ordering involves rejecting inappropriate elements" (Douglas 1966, 35).

But as we have seen, rules about pollution and contamination arise out of ancient hygiene instincts, driven by the evolved emotion of disgust, and so they cannot be explained purely as a product of culture. Although there is some limited variation between cultures in the substances and events labeled as "polluting," overall the historical and ethnographic record shows patterns that are consistent, with the

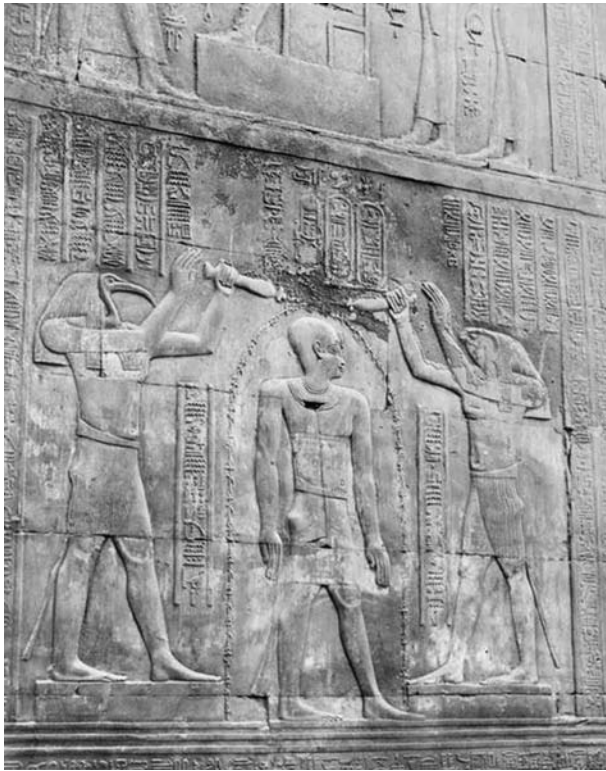
instinctual avoidance of those objects and situations where the risk of parasitic infection is highest.

Hygiene in Recent History

Prescientific thinking about hygiene had the gods intervene to punish pollutions. Secular beliefs—about contaminating bad airs or miasma as a cause of disease—replaced this thinking and continued to hold sway in western Europe for over 2000 years. Eventually those ideas too gave way to germ theory. There is much debate over the details of how and when the germ theory of disease took hold. A key development was, of course, the microscope. Yet it was more than three hundred years after Anton van Leewenhoek (1632–1723) demonstrated the teeming animalcules in the white matter between his "usually very clean" teeth that belief in germs became an established norm in Western medical discourse. The idea that invisible living organisms were responsible for disease spread in fits and starts through Europe and America over the second half of the nineteenth century.

This epidemiologic spread of Western ideas into other cultures was underpinned by the same intuitive concern for hygiene—that it could not be good for one to be invaded by disgusting tiny insects, fungus, or seeds (germs). It gained ground because it was taught by respected others who were known to have real cures for disease—in this case, the powerful colonizers, with their science and their microscopes. Nevertheless, germ theory spread unevenly across much of the world, sometimes to replace, and sometimes to live side-by-side, or hybridize with, local beliefs about the origins of disease. For example, in Burkina Faso, the intuition that dirt causes disease is well established. Diarrhea in children is thought to be caused by contamination of the mothers' milk by sperm if sexual relations have been resumed postpartum and by worms. But only *toubaboukonoboli*, translated as "white's diarrhea," is attributed to germs.

Hygienic behavior is universal in modern humans (Brown 1991). Irrespective of their knowledge of, or belief in, germs, every cultural group that has been



Pharaoh Ptolemy undergoes a purification ritual performed by Egyptian gods Thoth (left) and Horus (right). From a collection of nineteenth-century photographs of Egypt and Nubia by Antonio Beato and others. New York Public Library.

studied demonstrates and values food, personal, social, and domestic hygiene. While economic and scientific development has led to major improvements in environmental health and hygiene in the

West, epidemiological studies show that greater investment is needed in public health and hygiene in less developed countries. The widespread adoption of hand washing with soap, the removal of fecal contamination from water, better food hygiene, and the provision of modern sanitation systems could still save many millions of lives from infectious diseases in developing countries (Curtis and Cairncross, 2003).

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I Ching (*Classic of Changes*)

The text known as the *I Ching* (*Classic of Change*; or *Yijing*) originated in China about three thousand years ago. It profoundly shaped East Asian thought, was adapted as one of the five Confucian classics, and eventually came to influence writers and thinkers worldwide. As a book about divination and the source of wisdom, it is both a repository of moral and political insight and a guide for individual self-fulfillment.

The Chinese text *I Ching* (*Classic of Changes*), exemplifies the process by which great and enduring philosophical and religious texts (classics) evolve in one cultural environment and are then transmitted to, and often transformed by, other environments. (*I Ching* is the Wades-Giles transliteration that became, and still is, widely used; *Yijing* is the more recent pinyin transliteration. The *I Ching* is also commonly translated in English as the *Book of Changes*.) Originating in China as a primitive divination text three thousand years ago, the *I Ching* found its way to many parts of eastern Asia from about the sixth century CE onward. Beginning in the seventeenth century, it traveled to Europe and eventually the Americas. Today, translated into several dozen languages, the *I Ching* continues to be consulted by millions of people throughout the world.

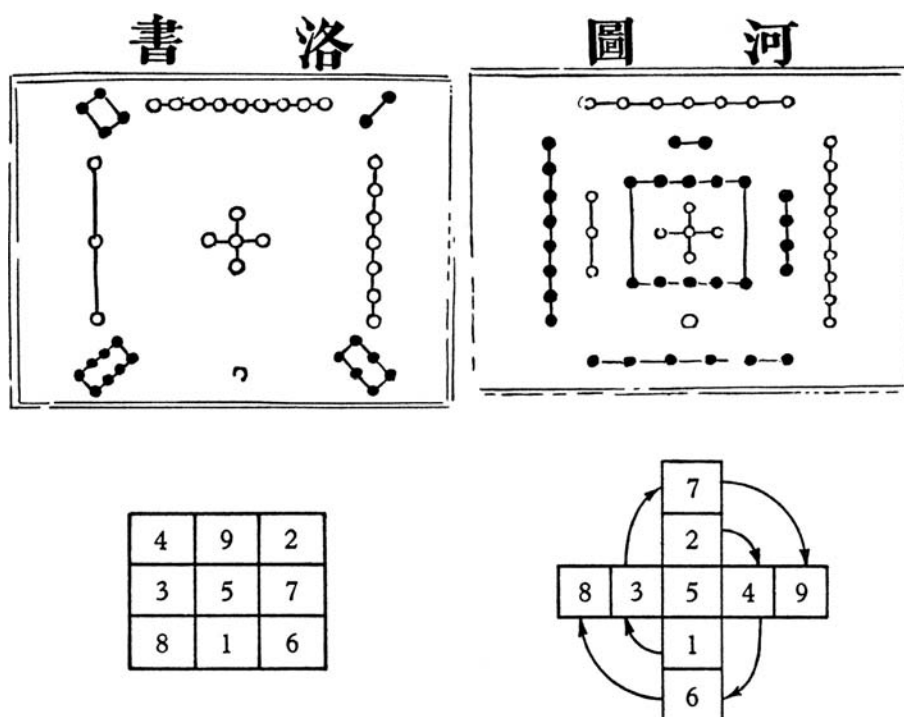
What sort of a text is the *I Ching*, and how did it come to exert such a pervasive global influence? The ancient “basic text” consists of sixty-four six-line symbols known as “hexagrams” (*gua*). The theory of the *I Ching* is that these hexagrams represent the basic circumstances of change in the universe and that by consulting the text with a reverent spirit, one can select a hexagram that will provide guidance for the present and the future.

Each hexagram has a name (*guaming*) that refers to a physical object, an activity, a state, a situation, a quality, an emotion, or a relationship; thus Ding (Cauldron), Dun (Retreat), Meng (Youthful Ignorance), Yu (Enthusiasm), Song (Conflict), Tongren (Human Fellowship), and so forth. In addition, each hexagram possesses a short, cryptic description of several words, called a “judgment” (*tuan* or *guaci*). Finally, each line of every hexagram has a brief written explanation (*yaoci*) of that line’s developmental position and symbolism. Through a sophisticated analysis of line relationships and other variables, a person could not only “know fate” (*zhiming*) but also “establish fate” (*liming*)—that is, devise a successful strategy for dealing with any cosmically mandated situation.

The “Ten Wings”

During the early Han dynasty (206 BCE–220 CE) a set of poetic commentaries known as the “Ten Wings” became permanently attached to the *I Ching*, and the text received imperial sanction as one of the five major Confucian classics. These Ten Wings—particularly the so-called Great Commentary (*Dazhuan* or *Xici zhuan*)—articulated the *I Ching*’s implicit cosmology (a branch of metaphysics that deals with the nature of the universe) and invested the classic with a new philosophical flavor and an attractive literary style. The worldview of this amplified version of the *I Ching* emphasized correlative thinking, a humane cosmological outlook, and a fundamental unity between heaven, Earth, and people. For the next two thousand years or so the *I Ching* held pride of place in China as the “first of the [Confucian] classics.”

Diagrams from the *I Ching*. The Luo Shu diagram (top left) and He Thu diagram (top right) represent a simple magic square and a cruciform array of the numbers from 1 to 9. Even (yin) numbers are represented in black and odd (yang) numbers in white. In the Luo Shu magic square (bottom left) the numerals add up along any diagonal, horizontal line, or column to 15. The He Thu squares (bottom right) are rotated so both odd and even number sets (excluding the central 5) add up to 20.



In the fashion of classic texts in other major civilizations, the *I Ching* had a profound effect on Chinese culture from the Han dynasty to the end of the imperial era (1912 CE) in areas such as philosophy, religion, art, literature, political life, social customs, and even science. Thinkers of every philosophical persuasion—Confucians, Daoists, and Buddhists alike—found inspiration in the language, symbolism, imagery, cosmology, epistemology (the study or a theory of the nature and grounds of knowledge), ontology (a branch of metaphysics concerned with the nature and relations of being), and ethics of the *I Ching*. The *I Ching* also inspired a landslide of artistic and literary productions and provided an analytical vocabulary that proved extraordinarily serviceable in a wide variety of realms. During pre-modern times Chinese “scientists” used hexagram symbolism and *I Ching*-derived numerology (the study of the occult significance of numbers) and mathematics to explain a wide range of natural processes and phenomena in fields of knowledge that are today’s physics, astronomy, chemistry, biology, meteorology, and geology.

The *I Ching*’s great prestige and multifaceted cultural role in China commended it to a number of civilizations on the Chinese periphery—notably, Korea, Japan, Vietnam, and Tibet. In all of these

environments the *I Ching* enjoyed an exalted reputation and was employed in a variety of cultural realms. Not surprisingly, through time the *I Ching* came to be used and understood in ways that reflected the particular needs and interests of the “host” environment, and in the process the *I Ching* became less of an alien “Chinese” document and more of a “domestic” one. Thus, for example, its symbolism came to be used in Japan to express distinctively Japanese sensibilities, such as those connected with the tea ceremony and flower arranging. This process of domestication also allowed a scholar such as Jiun Sonja (1718–1804), who claimed that “every word of the *Ekikyo* [*I Ching*] is interesting and significant,” to argue that “the whole book has been completely borrowed [by the Chinese] from us [the Japanese]” (Ng 2000, 107).

Similar processes of appropriation and adaptation took place in the West. A group of seventeenth-century Jesuit priests known as “Figurists” made the earliest effort to bring the *I Ching* to the attention of Europeans (and at the same time to bring the Bible to the attention of the Chinese). The most prominent among these priests was Father Joachim Bouvet (c. 1660–1732). A significant part of the Figurist mission was to show, by fancy philological footwork, that the Bible and the *I Ching* were umbilically related. Thus, for instance, the three unbroken lines

This bronze mirror of the Tang dynasty, inspired by the *I Ching*, depicts constellation diagrams, the twelve animals of the zodiac, and the four symbolic animals of the Celestial Palaces.

Collection of American Museum of Natural History.



of the Qian (Heaven) trigram indicated an early Chinese awareness of the Trinity, and the hexagram Xu (Waiting), with its stark reference to “clouds rising up to Heaven,” symbolized the “glorious ascent of the Saviour.” Bouvet’s correspondence with the German mathematician Wilhelm Gottfried von Leibniz (1646–1716) led Leibniz to see striking similarities in the configuration of the “broken” and “unbroken” lines of the hexagrams in the *I Ching* and his own binary mathematical system.

In more recent times efforts to find a place for the *I Ching* in Western culture have continued unabated. During the 1960s in particular, translations of the book appeared in many parts of the Western world (and elsewhere), embraced by countercultural enthusiasts alienated from their own political, social, and philosophical traditions and searching for fresh answers to timeless or pressing questions. Meanwhile, creative thinkers in the arts and the sciences have used the *I Ching* either as inspiration or as a transcultural validation of their own original ideas.

Influence on the West

The *I Ching* thus influenced many realms of modern Western life, from the psychology of Carl Jung to the architecture of I. M. Pei. The choreographers Merce Cunningham and Carolyn Carlson have found inspiration in the *I Ching*, as have such noted composers as John Cage and Udo Kasemets. It has been a significant element in the art of people such as Eric Morris and the writings of a wide range of Western authors, including Philip K. Dick, Allen Ginsberg, Octavio Paz, Raymond Queneau, and Fritjof Capra. In the realm of

“pop” culture the *I Ching* has served as a vehicle for the expression of an array of ideologies, outlooks, and orientations, from feminism (*A Woman’s I Ching*) to sports (*Golf Ching*).

We may assume that the *I Ching* will continue to inspire creativity, in both East and West, for the same reasons it has inspired creativity in the past: its challenging and ambiguous basic text, which encourages interpretive ingenuity; its elaborate numerology and other forms of symbolic representation; its utility as a tool of divination; its philosophically sophisticated commentaries; its psychological potential (as a means of attaining self-knowledge); and its reputation for a kind of encyclopedic comprehensiveness. For those people who take the text seriously and approach it with intellectual depth and psychological insight, it will no doubt remain a stimulating document; then again, those people of a shallower intellectual or psychological disposition may put the *I Ching* to more superficial uses. In the words of a Chinese proverb, “The shallow man sees [the *I Ching*’s] shallowness, while the deep man sees [its] depth.”

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See also Confucianism

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*Perseverance alone does not assure success. No amount of stalking
will lead to game in a field that has none. • I Ching*

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Ibn Battuta

(1304–1368/1369)

ARAB SCHOLAR AND TRAVELER

Ibn Battuta, an Arab scholar and traveler, has garnered more recognition for his travel journals than Marco Polo. The accounts of his journeys in Eurasia and Africa, which record observations of nearly every conceivable facet of life in the fourteenth century, illuminate the values, customs, and cosmopolitanism of educated Muslims in the late Mongol era.

Among travelers of premodern times who have left any record of their adventures, Abu ‘Abd Allah Muhammad ibn ‘Abd Allah al-Lawati at-Tanji ibn Battuta is unrivaled for distance covered and sights seen. The account of his journeys in Eurasia and Africa between 1325 and 1354 is one of the most absorbing and historically valuable documents to come down to us from the medieval era. His *Rihla* strikingly reveals both the far-flung cosmopolitanism of Muslim civilization in the fourteenth century and the dense networks of communication and exchange that linked together nearly all parts of the Eastern Hemisphere at that time.

Born in Tangier, Morocco, in the time of the Marinid dynasty, Ibn Battuta grew up in a family known for careers in legal scholarship. He received an education in the religious sciences, literature, and law befitting a young Arab gentleman. In 1324, he left Morocco to perform the holy pilgrimage (hajj) to Mecca in western Arabia. Initially, he may have intended to study Islamic law in Cairo or one of the other Muslim university centers, and then return home to a respectable career in jurisprudence. Instead, he set forth on a remarkable twenty-nine year odyssey that took him from what is now Tanzania to Kazakhstan and from the South China

Sea to tropical West Africa. He traveled by donkey, horse, camel, wagon, and ship, covering in all 116,000–120,000 kilometers. His account of his adventures includes numerous delights, tribulations, and brushes with death. He was shipwrecked off the coast of Sri Lanka, lost in a mountain blizzard in Anatolia, captured by Indian bandits, attacked by pirates off the Malabar Coast, nearly executed by the Sultan of Delhi, infected with disease, and drawn into a plot to overthrow the government of the Maldive Islands. He also married and divorced several times, bought and sold slaves, fathered children, and sat in audience with Mongol monarchs.

Everything we know about Ibn Battuta’s routes and destinations is to be found in the narrative he produced at the end of his traveling career. The itinerary and chronology as he reports them are complex and often puzzling, but despite numerous uncertainties, we may with some confidence group the travels into ten major periods:

1. 1325–1326. Tangier to Mecca by way of Cairo and Damascus.
2. 1326–1327. Mecca to Iraq, western Iran, and back to Mecca.
3. 1328–1330. Mecca to Yemen, East Africa, South Arabia, the Persian Gulf, and back to Mecca.
4. 1330–1333. Mecca to Syria, Anatolia, the Pontic-Caspian steppes, Byzantium, the Volga River valley, Transoxiana (in present-day Uzbekistan), Afghanistan, and North India.
5. 1333–1341. Residence in the Sultanate of Delhi and travels in North India.

6. 1341–1345. Delhi to Gujarat, Malabar, the Maldiv Islands, Ceylon (present-day Sri Lanka), and Bengal.
7. 1345–1347. Bengal to Indochina, Sumatra, and southern China.
8. 1347–1349. Southern China to Sumatra, Malabar, the Persian Gulf, western Iran, Syria, Egypt, Mecca, Tunis, and Morocco.
9. 1349–1351. Travels in Morocco and southern Spain, including visits to Fez, Tangier, Gibraltar, Granada, Salé, and Marrakech.
10. 1351–1354. Sijilmasa on the northern fringe of the Moroccan Sahara to the West African Sudan, and back to Fez.

The relatively stable political conditions that prevailed in many parts of Afro-Eurasia in the second quarter of the fourteenth century no doubt facilitated Ibn Battuta's prodigious journeys. This was the twilight of the age of Mongol dominance. When he began his traveling career, four great Mongol states, three of them Muslim, ruled the greater part of Eurasia. Among other large and flourishing states were the Mamluk Empire in Egypt and Syria, the Sultanate of Delhi in North India, and the Mali Empire in West Africa—all Muslim. Typically, the rulers of these states encouraged long-distance trade and provided security for the interurban journeys of Muslim diplomats, preachers, and scholars, including Ibn Battuta.

Ibn Battuta's motives for travel were many. First, he journeyed as a religious pilgrim. He took part in the rituals of the hajj in Mecca six or seven times during his career, and indeed the Holy City became the central hub of his peregrinations. Second, he traveled to pursue advanced studies in Islamic law, though he attended lectures, as far as we know, only in Damascus and Mecca. Third, he traveled as a devotee of Sufism, the mystical dimension of Islam. He visited a number of cities and Sufi lodges specifically to pay his respects to living scholar-saints or to the tombs of deceased ones, thus sharing in the aura of divine grace associated with them. Fourth, he journeyed to seek employment. In Delhi, he received

generous salaries and honors for serving the Muslim Turkic government as both a judge and a royal mausoleum administrator. For several months he held a judgeship in the Maldiv Islands. We must also accept that his motive for visiting some places, tropical East Africa, for example, was simply that these were parts of the Muslim world he had not yet seen.

According to the scant references to him that appear in other Arabic texts of the fourteenth and fifteenth centuries, he died in 1368 or 1369, after serving in his later years as a judge in an unidentified Moroccan town. A tomb where tradition says he is buried still stands in the heart of Tangier. The Moroccan scholar Abelhadi al-Tazi has recently reported documentary evidence suggesting that the traveler's bones may rest in Anfa, a port town that today lies beneath modern Casablanca.

Ibn Battuta identified himself with the Muslim learned class (*ulama*), and that status, which he displayed in piety, dress, social manners, and religious knowledge, gained him entry to the homes and princely courts of the powerful and rich. We have no evidence, however, that he was an especially accomplished intellectual. When he ended his traveling career in Fez, he wrote the account of his adventures in collaboration with Muhammad Ibn Juzayy (1321–1356 or 1358), a young Moroccan scholar, who had skills Ibn Battuta did not possess to compose the travels in proper literary form.

Formally titled "A Gift to the Observers Concerning the Curiosities of the Cities and the Marvels Encountered in Travels," the *Rihla* circulated in manuscript form among educated North Africans in the fourteenth century and in West Africa, Egypt, and possibly Syria in subsequent centuries. In the mid-nineteenth century, French scholars discovered manuscript copies of the *Rihla* in Algeria and prepared both a printed Arabic text and a French translation. Since then, the account has been translated into English, Spanish, German, Persian, and several other languages. In recent years, Ibn Battuta has become more widely known in Western countries owing to publication of popular articles about him and to his inclusion in most encyclopedias and world history textbooks.



This section of the famous Catalan Atlas, the most important map of the medieval period, shows the Middle East in 1375, a territory Ibn Battuta explored (beginning fifty years earlier) during his long odyssey.

The *Rihla* is of immense documentary value, partly because it illuminates the values, customs, and cosmopolitanism of educated Muslims in the late Mongol era and partly because Ibn Battuta recorded observations of nearly every conceivable facet of life in Muslim and in some measure non-Muslim societies. His subjects of lively and sometimes critical commentary include religion, education, state politics, royal ceremony, law, warfare, gender relations, slavery, trade, agriculture, cuisine, manufacturing, geography, transport, and the achievements and failings of numerous jurists, theologians, monarchs, and governors. The *Rihla* is the only surviving eyewitness account from the fourteenth century of the

Maldivian Islands, Sudanic West Africa, and several other regions.

The book belongs to the genre of literature known as *rihla*, that is, an account of journeys usually centered on a pilgrimage to Mecca. This genre flowered in North Africa and Muslim Spain between the twelfth and fifteenth centuries, and Ibn Battuta's text is the most ambitious representation of it. Scholars agree on the authenticity and reliability of the *Rihla* in general, and independent sources have corroborated many of the traveler's detailed observations. Even so, the itinerary and chronology present numerous inconsistencies and conundrums, and the journeyer's statements are sometimes inaccurate. Parts of the descriptions of

Syria, Iraq, and Arabia are copied, usually without attestation, from at least two other earlier travel accounts, though we cannot be sure how much responsibility for this borrowing might lie with Ibn Juzayy or later copyists. Scholars have also concluded that the accounts of journeys to Bulghar on the upper Volga River, to the city of Sanaa in Yemen, and to northern China are almost certainly fabrications. Moreover, debate continues regarding the trustworthiness of Ibn Battuta's claim to have visited any part of China. Nevertheless, the *Rihla* is a preeminent source for fourteenth-century world history, and because its author reveals so much about his own personality, attitudes, and opinions (far more than does his near contemporary Marco Polo), the narrative continues to captivate modern readers.

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See also Islamic World

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Ibn Khaldun

(1332–1406) ARAB HISTORIAN

Ibn Khaldun (1332–1406) is widely regarded as the greatest Arab-Muslim historian and sociological thinker of the premodern period. His writings have been compared to those of intellectual giants such as Aristotle, Thucydides, Ibn Rushd (Averroes), Machiavelli, and Vico, as well as to world historians of the twentieth century.

While the fame of Ibn Khaldun (or Abu Zayd ‘Abd ar-Rahman ibn Khaldun) is largely a result of his historical and sociological thought, he also led a career as a well-traveled statesman, which included the kind of cross-cultural encounters normally associated with the great premodern travelers Marco Polo (1254–1324) and Ibn Battuta (1304–1368/69).

Ibn Khaldun’s family came to Spain during the Arab conquest of the Iberian Peninsula. During their four centuries in Spain, they served under the Umayyad, Almoravid, and Almohad dynasties, holding high positions in administrative and military affairs. His family left Spain in 1248 and settled in North Africa.

Ibn Khaldun was born in Tunis. His father, himself a scholar, ensured that Ibn Khaldun received a thorough education, rooted in the study of the Qur’an, Arabic grammar, and jurisprudence. Ibn Khaldun took particular interest in his teachers, chronicling their lives and the subjects that they taught. But in 1349, the seventeen-year-old Ibn Khaldun lost his great mentors and parents to the Black Death, the great plague that ravaged Afro-Eurasia in the fourteenth century. Ibn Khaldun later came to recognize the Black Death as a contributing factor to the political instability of Muslim regimes in Spain and North Africa during the fourteenth century.

In 1350 Ibn Khaldun began a chaotic odyssey through North Africa and Muslim Spain. From 1350 to 1375, he served numerous masters as secretary, ambassador, and chamberlain, was imprisoned, and even lived among the Bedouin tribes of Algeria. In 1362 he crossed into Granada, entering into the service of the sultan of Granada as an ambassador to the Christian king of Castille, Pedro the Cruel. Ibn Khaldun’s mission went so well that he was offered a position in Pedro’s service. Although he declined to serve in Christian Castille, Ibn Khaldun’s experience in Christian Spain offers historians an illuminating, non-European view of the Christian expansion into Muslim Spain.

After an intense quarter-century of political life, Ibn Khaldun retired to the castle of Qal’at ibn Salama (near present-day Frenda, Algeria) in 1375. He began writing his massive seven-volume historical work, *Kitabal-‘ibar* (Universal History), which includes his masterpiece, the *Muqaddimah* (Prolegomena to History). The *Kitab al-‘ibar* also contains a definitive history of North Africa as well as a candid autobiography, detailing his numerous political and academic appointments. He continued his scholarship until his departure for a pilgrimage to Mecca in 1382, which led him to a new career in Cairo.

In 1382, Ibn Khaldun met the Mamluk sultan of Egypt, Barquq, who appointed him as a lecturer at al-Azhar University as well as the chief *qadi* (judge) of the Maliki school of Sunni Islamic jurisprudence. In 1400, Ibn Khaldun accompanied the sultan as an emissary to the conqueror Timur (Tamerlane, 1336–1405), who was in the process of laying siege to Damascus. Ibn Khaldun’s encounter with Timur illustrates the decline of Arab power in the face of

It should be known that history is a discipline that has a great number of approaches. • **Ibn Khaldun (1332–1406)**



This Tunisian postage stamp commemorates the historian Ibn Khaldun.

Central Asian invaders, yet it also underscores the unity of an Islamic civilization that connected Muslim Spain, Mamluk Egypt, and Turkic-Mongol Central Asia.

In the *Muqaddimah* Ibn Khaldun explored religious, economic, and geographical determinants of social organization. However, the most important element of his science of social organization is *asabiyyah* (social solidarity). He reasoned that small, rural societies have the strongest social cohesion and the potential to become great empires, while large, urbanized states tend to become corrupted by luxury. This weakening of social solidarity led, he theorized, to

economic and social decay, which ultimately caused societies to fall prey to a stronger conqueror. Thus, Ibn Khaldun's astonishingly modern philosophy of history and social organization articulated universal cycles of cultural change and the rise and fall of civilizations.

Although Ibn Khaldun lived and wrote in the fourteenth century, his approach to history foreshadowed that of twentieth-century world historians such as Arnold Toynbee and Oswald Spengler. Like today's world historians, Ibn Khaldun was concerned with cross-cultural interactions, large-scale comparisons between empires, and patterns of history that affect empires and cultures. Therefore, Ibn Khaldun's work is likely to become more widely recognized as the field of world history continues to grow.

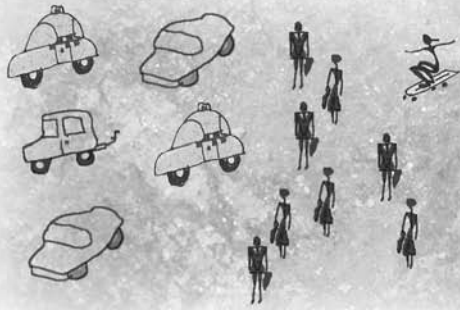
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See also World History, Writing of

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Ice Ages

At least five prolonged ice ages—epochs when glaciers cover entire continents—have occurred throughout the Earth’s 4.6 billion-year history. These five ice ages represented unusual, relatively short episodes in the whole of Earth’s climatic record (spanning a total of 50 to 200 million years, only 1 to 4 percent), and yet they destroyed entire ecosystems, leaving behind tremendous piles of glacial debris.

Ice ages are epochs of time when massive ice sheets and smaller ice masses called glaciers cover extensive areas of the Earth’s surface. During an ice age the planet is cold, dry, and inhospitable. Whereas few forests can be supported, ice-covered areas and deserts are plentiful. Winters are longer and more severe, and ice sheets grow to enormous sizes, accumulating to thicknesses that measure thousands of feet in depth. These ice sheets move slowly from higher elevations to lower regions, driven by gravity and their tremendous weight. During that process, they alter river courses, destroy entire regional ecosystems, flatten landscapes, and, along their margins, deposit great piles of glacial debris.

Evidence of Ice Ages

Proof of ice ages—glaciation over continent-sized regions—comes from several sources. There is the widespread deposition of unique sediments of dirt (called “till”) found under melting glaciers. These sediments contain a wide variety of rock forms that have been accumulated from disparate areas. In addition, glaciation leaves telltale marks in the form of grooved, striated, polished bedrock pavements, faceted stones

in the till, and interspersed layers of gravel containing different rock types. Ice ages also are substantiated by erosional forms believed to have been produced by advancing ice sheets, among them sculptured landscapes, such as glacial uplands or U-shaped valleys.

Such evidence suggests at least five prolonged ice ages: (1) during Precambrian era, 1.7–2.3 billion years ago; (2) during the end of the Proterozoic eon, about 670 million years ago; (3) during the middle of the Paleozoic era, about 420 million years ago; (4) during the Carboniferous period, in the late Paleozoic era, beginning 290 million years ago; and (5) during the Pleistocene epoch of the Quaternary period, beginning 1.7 million years ago. In this most recent era, ice sheets developed in the highlands of North America and Europe and dominated the Northern Hemisphere. Massive ice sheets covered all of present Canada, south of the Great Lakes region, as well as Greenland, Scandinavia, and Russia. Each ice age lasted at least a million years, during which great ice sheets migrated back and forth across a huge paleocontinent (ancient or prehistoric continent). The span of these ice ages totaled 50 to 200 million years, which accounts for only 1 to 4 percent of the Earth’s 4.6 billion-year history. Ice ages thus represent unusual, albeit relatively short, episodes in the Earth’s climatic record.

Theories about Causes of Ice Ages

Although scientists have extensively studied glaciation, no single theory is widely accepted as explaining the causes of ice ages. However, several theories converge into two categories. First are terrestrial theories. Among these, in 1941 the Canadian geologist

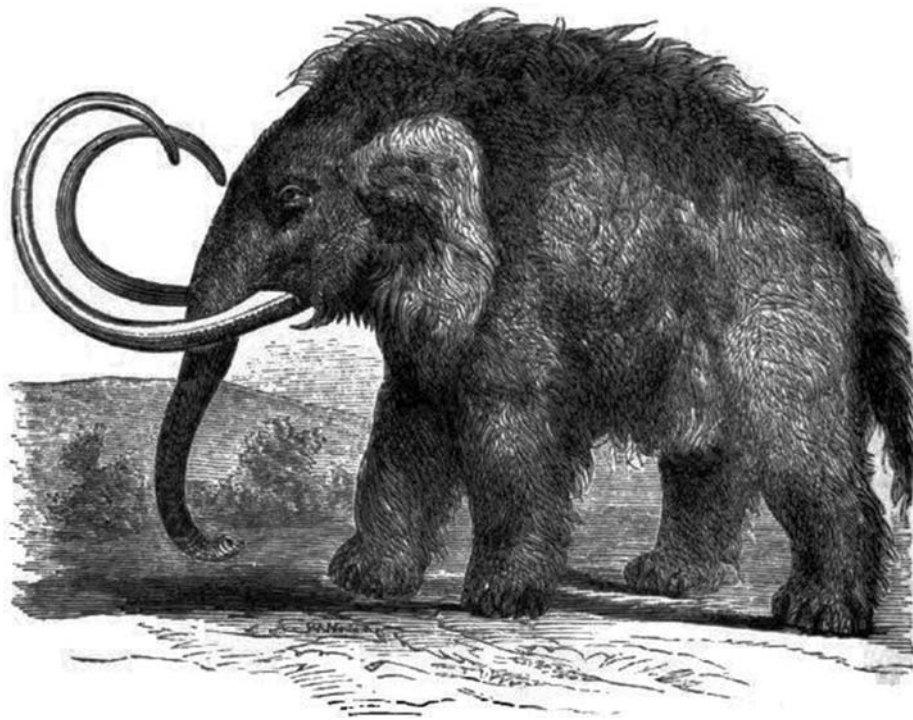


Illustration of a mammoth from *The Natural History of Man* by A. de Quatrefages, published in 1875. The mammoth's woolly coat allowed it to survive the harsh temperatures of the great ice ages.

and explorer A. P. Coleman suggested that change in the elevations of continents provided a natural explanation for an ice age. That is, the uplifting of continental blocks creates increases in the height of land areas by mountains rising or sea levels falling, which cooled the land and produced glacial conditions. A second theory is linked to the changing continental positions associated with plate tectonics. The notion of continental drift, set out by the German geophysicist Alfred Wegener in 1922, proposes that continents sliding around on the globe's surface could be brought into colder climatic conditions, thereby allowing ice sheets to develop, especially because a continent's climate is mainly determined by its latitude and size. A third theory suggests that extensive volcanic activity, which spews out dust and ash into the atmosphere, reflects radiant solar heat back into space, thereby producing cooler temperatures on the Earth's surface. Closely related is the ocean-atmospheric hypothesis. The assumption here is that the only adequate supply of water for massive ice accumulations is the ocean. Because creation of ice sheets on land depends on wind and weather patterns, logic suggests that profound changes between the ocean and the atmosphere could contribute to the onset of ice ages. Another hypothesis was put

forward in 1998 by the American climatologist, Maureen Raymo. She proposed the idea that Earth's cooling climate over the last 40 million years was caused by a reduction in atmospheric carbon dioxide due to enhanced chemical weathering in the mountainous regions of the world, particularly the Himalayas, and that the growth of the Himalayas may, in fact, have triggered the start of the ice ages.

The second category of theories to explain ice ages is extraterrestrial. As early as 1875 the Scottish scientist James Croll proposed that astronomical variations in the Earth's orbit around the sun produced conditions for the onset of ice ages. He believed that disturbances by the moon and sun cause periodic shifts in the Earth's orbit, thereby affecting the distribution of solar heat received by the Earth and climatic patterns on the surface. Less heat produces colder climates.

Croll's theory was modified in 1938 by a Yugoslav scientist, Milutin Milankovitch, in what is today the most popularly accepted theory for climate changes during the Pleistocene epoch. Milankovitch believed that the amount of solar radiation is the most important factor in controlling the Earth's climate and in producing ice ages. The amount of radiation varies, he argued, according to three key factors. (1) The



Earth doesn't rotate perfectly like a wheel about an axis; it spins like a wobbling top. Every twenty-two thousand years, Milankovitch calculated, there is a slight change in its wobble (called "precession of the equinoxes"). (2) Every 100,000 years there is a change in the Earth's orbit about the sun (which he labeled "eccentricity"). The Earth's almost-circular orbit becomes more elliptical, taking the Earth farther from the sun. (3) Finally, Milankovitch discovered that every forty-one thousand years there is a change in the tilt of the Earth's axis, moving either the Northern or Southern Hemisphere farther from the sun (a process known as "obliquity"). These cycles mean that at certain times less sunshine hits the Earth, so there is less melting of snow and ice. Instead of melting, these cold expanses of frozen water grow. The snow and ice last longer and, over many seasons, begin to accumulate. Snow reflects some sunlight back into space, which also contributes to cooling. Temperatures drop, and glaciers begin to advance. These effects are sufficiently substantial to cause cyclical expansion and contraction of the massive ice sheets. By taking climatic effects and solar insulation of these variations and applying them to computer models of ice sheet behavior, scientists have demonstrated that a correlation exists between these cycles and the cyclic growth and decay of Pleistocene ice sheets over the past 600,000 years. The combination of orbital cycles results in

lower summer insulation (exposure to the sun's rays) at fifty-five degrees north latitude. Such cooler summers in high latitudes tend to preserve each winter's snowfall, which over thousands of years leads to snow from successive winters inducing growth in the northern ice sheets, evidentially causing the onset of a new ice age.

The Earth may be currently in an ice age because within each major glaciation ice caps and mountain glaciers are oscillating between extension and retreat. The last retreat concluded approximately ten thousand years ago and probably represents only an oscillation, not a final ending. The recent trend toward global warming, however, has reduced fears of any imminent return of an ice age.

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See also Climate Change

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Imperialism

Although many governments and political bodies have been labeled “empires” throughout world history, the related term *imperialism* today refers to a set of ideological principles whereby one group sets out to impose its belief systems on another. This imposition is most often political but can also be cultural, religious, economic, or even ecological.

At its core the term *imperialism* is defined by power relationships and the ability of one group to assert some form of power or control over another. Historians who examine imperialism tend to study either one aspect of this power or one concrete example, such as a particular empire or the spread of a particular system. Most commonly, imperialism refers to the particular type of political organization that emerged during the nineteenth century, the “New Imperialism” by which Europe established empires in Africa, Asia, and Oceania (islands of the central and south Pacific).

The major impact of imperialism was the spread of ideas among different peoples, particularly in highly cosmopolitan empires. Empires operate on two key principles: acquisition of wealth, whether in money or in other resources, and the spread of belief systems to other peoples in order to establish unity under one imperial structure. This structure comes with an attendant worldview on religious, social, cultural, and political matters that subjects of the empire are expected to accept or at least accommodate. Internal conflicts within empires usually come as a result of resistance to the imperial worldview by subject peoples. Modern empires built upon these foundations and added more sophisticated bureaucratic structures and

explicit drives for religious conversion, particularly Islam and Christianity. Improved means of transportation, particularly sailing and later steam vessels, and the discovery of the New World added opportunities for overseas expansion and more diverse empires.

Origins (Sixteenth–Eighteenth Centuries)

The discovery of the New World opened up new paths for exploitation on many levels. After the initial pillage of the Mexica (Aztec) and Inca empires by the Spanish conquistadors, silver mines in Bolivia and Mexico gave the Spanish Empire tremendous revenue. This revenue helped finance the wars of the Habsburg (a European ruling house) against European rivals such as the Dutch, English, and Ottoman Turks. Spain was ultimately overextended by these wars, and the Habsburg emperors found such a large empire difficult to manage effectively. Spain’s rivals also set about exploiting the New World and pushed into the Indian Ocean and the Pacific as well. The biological consequences of the conquest were much more profound in the long run than was silver. Old World diseases decimated up to 90 percent of the native population, leading to the importation of African slaves to labor on the new sugar, cotton, and tobacco plantations. New crops, such as maize and the potato, were exported to the Old World, allowing for diversified agriculture and large population growth. This package of crops would also allow Europeans to establish themselves in areas with similar climates, opening up areas of settlement in the Americas, South Africa, and Australia. The increase in population and resources promoted increased

The British statesman William Pitt and Napoleon carve up the world in this caricature by James Gillray, circa 1800. The British Library.



trade as demand went up and new opportunities for trade were opened.

Increasingly, European wars took on a global dimension as conflicts in Europe were fought on the high seas around the world and by small groups of European soldiers and their native proxies in locations as far apart as Canada and India, with the Seven Years' War (1756–1763) being the best example. Settlements were initially seen as less important than trading posts, and they were certainly less lucrative. British, French, and Dutch East India Companies were established and were given extraordinary powers to administer territory, raise armies and fleets, and wage wars to promote and manage trade.

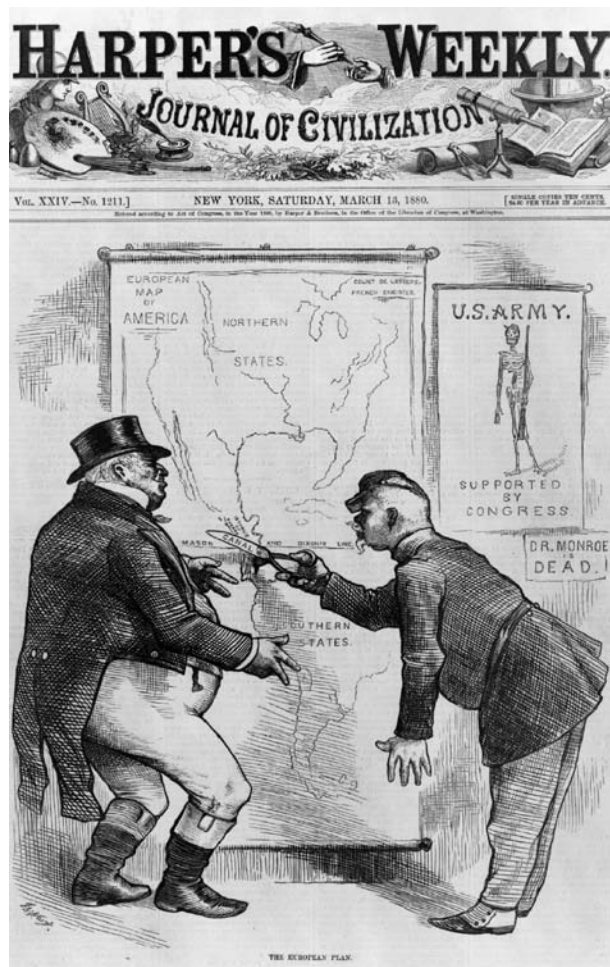
Europeans settled areas that had a climate similar to Europe's and that had few natives to put up resistance (largely due to diseases introduced by Europeans). Such areas were largely seen as a useful outlet for excess or discontented populations in Europe and were given a large degree of autonomy in exchange for sending back resources for the home country. This practice was referred to as "mercantilism" and became a source of discontent in colonies as their economies developed. Until the American Revolution, the British were the major success story of the eighteenth century, supplanting the Dutch as the dominant naval power and winning a series of wars. These victories

gave Britain a dominant position in the Caribbean and North America and made Britain the dominant European power in India.

British involvement in India would be crucial for the development of imperialism in both theory and practice during the nineteenth and twentieth centuries. Previously European empires had been trade oriented, establishing trading posts to facilitate exchange, or colonial, taking advantage of favorable circumstances to transplant populations and essentially replicate themselves abroad. The New Imperialism was a shift in philosophy whereby European powers attempted to impose their political, economic, and cultural systems upon subject peoples.

Britain and India

Britain had become the dominant power in India through a series of wars with both local powers and the French. The British East India Company (EIC) had been chartered to solidify the British trade position in Asia, particularly in the tea trade. Increasingly as a result of military conquests and political maneuvers, the EIC became a governing body over large sections of India, particularly in Bengal, by the end of the eighteenth century. The mission of the company was heavily questioned in the aftermath of corruption scandals that attracted parliamentary investigation.



In 1880 cartoonist Thomas Nast targeted France's objection to American and British imperialist ambitions to control the Panama Canal.

The British government was also under pressure to allow more missionary activity, something resisted by the EIC for fear that such activity would anger the Hindu and Muslim populations in India.

Through the first half of the nineteenth century the EIC expanded its political control over India through conquest and legal seizure of princely states when the heirs died without a successor. By the mid-1800s the British were in control of almost all of India, through either direct rule or "indirect rule" whereby princes retained their states, but the company directed foreign and trade policies. This gradual conquest led to questions over the purpose of British involvement in India. People raised moral questions as the missionary movement wanted to make more attempts at conversion, and some people objected to the increasing exportation of opium grown in India to

China, an exportation that led to the Anglo-Chinese First Opium War (1839–1842). This war dramatically demonstrated the technological superiority of Europeans and helped lead to an important strain of thought in modern imperialism: that technological superiority implies cultural and eventually racial superiority.

The outbreak of the Great Mutiny in India in 1857 led people to reassess the goals of imperialism. The EIC was removed as the governing power, and India was placed under Crown rule. With trade no longer the top priority, the concept of a civilizing mission took over, whereby the British would bring the benefits of their technology, government, and culture to India while still exploiting India's resources. This shift was crucial for the New Imperialism because now the "civilizing" aspects of imperialism would be the prime justification for conquest.

The Scramble for Africa

The slave trade led Europeans to hold a number of concepts about Africans. The first of these concepts was that Africans were an inferior race, thus justifying the practice of slavery. The second was that Africa was an uncivilized "dark continent" waiting for exploration and exploitation. The primary obstacle to greater European penetration of Africa was the tropical disease belt that took a heavy toll on European settlers, traders, and missionaries. Advances in medicine, particularly the discovery of quinine, which gave a resistance to malaria, allowed for greater European activity in central Africa during the 1860s. Dr. David Livingstone was perhaps the most important of the new explorers. Livingstone was a Scottish missionary and explorer, and his accounts of Africa and the search for him conducted by another explorer, Henry Morton Stanley of England, captured the public imagination. Lurid accounts of the slave trade and living conditions in Africa increased calls for intervention.

Although European powers had previously established colonies in north and south Africa, the late nineteenth century brought a remarkably swift conquest of the rest of Africa. The Berlin Conference of

1884–1885 set the precedent for the immanent division of Africa among European powers, with no input from the natives, creating arbitrary divisions with no account for tribal and ethnic groupings. Europeans justified their rule on the basis of the civilizing mission, ending the slave trade and bringing Europe's superior way of life to Africa. The reality was much different because the conquest was marked by significant brutality and exploitation. Natural resources were a major factor as gold, diamonds, ivory, and rubber were extracted, frequently with forced native labor. Resistance was largely futile, although the Italians failed to conquer Ethiopia at the turn of the century (although they would conquer Ethiopia under Fascist leader Benito Mussolini in 1936), and Britain suffered early setbacks in South Africa against the Zulu and the Boers and in the Sudan against the Mahdists.

Ideologies of Imperialism

The Enlightenment (a philosophic movement of the eighteenth century marked by a rejection of traditional social, religious, and political ideas and an emphasis on rationalism) had given the minds of Europe a drive to order things by the use of reason and deduction. Scientific advancement and orderly societies were the measuring posts by which the Europeans ordered the world. Other peoples were encountered and measured by these measuring posts, and imperialism was justified when peoples came up wanting. Bringing the benefits of progress, science, and reason to the benighted people of the Earth was the positive drive of imperialism. In reality, this drive became more of a drive for “God, gold, and glory” at the expense of the people who were told that all was done for their benefit. The economic benefits of imperialism were mixed, with some colonies that had extensive natural resources yielding vast profits but others being financial drains on the home country. Critics of imperialism, such as the English economist John Hobson, saw colonies as an unnecessary financial burden that hindered free trade, whereas Russian Communist leader Vladimir Ilich Lenin saw colonies as the last stage of capitalism before the inevitable worldwide

proletarian revolution that the German political philosopher Karl Marx had predicted. Imperialism was therefore to some extent irrational because informal empires of economic dominance were more logical from a business standpoint than the expense of direct military and political control.

But business and scientific curiosity blended with a romantic sense of adventure, and the general public who followed the accounts of Stanley and Livingstone avidly consumed serial stories and novels with imperial themes. The English writers Rudyard Kipling, H. Rider Haggard, and their counterparts outside Britain gave readers an exciting version of the imperial mission: that even if most people could not take part, readers could feel part of a greater project. Kipling's poem “The White Man's Burden” was aimed at a U.S. audience, calling on people to “send forth the best ye breed” to govern Filipinos “half-devil and half-child” (Kipling 1899). Adventure appealed to men who were increasingly desk bound and out of touch with nature after the emergence of the white-collar middle class after the Industrial Revolution. Imperialism was a chance to reorder the world in a way that made sense, creating a world in which men were active and women were subordinated. However, women also found opportunities to fight for equality, using the treatment of women by colonized peoples as a way of equating women's rights with greater civilization.

The English naturalist Charles Darwin's ideas lent credence to philosophies of competitive social hierarchies that weed out the weak and reward the strong. Social Darwinism justified imperialism by twisting Darwin's theories of adaptation and natural selection to human societies. By this logic European nation-states competed with one another for colonies, and subject peoples were the victims of natural selection, not fit to govern themselves. Some of the more horrific brutalities inflicted in Africa were justified by this logic, leading to massacres and forced labor on a massive scale. Nationalism and race were increasingly blended, and the idea of races as Darwinian species competing with one another took hold, driving Europe to more aggressive militarism before World War I.



The bare-breasted woman in this drawing, harassed and restrained by British statesmen, represents America; the female figure of Britannia stands by, shielding her face with her hand. From *London Magazine* (May 1774).

Anticolonial Movements

Although resistance to imperialism had existed from the beginning, a more articulate version emerged during the twentieth century. People had fought wars against imperialism during the late nineteenth century, but European military superiority made these wars largely futile gestures. Millennial movements (apocalyptic antimodernist religious movements) were in part a reaction to this superiority, with visions of religious faith triumphing over technology, guiding movements among the Sioux in the United States, the Boxers in China, and the Mahdi's jihad (holy war) in the Sudan. Although these movements were failures in the short term, they did lead to moral questions about the imperial mission, and the vast number of natives massacred by European firepower was soon mirrored in the mud of Flanders in northern Europe as a generation of young European men died in the trenches of World War I.

Large numbers of colonial native troops were used by the Allies in World War I, with many serving in France. The horror of war and the squalid conditions that the troops served in led many people to question the supposed superiority of Western society. Movements such as the Indian National Congress had emerged before the war but now took on new urgency. The Indian nationalist Mohandas Gandhi's campaign for Indian self-rule, Hind Suaraj, was based on the perception that although Britain may claim

noble goals, in essence racism defeats these goals. Gandhi's genius lay in passive resistance and the realization that the West's own values could be turned against imperialism. In India and elsewhere claims to self-rule, freedom of expression, and racial equality became stronger as the ideals that Europeans professed took hold.

If World War I rattled the structure of imperialism, World War II was a finishing blow. A war fought against the ultimate form of racial nationalism in the name of freedom led to the overwhelming desire for independence. India was the first to achieve independence, although with traumatic consequences for those people caught on the wrong side in the division between Hindu India and Muslim Pakistan. Similar results and consequences came with decolonization in other parts of the world as tribal, ethnic, and religious tensions reemerged amid frequently bloody struggles for independence against colonial powers. These struggles merged with the Cold War as Communism championed itself as a liberator from the capitalist structure of imperialism. The arbitrary dividing lines of colonies fed civil and national wars in Africa and Asia and led to a sense of bitterness and resentment that is still felt today.

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See also Colonialism; Empire; Postcolonial Analysis

I am strongly in favour of using poisoned gas against uncivilized tribes. The moral effect should be good . . . and it would spread a lively terror . . . • **Winston Churchill (1874–1965)**

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Imperialism and Gender

Attitudes about “appropriate” sexual behaviors of both men and women were central to imperial endeavors beginning in the late 1800s; ideals such as these allowed colonizers to categorize and divide indigenous peoples into distinct and knowable groups. Colonial encounters between rulers and ruled often changed local gender relationships and ideals in ways that deeply affected culture in the colonies and in imperial metropolises.

From the late nineteenth century until the end of World War II, all of the most powerful nations on Earth (along with others that aspired to great power) pursued the strategy of imperialism in an attempt to achieve national political and economic goals. Although imperialism was not new (Great Britain and Spain are notable examples of a countries whose pursuit of empire began centuries earlier), this period is historically unique because so many nations became involved in imperial ventures and because the territories they claimed were so extensive. Between 1885 and 1914 alone European countries added 2.8 billion hectares to their imperial territories, the United States and Japan joined European countries in the pursuit of empire, nearly all of Africa came under colonial domination, and the British Empire grew to include one-quarter of the world’s population.

Societies and systems established by imperial nations varied greatly across time and space. Some became settler colonies, where colonizers would establish large, permanent communities. Others were created because of the resources that could be extracted

or because of their strategic location and were ruled by small numbers of administrators backed by military force, or even by indigenous groups overseen by colonial administrators. Whatever form imperial societies took, they all profoundly affected both rulers and ruled economically, socially, culturally, and politically. Moreover, during the last two decades scholars have begun to understand that imperial systems around the world were maintained and legitimized, at least in part, through the use of language and policies based on gender ideals. These ideals included beliefs about the appropriate behaviors and sexualities of both men and women and were frequently used to mark distinctions between colonizing and indigenous cultures. They were also frequently inseparable from beliefs and attitudes about racial difference and were often used to shore up notions about the inherent inequality of colonized peoples. In addition, colonial encounters between rulers and ruled—varied though they were—changed local gender relationships and ideals in ways that deeply affected culture in the colonies as well as in imperial metropolises. These changes were not uniform in all colonies, or even within the various “national” empires. Rather, they depended on existing indigenous cultures, the presence or absence of natural resources, the presence or absence of colonial settlers, the degree of incorporation into the global economy, access to land, and many other factors. When examined from a global perspective, then, the relationship between imperialism and gender emerges as a complex phenomenon. At the same time, we can also detect several broad similarities that elucidate global connections and patterns.

Gender as a Means of Marking Hierarchy

Beliefs about gender, sexuality, and gender roles were central to imperial endeavors around the world because such beliefs provided legitimation for preserving distinctions between rulers and the ruled and because they helped colonizers categorize—and hence divide—indigenous peoples into distinct and knowable groups. Although the precise form that such beliefs took varied across time and space, the need to clearly mark the boundaries between colonizer and colonized through language and practices associated with gender and gender difference was widely shared across many imperial systems.

Nearly every imperial system sought to justify the unequal distribution of power between rulers and ruled—and even the existence of colonies themselves—by concerning itself with the sexual behaviors, appetites, and attitudes of colonized men and women. One recurring theme in French Indochina, British India, the Dutch East Indies, and British South Africa—to name only a few—was the idea that white women were in constant danger from the voracious and perverse sexual appetites of colonized men. The fear of rape, and the need to protect white women from it, hence came to justify the strict separation between colonizers and colonized as well as the careful control of both colonized men and white women. As a result, white women often found their lives in colonies paradoxically quite comfortable (because of servants, privilege, and leisure time) as well as quite restricted. Colonized men, for their part, were routinely excluded from positions in which they might have even a remote chance of exercising power over white women. They also found themselves at risk of severe punishment if they transgressed the boundary between themselves and colonizing women. Perhaps not surprisingly, rhetoric about the need to control colonized men and to protect white women grew more intense during times of high colonial tension.

One example of the ways in which gender could be employed to maintain distinctions between rulers and ruled was the 1883–1884 Ilbert Bill controversy in British India. The bill had been designed to concede a small amount of power to Indian civil servants by allowing Indian judges jurisdiction over some European cases. However, Britons in India vehemently opposed even the slightest suggestion that Indians might be able to pronounce judgment over Europeans and openly attacked the bill on the grounds that it threatened the safety of white women. Although the bill itself said nothing about women, opponents argued that it opened the door for Indian civil servants—whose ultimate fantasy, they asserted, was the possession of a white woman—to use their new power to take sexual advantage of British women. Moreover, opponents claimed that Indian men could not be expected to treat British women with decency because they were said to treat their own women so poorly. In the end opposition to the bill among the British community in India was so strong that it had to be dropped. Indian men had been kept firmly in a subordinate role through rhetorical claims about the gendered consequences of conceding power to colonized men.

Anxieties about racial mixing—miscegenation—also echoed widely across imperial systems during the last half of the nineteenth century, and here again beliefs about gender and sexuality played critical roles in maintaining the separation between rulers and ruled. Most imperial systems were predicated on the belief that colonizing men needed sex in order to be satisfied. The problem, however, was a shortage of colonizing women in many colonial societies—even those that encouraged settler families. As a result, colonizing men frequently established sexual relations with indigenous women through prostitution, concubinage, or, less commonly, marriage. Such relationships were rarely based on true partnership: even when colonized women entered into them of their own choice (abundant evidence suggests that the use of force and manipulation was quite common), they



enjoyed few rights or privileges and could be discarded at will. Moreover, these sexual relationships produced a whole set of new problems. Chief among these was how to maintain distinctions between colonizers and colonized given the existence of such intimate relationships. Even more problematic was how to classify and treat the mixed-race children who resulted from these relationships.

In the East Indies Dutch efforts to confront these issues illustrate both the centrality of sex management to imperial projects as well as the ways state policies about the regulation of sex could change over time. Prior to the twentieth century the Dutch East Indies Company sharply restricted the immigration of Dutch women to the East Indies. The company reasoned that Dutch men would be more likely to remain in the East Indies if they established long-term relationships with indigenous women. Moreover, indigenous women were less expensive to maintain than European women and could be expected to perform domestic labor in addition to their sexual functions. For these reasons the company advocated that Dutch men keep concubines—women who shared all of the duties of wives without the legal protections and entitlements of marriage. By the 1880s concubinage was the most common domestic arrangement for European men in the Indies, a situation that produced tens of thousands of mixed-race children. Yet, by the turn of the twentieth century, the existence of this large mixed-race population had begun to worry the Dutch East Indies Company and the Dutch government because it threatened to blur the divide between the colonizers and the colonized. To which group did these children belong? Were they Dutch or Indonesian? Would they support Dutch rule, or would they try to subvert it? As part of these worries, Dutch officials increasingly began to argue that Indonesian concubines had neither the skills nor the morals to raise their mixed-race children to be adults worthy of Dutch citizenship. As a result, during the early twentieth century the Dutch government reversed earlier policy by seeking to ban the practice of concubinage and to encourage instead the immigration of Dutch women to the Indies. These women, the

government now believed, would provide a civilizing influence on Dutch men and would have the cultural skills to raise their children to be proper Dutch citizens. For European men who could not afford Dutch wives, the government now encouraged prostitution as a means of side-stepping long-term, family-style liaisons with indigenous women. In both the pre- and post-twentieth-century East Indies, government concerns with the sexuality and sexual behaviors of both men and women, colonizers and colonized, highlight the central importance of sex management—and the gender relationships such management depended upon—to the imperial state.

Beliefs about gender also contributed to imperial policies of divide and rule—that is, policies that emphasized differences between subgroups of colonized peoples as a way of minimizing unified opposition to imperial rule. In places as far-flung as India, Indonesia, South Africa, and French West Africa, to mention only a few, such policies encouraged preferential treatment of certain groups, which tended to pit these groups against less-preferred groups. Moreover, colonizing powers often bestowed favor on groups who seemed to embody colonizers' own notions of ideal masculinity. In French Algeria, for example, French colonial administrators articulated stark divisions between the two major ethnic groups in the region: Kabyles and Arabs. Kabyles, the administrators argued, were superior to Arabs in nearly every way. Kabyles were sedentary rather than nomadic; they lived in mountains rather than the plains; they spoke an Aryan language rather than a Semitic one; and they were secular rather than religious. Gender ideals were also central to Kabyle superiority. The French, for instance, perceived Kabyle men as tall and athletic and likened their bodies to French ideals of the male physique. Kabyles were also said to be brave and fierce warriors who had proven themselves worthy foes of the French. Finally, despite their ferocity, Kabyles were said to treat their women with respect, which again resonated with French notions about themselves. Arabs, on the other hand, were perceived as physically small, lazy, slovenly, and cowardly people who brutally oppressed their women.

The power I exert on the court depends on the power of my arguments, not on my gender. • Sandra Day O'Connor (b. 1930)

These perceptions of gendered difference were neither trivial nor matters of simple representation. Rather, they encouraged preferential treatment for Kabyles, imposed a strict division between two indigenous groups, and deeply influenced French-Arab interactions in Algeria. Indeed, the language of gender difference in imperial situations served not only to maintain distinctions between rulers and ruled, but also to maintain distinctions between different groups of colonized people.

Gender and the Colonial Encounter

Colonial encounters between rulers and ruled had profound social, cultural, political, and economic effects all over the world. In terms of gender, such encounters frequently disrupted local ideologies, relations, and traditions and often led to changes in all three. In virtually every colonial encounter, the gender ideals of the colonizing powers helped to shape colonial practice, law, and culture. However, the way such ideals were translated into policy depended upon the response of colonized peoples, and thus the effect of such ideals was neither uniform nor predictable. Moreover, the disruptive effects of the colonial encounter on gender ideals were not a one-way street because they influenced gender ideals in imperial home countries as well.

Nineteenth-century Hawaii illustrates the ways colonial gender ideals could interact with indigenous gender ideals in unexpected ways. Prior to contact with westerners during the eighteenth century, Hawaiian culture had imposed sexual separation between men and women and had mandated that women follow certain eating taboos. In other respects, however, Hawaiian women played important social, economic, political, and spiritual roles and maintained a large degree of personal autonomy. As Western—especially U.S.—influence increased in Hawaii during the nineteenth century, Hawaiian women were criticized as being sexually immoral, were consistently written out of U.S.-dominated politics, and were increasingly defined as legally subordinate to Hawaiian and U.S. men. Thus, as a result of U.S.

intervention into Hawaiian society, Hawaiian women's legal and social positions deteriorated. Yet, these same interventions also led to an improvement in Hawaiian women's position as landholders during the last half of the nineteenth century. This unexpected improvement was the result of the Great Mahele of 1848, when the Hawaiian government—under duress by U.S. interests—divided Hawaiian land into salable pieces. The overall result for Hawaiians in general was massive dispossession from the land. For Hawaiian women, however, the results were much more ambiguous because the number of women who inherited land in the post-Great Mahele period dramatically increased. In part this increase was a result of indigenous choices and beliefs about women as effective guardians of Hawaiian land. The net effect was the preservation of Hawaiian women's economic and social importance even as their legal status diminished as a result of discriminatory U.S. policies.

Further cases illustrating the interaction of colonial and indigenous gender ideals abound in colonial Africa. In northern Ghana, for example, the implementation of the British judicial system caused indigenous women's legal status to deteriorate. In particular, colonial rule sought to introduce and enforce the notion that wives were the property of their husbands—a notion that, although foreign to Ghanaian gender ideals, allowed men to claim increasing legal control of their wives. In colonial Tanganyika European authorities instituted policies—such as taxation and the conversion of cattle sales to cash—that increasingly defined Masai men as heads of households and allowed them privileged access to the political domain. Masai women, who had long played vital economic and social roles within their communities, were thus increasingly marginalized by colonial policies that clearly favored men as political and economic actors. At the same time African women were not merely passive victims of a patriarchal partnership between colonizers and indigenous males. Rather, African women in many colonial states manipulated colonial court systems for their own benefit, ventured into independent economic enterprises, and moved into new occupations—as

teachers or midwives—opened up to them by the colonial encounter.

Colonial encounters could also shape gender relations in imperial home countries. In Britain imperialism informed the gender identities of both women and men and often provided the context within which claims about appropriate gender roles were made. A case in point was the British feminist movement, which developed and grew during the last half of the nineteenth century—and thus coincided with the massive expansion of the British Empire. British feminists advocated equal legal rights with British men, but they justified their claims to equality by arguing for the need to represent and civilize colonized—especially Indian—women. Indeed, feminists argued that the oppressed condition of Indian women necessitated their own political participation so they could utilize their superior moral authority to “uplift” their Indian “sisters.” In this context British feminists’ sense of themselves as women depended heavily on their perception of gender relations in the wider imperial world.

Gender and the Nationalist Response to Imperialism

Given the centrality of gender ideologies to imperial projects around the world, we should not be surprised that they were similarly central to a variety of nationalist responses to imperialism. Yet, gendered responses to imperialism did not follow set patterns across time or space and varied widely in relation to both the colonial power and local culture. One pattern that did emerge in places as diverse as post-1945 India and Indonesia, 1960s and 1970s Zimbabwe, and 1950s and 1960s Algeria was the formulation of an aggressive, hypermasculine nationalist rhetoric. Where this pattern emerged, colonized women sometimes became targets of nationalist violence. In other cases they were idealized and made to stand as symbols of purity and tradition. Both strategies tended to marginalize women’s roles in nationalist struggles and tended to complicate postimperial gender relations. A second, paradoxical, pattern was the active participation of



Eugene Delacroix, *Greece Expiring on the Ruins of Missolonghi* (1826). Oil on canvas. Western artists traditionally cast women as allegorical personifications of a country or a cause. Musée des Beaux-Arts (Bordeaux).

women in most nationalist movements all over the world. Indeed, women from French Indochina to Jamaica to Angola served in critical roles as messengers, providers, and even as soldiers.

The case of Zimbabwe in Africa illustrates the complex ways gender could help constitute the language and practices of anti-imperial nationalist movements. Under colonial rule Zimbabwean men felt increasingly emasculated as they lost status to white Europeans, were treated as children, and were unable to protect Zimbabwean women from the sexual advances of colonizing men. Emasculation took more material forms as well because colonial rule had made it progressively more difficult for Zimbabwean men to achieve those goals that were thought to mark ideal masculinity—including especially taking a wife, buying land, and providing for a family. As a result,

Zimbabwean nationalism during the 1960s and 1970s took on an aggressively masculine posture (the two main parties styled themselves after the cock and the bull) that emphasized the importance of being manly, virile, and heterosexual. Incidents of violence against women increased dramatically during this period, evidenced by a spike in the number of rapes and attempted rapes. At the same time, women's actual participation in the Zimbabwean nationalist movement was crucial to its eventual success. They provided information to nationalist guerrillas, gave food and shelter to nationalist fighters, and, after 1975, were trained as guerrilla fighters themselves. Yet, in spite of such active women's participation, Zimbabwean independence in 1980 did not lead to equality for Zimbabwean women. Instead, like many other states that emerged in the wake of successful anti-imperial movements, patriarchy was simply reconfigured in new ways—boosted and encouraged by the aggressively masculine ways that many colonized men responded to their colonial overlords.

The Indonesian nationalist movement during the immediate post–World War II period shared the hypermasculine tone of the Zimbabwean nationalist movement. As in Zimbabwe, Indonesian men had long endured denigration by Dutch colonizers, who consistently referred to Indonesian—and especially Javanese—men as weak and effeminate. Moreover, Dutch men had gained privileged access to Indonesian women. To combat this sense of emasculation, Indonesian nationalists in the anticolonial war of 1945–1949 consciously adopted an aggressively masculine ethos by celebrating toughness, virility, and militarism and broke with established (Javanese) cultural traditions of courtesy and gentleness. In this revolutionary movement, women and female sexuality were seen as dangerous and even traitorous. Women's colonial roles as concubines (*nyais*) had made them suspect as potential spies, and weakness associated with women was viewed as a potential drain on, and distraction from, the cause of revolution. Indeed, because so many Indonesian nationalists felt it necessary to fight European imperialism with a new, hypermasculine gender identity, the movement turned

against its female supporters in a bid to create a new sense of masculinity on the European model.

Implications

The relationship between global imperialism and gender was complex. It was not uniform across space and time, and its precise form varied widely according to local conditions, the colonial culture being imposed, and the specific issues involved. Moreover, the consequences of gender ideals in imperial situations often worked themselves out in unintended, ambiguous, and unexpected ways. What is clear, however, is that beliefs about gender were central to imperial projects around the world and that they had real, observable effects in the material world as well as in the realm of representation, discourse, and psychology. In addition, gendered responses to imperial control played a role in shaping gender relations in many newly independent nations, with effects that can still be felt in the present.

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See also Colonialism; Imperialism; Women's and Gender History

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Inca Empire

About a hundred years before the Spanish conquistador Francisco Pizarro took the capital of Cuzco in 1533, the Inca ruled a vast empire that rivaled only China's. Through diplomacy and force, the Incas conquered diverse ethnic groups with different beliefs and social structures. During the first fifty years of Spanish rule, epidemics, civil wars, and forced labor wiped out over half of the population.

By the middle of the fifteenth century CE, the Inca Empire was the largest pre-Hispanic state ever known in the Americas. The empire covered almost a million square kilometers and stretched over the Andes for more than 4,000 kilometers. Running in a band from what is now the northern border of Ecuador to the Chilean capital of Santiago, the realm encompassed coastal deserts, rugged mountains, and verdant forests. From the imperial capital of Cuzco (located southeast of present-day Lima, Peru), the emperor, known as the Sapa Inca (Unique Inca), held sway over 10 million subjects from myriad ethnic groups that spoke different languages, followed different subsistence strategies, supported different political structures, and worshipped different gods.

The Incas called their empire Tawantinsuyu, “the land of the inextricably linked four quarters.” The four quarters, Collasuyo, Antisuyo, Cuntisuyo, and Chinchasuyo, were political provinces defined by imaginary lines emanating from the capital. The name Tawantinsuyu reflected more a desire than a reality—the union of these quarters, and the people that lived within them, remained tenuous throughout the state's short life span. When the empire was

about one hundred years old, a band of 168 Spanish adventurers led by Francisco Pizarro (c. 1475–1541) helped bring an end to Tawantinsuyu in 1533. Since there was no indigenous system of writing in the Andes, our understanding of the empire is gleaned from archaeology, early Spanish documents, and a handful of native accounts. These sources often disagree, and there remain many gaps in our understanding of Inca life.

The Rise and Fall of an Empire

According to their oral histories, the Inca civilization began when four brothers and four sisters emerged from a cave at the site of Pacariqtambo (The Inn of Dawn) near Cuzco. The siblings, led by Manco Capac and his sister/wife Mama Oqlla, went on a quest to find a place to settle. At the end of this search, Manco Capac founded Cuzco and became the first Inca king. The Incas were just one of many small, warring, ethnic groups that populated the mountains of central Peru until the beginning decades of the fifteenth century. At this time, the eighth ruler, Viracocha Inca, was preparing to give the throne to one of his sons. Before a transfer of power could occur, a rival group, the Chancas, invaded and surrounded the village of Cuzco.

Viracocha Inca and his heir fled the city, and another son, Cusi Inca Yupanqui, was left to defend Cuzco against overwhelming odds. As he and the forces under his command awaited certain death at the hands of the Chanca, Cusi Inca Yupanqui had a vision. The creator god told him that if he spread the true religion, he would be a great ruler and conqueror. Inspired by his vision, Cusi Inca Yupanqui broke the siege and



This eighteenth-century engraving shows Francisco Pizarro capturing the Inca leader Atahualpa in 1532.

then went on to rout the Chanca. He was crowned ruler and took on the name of Pachakuti—"Cataclysm" or "He Who Remakes the World." Over the space of fifty years, Pachakuti (reigned 1438–1471) and his son Tupac Yupanqui (reigned 1471–1493) conquered almost all of what would become the Inca Empire. The remaining portions of the empire, Ecuador and the chiefdom of Chachapoyas in northern Peru, were captured by the succeeding king, Huayna Capac (reigned 1493–1526).

The Incas legitimized their expansion as a means to spread the true religion. The true religion entailed two things—reshuffling existing gods and practices to fit within a "proper" imperial pantheon and the placing of the Inca sun god, Inti, at the second position in that hierarchy (Viracocha, the creator god, held the highest position). As long as a conquered group agreed to both acquiesce to the god's position in this hierarchy and worship Inti, local religions could remain intact. In this way, the Inca were able to fulfill their divine mandate for expansion without seriously challenging local beliefs.

The Incas conquered through a mixture of diplomacy and force. Resisting the empire often had terrible consequences; after defeating the Collas of the Lake Titicaca Basin, for example, the Sapa Inca destroyed many villages, killed many of the inhabitants, and cut off the heads of all of the Colla lords. Those that acquiesced to Inca rule, however, were offered sumptuous gifts and given a privileged position in the new imperial hierarchy.

By the end of Huayna Capac's reign, the strain of keeping the massive empire together was beginning to show. The Sapa Inca was faced with unrest along both the northern and southern frontiers of the empire. Rebellions within the realm, although a problem throughout the empire's existence, may have become more frequent. The groups that populated the semitropical forests along much of the regime's eastern border were nuisances that proved impossible to defeat for a number of reasons. They were small, mobile, and politically acephalous. Inca military tactics did not work well in tropical forests, and tropical peoples often used guerrilla tactics and did not mass their troops. There were the risks of disease, especially Chagas disease, a parasitic infection. There was also little of value obtained in the Inca's expeditions into the eastern lowlands. The exotic animals, honey, feathers, and a bit of gold that they captured were not worth the effort. Huayna Capac's swift death, by an epidemic of smallpox that preceded the Spanish invaders, accelerated civil unrest and caused a war of succession between his two sons, Huascar and Atahualpa (c.1502–1533). Atahualpa finally defeated his brother, but this event was overshadowed a few days later by Atahualpa's capture on 16 November 1532 by Pizarro. By the following November, Atahualpa and Huascar were dead and the Spaniards controlled Cuzco. In 1572, the last vestiges of Inca resistance ended with the capture of the jungle redoubt of Vilcabamba.

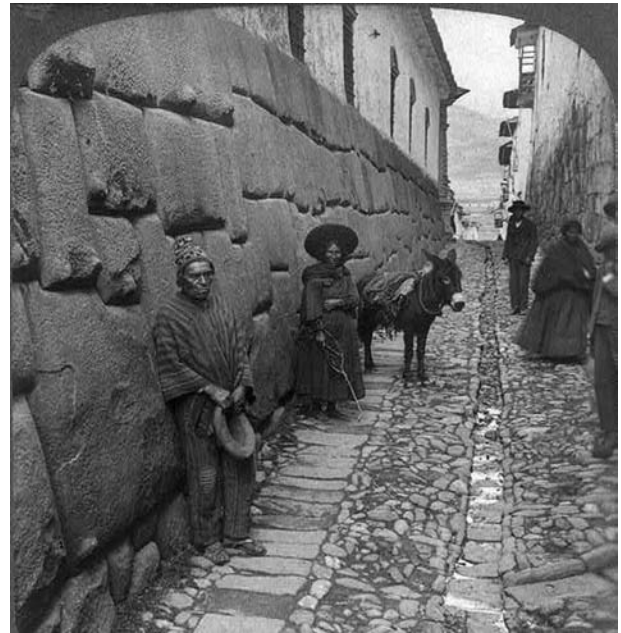
At the time of the Inca conquest, it appears that the empire was overextended. By the reign of Huayna Capac, the pace of imperial expansion had significantly slowed and the emperor spent much of his time quelling rebellions in different parts of the empire. This

strain in keeping the empire together, as mentioned above, increased with the wars of succession between Huascar and Atahualpa. Huascar was the designated successor to Huayna Capac and was supported by the royal lineages in Cuzco. Atahualpa, who controlled the bulk of the seasoned army in Quito, at first acknowledged Huascar as the rightful heir but refused to visit his half-brother (different mothers) in Cuzco. Huascar suspected treason (perhaps rightfully so, it does appear that Atahualpa was making plans to stake his claim to the throne) and began the war of succession by sending an immense but undisciplined force in a failed attempt to capture Quito. For the next six years, there were a number of battles and diplomatic overtures between the forces of the brothers with little concrete results. Finally, Huascar was captured in battle when a small contingent of soldiers led the emperor into a trap. Atahualpa was in the midst of his triumphant march to take over Cuzco when Pizarro captured him.

While the Inca account of the later years of the empire may be largely accurate, archaeological evidence contradicts aspects of their rise to power. For example, research suggests that the Incas were important regional players who controlled many valleys around Cuzco during the preceding Late Intermediate Period (1000–1438). While the Chancas attack may have occurred, the Incas possessed a powerful state when the attack occurred. In another example, recent radiocarbon dates place the expansion of the empire twenty-five to fifty years earlier than the dates provided by written sources.

The Heartland

When the Spaniards entered Cuzco in 1533, the capital housed more than 100,000 people and was the largest city in South America. The city, located in the same place as modern Cuzco, stood in a fertile mountain valley in central Peru at an elevation of 3,395 meters. At the time of the Inca expansion, Cuzco was probably a typical mountain town of thatched huts that contained several ethnic groups living in distinct districts. Around 1463, Pachakuti returned

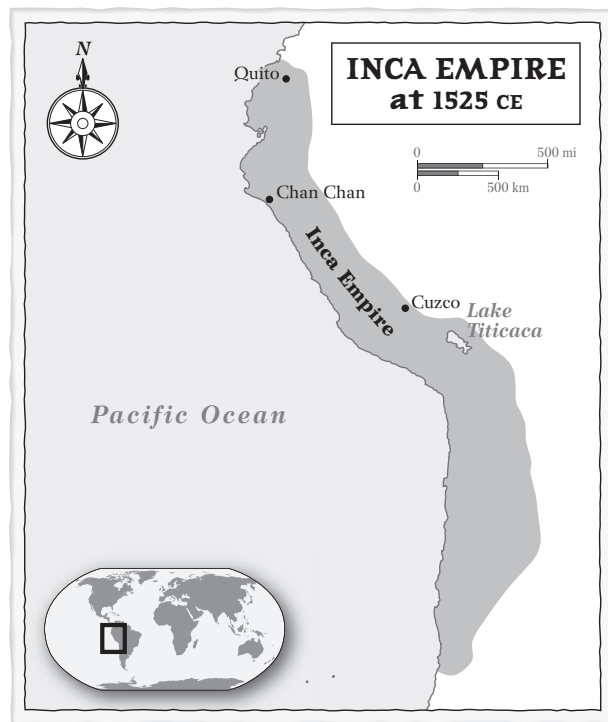


Inca builders fit together massive fine-cut stone blocks, like the ones used to build this wall in Cuzco, without the use of mortar. Library of Congress.

to the village from his conquests and removed all non-Inca ethnic groups from the city's core and resettled the groups into fringe enclaves. The Sapa Inca then rebuilt Cuzco as his capital.

The city's center was divided into upper and lower sectors that abutted a large plaza divided into two parts. In the middle of the plaza, a pointed stone covered in gold was the focal point for many state ceremonies. The large halls surrounding these plazas were likely temples, palaces, and houses for women who served the emperor. The city core may have been shaped in the form of a puma, with the megalithic terraces of Sacsawaman forming its head. Builders fitted together the massive fine-cut stone blocks used in Sacsawaman without the use of mortar. This type of masonry was used in many of the important buildings of Cuzco; architectural embellishments included trapezoidal niches and double (and even triple) jamb doors. Most Inca buildings in both the heartland and the provinces, however, were made of fieldstones or mud bricks (or both).

Crowned from among the members of at least ten royal kin groups (called *panacas*), the Inca emperor was an absolute ruler. The Sapa Inca was divine—the descendent of the creator god Viracocha, and the son of the sun god Inti. When the emperor died, all of his possessions were kept by his descendents. His



mummy was worshipped and continued to eat (via burnt offerings), visit friends (other mummies), and attend ceremonies. This system made it necessary for each successive ruler to build his own palaces, estates, and terraced fields. Through split inheritance, a new *panaca* was formed each time a new emperor was crowned. The *panaca* of the previous emperor maintained his holdings, but each new emperor needed to build his own estates because his new *panaca* had no previous holdings. Royal estates, usually made up of agricultural lands surrounding a cluster of well-made residences, halls, and shrines, controlled much of the land around Cuzco. Machu Picchu, the well-preserved ridgetop site located by Hiram Bingham in 1911, was perhaps one of the estates built by Pachakuti.

Besides the creator and the sun, the Inca pantheon included gods that symbolized other celestial bodies and forces of nature, such as the moon, lightning, thunder, and the rainbow. The Incas also worshipped several hundred sacred sites—often springs, rocks, lakes, and mountains—that were called *huacas*, as well as ancestor mummies housed in aboveground sepulchers. Supplicants offered gold, silver, cloth, ceramics, corn beer, llamas, alpacas, and, more rarely, humans to these divine beings, and many rituals were tied into a sacred calendar of twelve lunar months.

Around Cuzco, the *huacas* were organized on a network of forty or forty-one lines radiating from the Coricancha, Cuzco's sun temple. Called the *ceque* system, each line was assigned to a particular social group that was responsible for the ceremonies at each *huaca*.

The Provinces

There were at least eighty provinces divided among the four quarters of Tawantinsuyu. While ethnic Incas usually controlled the most important political and religious positions in these provinces, local lords retained a significant degree of control over local affairs. In general, the Inca encouraged a degree of autonomy to decrease administrative costs and hinder groups from uniting, and strove to maintain local religions, dress, and languages. Nonetheless, the empire was still a disruptive force. The empire claimed ownership over all natural resources, divided land into tracts for the Incas, the state religion, and the local communities, bought colonists, called *mitmaq-kuna*, into new areas, and moved settlements into more productive growing areas. In addition, the empire tore down or built up political systems according to its interests and organized local populations into units of one hundred, five hundred, a thousand, five thousand, and ten thousand households to facilitate census taking and labor recruitment.

The Inca economic system was neither a market nor a tribute system. No coinage was used in the realm, and, strictly speaking, the empire demanded no goods in kind from its subjects. Instead, the mainstay of the imperial economy was a labor tax that was couched in an ethos of reciprocity. Every household was required to provide some kind of service, such as farming, herding, construction, mining, or military service, to the state. In return, the state sponsored large feasts for its subjects at which enormous amounts of food and drink were consumed. The state also maintained a number of specialists that worked full-time for the state, such as artists, household servants, and temple workers.



The most famous of these specialists were the *aql-lakuna*, young women who brewed corn beer and wove cloth at state centers. Kept under close guard, the Sapa Inca often married these women to Inca and local elites in order to strengthen his political power.

The Incas built provincial administrative centers across the empire. These centers served as local hubs for administration, religious ceremonies, military actions, and labor recruitment. Most importantly, the Inca accumulated the fruits of the labor tax at these sites. The largest of these centers, such as Willkawayman, Pumpu, Cajamarca, and Huánuco Pampo, contained hundreds of storehouses. *Quipus*, mnemonic devices made by hanging knotted strings from a main cord, were used to record the contents of the storehouses. Census data, ritual calendars, astronomical observations, and even histories may have also been recorded on the *quipus*. While many products were consumed locally at the provincial centers, caravans of humans and llamas transported many of the goods across the 30,000 kilometers of Inca roads. The roads, an engineering marvel in the rugged terrain of the Andes, also served to facilitate the movement of troops. A system of runners allowed messages and small items to be carried quickly on these roads over long distances.

The Incas and the World

The opportunity to learn from the Incas was almost completely squandered after the Spanish conquest. The Spanish success, helped by the Inca war of succession, the willingness of subjected groups to rebel, and, most importantly, the diseases that the adventurers carried with them, nearly obliterated Andean civilization. Epidemics, civil wars, and forced labor over the first fifty years of Spanish rule wiped out over half of the population. Entire villages were abandoned, languages were lost, and rituals forgotten. Outside of the Andes, the most lasting legacy of the encounter between the Incas and the Spanish may be the potato.

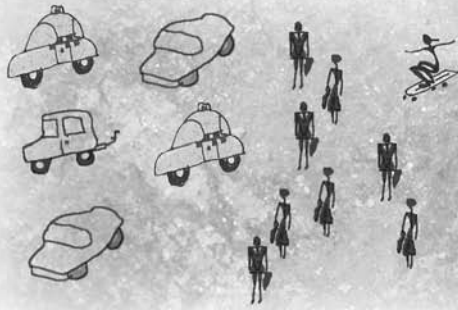
The daily fare of Inca commoners and elites, the potato has now become an important staple crop in countries around the world. It is an unlikely reminder of a mighty empire that lived for only a short time.

Justin JENNINGS
Royal Ontario Museum

See also Andean States; Art—Pre-Columbian Central and South America; Spanish Empire

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Indigenous Peoples

Although *indigenous* is often used to describe humans (or nonhuman life) with origins in a specific place, the term *indigenous peoples* specifically refers to those who have become minorities in their own lands. Contributing factors include the shift from foraging to agriculture as well as invasion, displacement, and colonization. In the twenty-first century many peoples have “lost” their indigenous distinction by fighting against colonial powers and becoming citizens of independent nation-states.

All peoples are in a sense indigenous peoples, since they come from somewhere. The term *indigenous peoples* has come to refer to those people who have become minorities within their own territories as a result of the expansion of technologically more advanced peoples. The process of creating indigenous peoples accelerated in the past five centuries, though it is a process as old as the advent of agricultural societies. In the twenty-first century, the major groups of indigenous peoples are the Amerindians of the Americas, the Aborigines of Australia and Oceania (including peoples in Papua New Guinea, New Zealand, and Hawaii), the Eskimo and Siberian peoples in the far Northern Hemisphere, the Taiwanese, and the Ainu in Japan. Also, Tibetan and Turkic peoples in China can be considered indigenous peoples.

Although the diversity of indigenous peoples is extremely large—from tiny groups in the tropical Amazon, millions in highland Guatemala, thousands on Pacific islands, to small villages on the tundra—they all share similar characteristics. The similarities are important; in most cases these groups

have been displaced over the past centuries from their original territory or other peoples have moved in and conquered the aboriginal inhabitants. Indigenous peoples by definition do not have separate states, though they may define themselves as “nations” (in many areas such as Canada indigenous peoples are formally known as “First Nations”); in fact they have considerable autonomy, as is the case with the Inuit in Canada. Indigenous peoples also change status as regions are decolonized, and thus become citizens of nation-states where they are the majority and wield most political power.

Historical Periods

In a sense, the conquest of aboriginal peoples goes back before the dawn of history; it might, for example, explain the disappearance of Neanderthal man. There are four principal periods in the history of indigenous peoples throughout the world. The first period chronicles the slowly progressing domination over indigenous peoples through conquest and colonization. This process began with the formation of agricultural societies and the creation of the first states, about 7,000 to 8,000 years ago. Agricultural societies, because their populations quickly outgrew foraging and nomadic societies, replaced these indigenous peoples at a relatively constant pace. At times, nomadic peoples invaded agricultural societies but were eventually absorbed, for example in the Aryan invasions of India in the 1200s BCE or the Mongol invasions of Russia, the Middle East, and China in the 1200s CE.

The process accelerated considerably in the 1500s with the conquest of the Americas and the Philippines

by the Spanish and the Portuguese, beginning the second phase in the creation and subjection of indigenous peoples. The people who would be known as “Indians,” such as the Maya, Mexicas (Aztecs), and Incas, were in the majority agriculturalists as well, thus changing the older dynamic of mostly agrarian versus foraging societies. The Amerindians suffered a process of conquest and absorption by European states and their successors that only ended in the twentieth century. The term *Indian* is of course a misnomer; Christopher Columbus thought he had reached India and therefore called the inhabitants *indios*. Indigenous peoples, who were very diverse, accepted their new name after the Spanish set up legislation favoring Indians a generation after the conquest.

The third phase began in the late eighteenth century, when European powers conquered the peoples of the Pacific islands and Australia; it accelerated in the nineteenth century when western European countries divided up Africa and parts of Asia. In this phase, industrialized societies conquered agriculturalists and foragers, making them indigenous.

The last phase, in which some indigenous peoples ceased to be considered as such, began in the mid-twentieth century as indigenous peoples fought against the colonial powers and were able to create independent nation-states in Africa, Asia, and Oceania. The process continued into the 1990s as the fall of the Soviet Union and the creation of independent nations in its stead converted indigenous groups into national societies. Likewise, indigenous groups within nation-states such as the Americas and the Pacific islands have organized and gained increasing autonomy and political power where societies have become more democratic and accepted their pluriethnic character.

The Making of Native Americans

The expansion of western Europeans into the rest of the world, beginning in the 1450s CE, brought on the most intense period in which indigenous peoples were “created.” Policies toward conquered



In this photo from the early twentieth century, an Aymara Native American in Bolivia poses in traditional dress.

peoples by the major European colonial powers varied significantly, though in all cases the Europeans took away lands, exploited labor, and severely punished those who rebelled. Interactions also varied according to the types of indigenous societies. For example, the Spanish found small-scale societies in the Caribbean in the sixteenth century difficult to subdue. Later, Hernán Cortés and Francisco Pizarro led small groups of Spanish into the Mexica (Aztec) and Inca empires, respectively, conquering them in alliance with dissident indigenous groups. The groups in Brazil were too loosely organized for the relatively weak Portuguese to conquer all at once. Likewise, on the eastern seaboard of North America, the English settlers found themselves in the seventeenth century confronted with loosely federated but militarily powerful peoples who could not be easily subdued.

It took European diseases and many decades for the Portuguese and English to dominate aboriginal

Indigenous peoples often struggle to retain maintain their culture, language, and way of life. This barrier keeps outsiders away from the kiva, an underground religious chamber at the Taos Pueblo, New Mexico.



peoples in their colonies. Thereafter, the Spanish attempted to maintain some land and legal rights for the Indians while regulating the exploitation of their labor, whereas the Portuguese settlers (especially around São Paulo, Brazil) were more interested in enslaving indigenous peoples to work on sugar plantations in the northeast. The English found little use for the indigenous and took away their lands, while the small number of French clustered in northern and central parts of North America allied themselves with powerful indigenous groups as a means of gaining access to the fur trade.

“Becoming” Indigenous in Central Asia and the Pacific

The seventeenth century also saw the subjugation of peoples in Siberia by the Russians. The Buryats were Mongol pastoralists who came under the rule of Russian traders as the Russian state pushed eastward, across the Ural Mountains. The Russians also gained tenuous control over other groups such as the Tuvans, Kalmyks, Kazakhs, and Tajiks because they were better organized and had access to more sophisticated weapons than the natives. In a similar pattern, the Han Chinese, especially during the Qing dynasty (1644–1911/12) extended their control westward, subjugating some of the same Mongol and Turkish peoples in what is today the Xinjiang region

of northwestern China; ironically, the Qing emperors themselves were non-Han Manchurians.

In the eighteenth century it was the turn of the peoples in the Pacific to “become” indigenous: the Muslim and Buddhist peoples of Java and the other main islands of the Indonesian archipelago slowly dominated peoples from islands toward the east, and the British took over Australia and New Zealand. The Australian colony, founded in the mid-eighteenth century as Botany Bay, mistreated the foraging Australian Aborigines by occupying their land and often killing them. The British competed with the French for New Zealand. The native peoples, called Maori, were better organized and, with access to muskets, were able to resist. The British signed the Treaty of Waitangi in 1840 with many Maori chiefs, converting the Maori into British subjects. The Maori conception of land tenure was different from that of the English; as the Maori understood it, selling their land meant being paid for its temporary use rather than its permanent loss. As European settlers began to overwhelm New Zealand, the Maori rebelled in a series of failed wars in the 1860s. Thereafter, the British acquired lands with impunity.

In the Japanese archipelago, the far northern island of Hokkaido is populated by a people called Ainu, who are ethnically distinct. As the Japanese state expanded, it gained control over this population by the fourteenth century CE. During the Edo or Tokugawa period (1600/1603–1868), the state favored the

Japanese over the Ainu. After the Meiji Restoration in 1868, in the name of progress and because of population pressures, the state sent Japanese to relocate in Hokkaido, turning the Ainu into a minority in their own lands. The Ainu were forced to learn Japanese and abandon their customs, though many families continued to maintain their culture clandestinely.

Nation-States and Indigenous Americans

By the early nineteenth century, most of the former European colonies in North America had become independent, but the situation of indigenous peoples worsened uniformly. In North America, the United States and Canada killed the Indians or forced them into reservations on economically marginal lands. In nineteenth-century Brazil, the imperial government saw Indians as people who had to be absorbed into society or exterminated if they opposed assimilation. In the former Spanish colonies, Indians were initially given citizenship rights after independence, but these were later taken away as the elites, mainly descendants of Europeans, fortified the state and adopted scientific racism and social Darwinism as justifications for the usurpations. As a result, indigenous peoples became impoverished during the nineteenth and early twentieth centuries. Also, in the late nineteenth century the national states invaded the frontier territories of indigenous groups not yet under their domination, such as the Pampas and Patagonia in Argentina.

Central Asian Indigenous in the 1900s

Most people defined as indigenous in Asia come from its central parts. Their experience in the twentieth century, with few exceptions, was a horrific one. The Stalinist regime in the Soviet Union, although it paid lip service to ethnic minority rights, was murderous in its policies. The Buryats, for example, tried to establish a Mongolian republic independent of both Russia and China in the early twentieth century. When Stalin incorporated the Buryat region into the Soviet Union, many independence leaders fled. Stalin

demanded their return, however, and when they came back had them summarily executed in 1929. Stalin's actions halved the Buryat population. The Tuva also resisted collectivization in the 1930s, but the Terror of 1937 led to the murder of Tuva nationalists. Despite the declaration of the Tuva region as an autonomous province in 1944, the remaining Tuva were put into boarding schools and "Russianized," while Stalin encouraged Russian colonists to settle there.

The fall of the Soviet Union in 1989 improved somewhat the political situation of some of the indigenous peoples of Siberia and Central Asia. In Central Asia, some of the previously indigenous people transformed into national groups, such as in Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. Unfortunately, many of these new nations are still ruled by autocrats, limiting rights of all residents.

The Chinese Communist state instituted policies similar to those of Soviet Union in Xianjiang after 1949 and in Tibet after the 1950 invasion. The process of sinicizing the western borders of China accelerated in the last few decades of the twentieth century as increasing prosperity and overpopulation in the eastern sections brought more Han Chinese westward.

Indigenous Movements from the 1980s Onward

Indigenous movements have existed since the advent of nation-states, from the eighteenth century onward, though most movements expressed their demands mainly through violence because of their members' subordination and inability to have a voice in the national political arena. Only in the last few decades has that changed, as governments have provided formal avenues for their citizens to express their discontent. The concept of class as a means of organizing people faded with the decline of Marxism, and thus ethnicity has taken its place in many states where indigenous peoples are prominent, either in the number of people or the territory that they inhabit.

Since the last few decades of the twentieth century important indigenous peoples movements have



flourished throughout the world, from Latin America to Asia, Africa to Europe. All are diverse and have different aims, although many movements were inspired by the passage in 1989 of the International Labor Organization (ILO) Convention 169, which provided indigenous peoples the right to maintain their culture, their language, and their way of life as a part of international law. This passage was made possible by the rise of nongovernmental organizations (NGOs) that have helped to organize and finance these movements.

Failures in Asia

In Asia indigenous peoples movements have not had much success. True, much of the southern portion of the Soviet Union in Asia has become independent, and native peoples have gained control over the government. Independence had little to do with indigenous movements, however; in fact, former members of Soviet political organizations control the newly independent states of Uzbekistan, Kazakhstan, Kyrgyzstan, Turkmenistan, and Tajikistan. At best, indigenous peoples in Asia have been recognized, and governments at times have been willing to accede to indigenous peoples' demands. These developments occurred in Japan, where the native Ainu population of the northern island of Hokkaido in the 1980s and 1990s received recognition of their rights to existence and some economic aid. At worst the Chinese government continues to repress the native populations of the western territories, suppressing any indigenous movement as subversive.

The Chinese case merits special attention. The Uygurs of the Xinjiang Uygur Autonomous Region in northwestern China had briefly established the Republic of East Turkistan in the twentieth century, but the Chinese government quickly crushed it. During the 1990s, the Uygurs again launched a movement for autonomy. The Chinese Communist government responded by building roads and infrastructure to promote economic growth. The government also repressed the autonomy movement and severely restricted the practice of Islam and other Uygur cultural

practices. Lastly, the government flooded the region with Han Chinese to build a non-Uygur majority that could control the resistant natives. This tactic appears to have been effective, and the Chinese have used similar tactics in Tibet as well. Although the Chinese case represents the repressive extreme, other indigenous populations (even ethnic minorities in the former Asian Soviet republics) are generally repressed and have been unable to develop effective movements for greater autonomy. The Chinese state has defined any resistance by ethnic minorities after the events of September 11 as "terrorism," thus providing for a police or even military response. The 2009 riots in the capital Uygur capital of Urumqi, for example, led to widespread repression.

More Success in the Americas

The case of the Americas is more positive for indigenous peoples, although great variation exists there as well. For example, indigenous peoples movements such as the American Indian Movement (AIM) in the United States attempted during the 1970s to force the U.S. government to honor the treaties it signed with Native American tribes during the nineteenth century, but this attempt led to repression by the Federal Bureau of Investigation (FBI) and an infamous standoff between the government and AIM activists at Wounded Knee, South Dakota, in 1973. Since then the movement has been unable to make much headway. After a 1991 law made gambling legal on reservations, many tribes have tried to develop their reservation economies by operating casinos rather than unifying in a single movement.

Other indigenous movements, especially the movement to establish autonomous zones for the Inuit (commonly called "Eskimo") in Canada, have been more successful. Since 1975 the Canadian government has signed a series of laws creating large autonomous territories in the far northern portion of the country. Largest is the territory of Nunavut, where the Inuit have substantial control over legislation and judicial systems autonomous of the Canadian federal government.

A people without history is like wind on the buffalo grass. • **Sioux Proverb**

Farther south indigenous movements have had success in varying degrees. In Mexico, beginning in 1994 the armed Zapatista movement in Chiapas in the southern region brought the indigenous movement back into the limelight, but, in fact, indigenous peoples have not benefited much. In Guatemala an indigenous activist, Rigoberta Menchú, won the Nobel Peace Prize in 1992. Death squads and a violent political climate forced the Maya to organize mainly in Mayan language and cultural organizations without overt political goals. Menchú's example was more important for providing moral authority to movements elsewhere in Latin America.

Indigenous movements initially were most successful in South America in the Andes, where a large indigenous population has been able to mobilize politically. Ecuadorean indigenous peoples after the late 1980s were able to unify the highland peasant communities with the lowland hunters and gatherers. In the highlands issues such as good agricultural prices, access to transportation, and lack of arable land were most important to the indigenous peoples, whereas in the lowlands settler invasions, environmental destruction by oil companies and miners, and indiscriminate road building were the most important issues. Nevertheless, the rather diverse groups were able to organize the Confederation of Indigenous Nationalities of Ecuador (CONAIE) and stage peaceful but massive invasions of Ecuador's capital city, Quito, various times in the 1990s. After that CONAIE formed a political party, Pachakutik, and helped defeat the president of Ecuador in January 2000. Despite Pachakutik's help in 2003 to elect Lucio Gutiérrez, an Ecuadorean army colonel who had conspired with the indigenous peoples in 2000, Pachakutik soon thereafter went into opposition because Gutiérrez was unwilling to fulfill the indigenous peoples' demands. Since then, the government under leftist Rafael Correa has co-opted the issues of Pachakutik and the party lost its political significance.

In Bolivia indigenous organizations remained important, with some ups and downs, to the early twenty-first century. Although indigenous political parties never won many votes, they have allied themselves

with other leftist parties. Evo Morales, during the 2002 elections, "discovered" his indigenous heritage and used it to help oust one president and to get himself elected with a majority vote in 2005. Since then, the government has put into place pro-indigenous policies and made most indigenous leaders beholden to the state. In Peru the indigenous peoples' movement is incipient and relatively ineffective despite the fact that Alejandro Toledo played up his indigenous heritage to win as president in 2001. The massacre by police of indigenous activists in the eastern Peruvian jungle in 2009 led to a revisiting of mining and land policies, but it is unclear whether this will lead to greater influence by indigenous peoples.

Indigenous peoples' movements are less developed in the rest of South America, although the Mapuche in Chile have a relatively strong political presence in the southern part of the country. In Brazil different indigenous groups, in conjunction with NGOs, have been able to protect some of their lands. The smaller numbers of indigenous people, however—compared with the rest of the population in these countries and in the rest of South America—have lessened their political impact nationally. Still, democracy and the abundance of multinational NGOs with their networks and funds have made indigenous movements in South America a force to be reckoned with.

Ethnic Confusion in Africa

Indigenous peoples' movements have cropped up in Africa, but the situation is confused there because conflicts between ethnic groups usually have gone on for many centuries. The major conflicts are between Arabic-speaking peoples and non-Arabic-speaking peoples in the northern tier of the continent and between Bantu-speaking peoples and the indigenous San (Bushmen) people. The San have formed multinational organizations that span South Africa, Botswana, Namibia, Zambia, and Zimbabwe. Each country has a movement and then they have an umbrella movement that spans all the countries where the San live. Such organizations are attractive to multinational NGOs, but the lower San population,



compared with the non-San populations, and the weak national political presence have made the San movements relatively toothless in any one country.

National Status in the Pacific Basin

As decolonization proceeded in the Pacific Basin, ethnic movements (which can be equated to national movements on many islands) gained national status. The only exceptions were the French and U.S. possessions, as well as New Zealand and Australia, with majority populations whose ancestors had migrated from western Europe. In New Zealand the Maori had gained considerable autonomy and political power (they also constituted by 2001 about 15 percent of the population) and were represented separately in Parliament according to their relative population. In 1980 New Zealand established the Waitangi Tribunal to examine land claims dating from the nineteenth century onward. In 1995 Great Britain's Queen Elizabeth apologized publicly for the wrongs committed against the Maori, providing a moral victory for the indigenous population.

In Australia the Aboriginal peoples, although they have gained some rights, lag behind in political organization and in their rights. Aborigines tend to be more rural and less educated than the Maori. It is not clear whether the policies instituted in by former president John Howard in 2004, in which Aborigines are paid for sending their children to school, is a new form of paternalism or is one of "mutual obligation" for all the wrongs committed by whites since their conquest of the continent.

The Future of Indigenous Peoples Movements

In certain regions, such as the Americas, indigenous peoples movements will continue to exist, though in the cases of Ecuador, Bolivia, and to a lesser degree in Argentina, new, leftist governments have subsumed some movements. In Peru and Guatemala indigenous peoples movements likely will begin to

flex their political muscles as democracy, the ability to communicate via the Internet, and NGOs foster organization.

Indigenous peoples movements are not always positive, however. During the 1990s, in countries such as Rwanda, Turkmenistan, and Zimbabwe, rulers at times persecuted people who were seen as settlers in the name of recouping indigenous rights.

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See also Australia, Aboriginal; Colonialism; Decolonization; Foraging Societies, Contemporary; Postcolonial Analysis

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Scholars have labeled the mid-to-late-eighteenth-century change in England, France, and the United States—from an agricultural-based society to one focused on the production of goods in factories—as the first Industrial Revolution. Although they disagree whether the development of steam power was its predominant cause, they do agree that industrialization and growing urban populations placed undue demands on fossil energy sources and natural resources.

The Industrial Revolution marked the shift from agriculture-based economy and the production of goods in homes to the production of goods in factories; it corresponded with the growth of population centers and transportation networks for the distribution of those goods. The first Industrial Revolution occurred in eighteenth-century England. Economists generally assign a starting date between 1740 and 1780. Scholars disagree about whether the Industrial Revolution was truly a sudden development or rather the result of changes that had been accumulating for centuries. Similarly, they disagree on the extent to which the Industrial Revolution was a consequence of the development of the steam engine as a source of power. But from the standpoint of the environment, the significance of the Industrial Revolution was the increased use of fossil energy sources and other natural resources, placing ever-increasing demands on the environment. The increased use of resources resulted not only from the energy needs of manufacturing itself, but also from the higher population densities that industrialized regions could support as well as the need to transport workers to the workplace and manufactured goods to market.

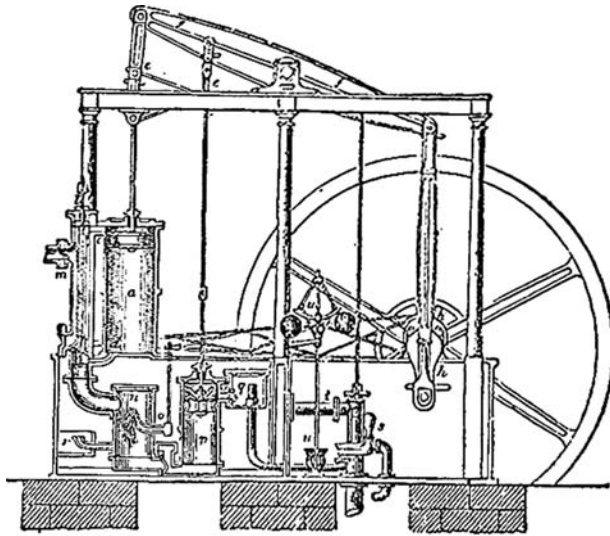
Preconditions for the Industrial Revolution

The Industrial Revolution could not have occurred until the “agricultural revolution” had gotten underway in England, making it possible to produce increased amounts of food using fewer workers. The agricultural revolution had a number of causes, including the enclosure of grazing lands, the invention of the seed drill and improved plows, and a more productive system of crop rotation. The potato, imported from the Americas, produced a higher yield of food per acre than cereal grains.

Industrialization in its turn had positive effects on agriculture and the economy. Inventions such as the spinning jenny and the cotton gin increased the profit that could be gained by planting cotton. The mechanical reaper increased the speed with which crops could be harvested. The development of machine tools made the manufacture of farm implements easier. Canals and railroads facilitated the transport of food into urban areas and brought manufactured goods to local markets.

Also necessary for industrialization were a stable currency and banking system. Industrial workers needed to be confident that the coins or banknotes with which they would be paid would be generally accepted in exchange for goods and services. Industrialists often needed to borrow the funds to build and equip factories. Banks and other lenders needed to be sure that the currency in which they would be repaid would have the same buying power as at the time it was borrowed.

Also contributing to the Industrial Revolution were the earlier scientific revolution, associated with English physicist and mathematician Sir Isaac Newton,



James Watt improved on earlier versions of the steam engine by introducing a second cylinder.

and religious thought of the Protestant Reformation, which established a positive correlation between material prosperity and divine favor.

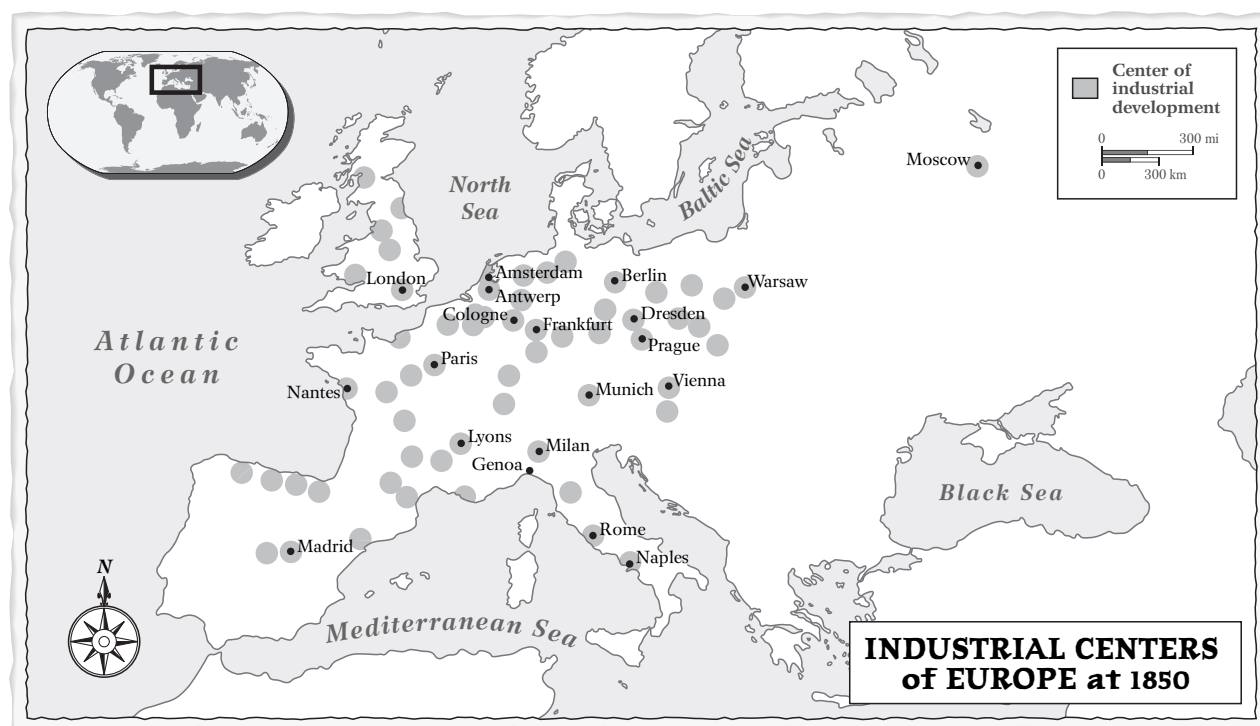
The Coal Industry and the Steam Engine

A case can be made that the precipitating event of the Industrial Revolution was a change in the ecology of England—the depletion of English forestland resulting from the burning of wood for warmth and cooking and its use in construction and in such activities as glassmaking. Coal, the first fossil fuel to be widely used, was an even more efficient source of heat than was wood, and iron would turn out to be a far more durable building material. But coal and iron had to be mined, and mines tended to fill up with water. A primitive steam engine, known as the “miner’s friend,” was patented in 1698 by Thomas Savery (1650?–1715), an English engineer from Devonshire, and could be used to remove water from mine shafts. Savery’s engine was improved and made much safer by Thomas Newcomen (1663–1729), a Devonshire blacksmith. Newcomen’s engine was highly inefficient, however, because much of the energy released by burning coal was wasted reheating the engine’s one cylinder, which was cooled as a part of its operating cycle. It remained for the Scottish inventor James Watt (1736–1819) to introduce a second cylinder for

condensing the steam, allowing the power-generating cylinder to remain warm. Watt produced a working model by 1775, and Watt’s company had installed forty engines in the mines of Cornwall by 1880. Watt continued to improve the steam engine, which found increasing use in factories as well as mines. By 1800 more than five hundred steam engines were in commercial use.

The steam engine represented the first use of heat energy to perform mechanical work. Prior to its invention, the only power sources available to industry were those of human and animal muscle and the energy of flowing water and the wind, the availability of which were somewhat restricted by geography. A steam engine, however could be installed anywhere water and fuel were available. The steam engine is a good example of the interaction of science and technology during the Industrial Revolution. The earliest versions, those of Savery and Newcomen, were the products of a process of trial and error, with little base in scientific theory. Indeed, a proper scientific theory of heat was not available until the mid-nineteenth century. Watt, although not a university graduate, worked at the University of Glasgow and was acquainted with some of the leading scientific minds of his time, in particular Dr. Joseph Black (1728–1799), who introduced the concepts of latent heat and specific heat, which were essential to understanding the operation of the engine. Watt’s designs also required that workers be able to produce parts to exacting tolerances, requiring that they master more sophisticated tools and measuring devices.

Building better steam engines would become one of the primary motivations for the development of the science of thermodynamics, which connects heat and mechanical energy. In 1824 the French physicist Sadi Carnot (1796–1832) published “Essay on the Motive Power of Heat,” in which he showed that there is a fundamental limit to the efficiency of any heat engine, a limit that is set by the temperature of the environment. Thus any process in which heat is produced for conversion into mechanical energy results in the release of heat to the environment.



The Textile Industry

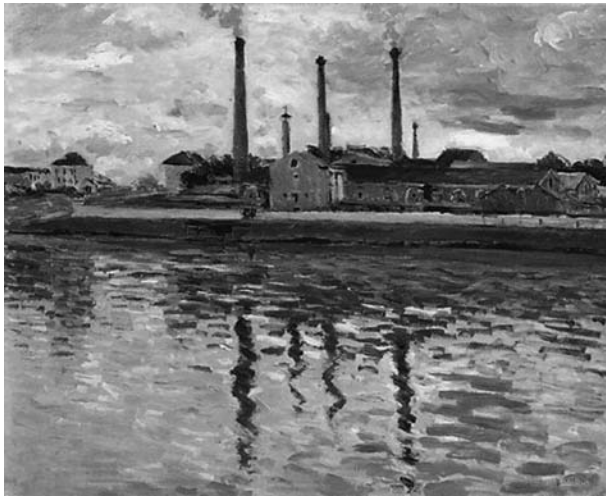
The climate and terrain of Britain and Scotland were highly suited to sheepherding, and many farm households were involved in the spinning of wool and manufacture of woolen garments. They had also begun the manufacture of cotton cloth. Cotton was available to the English from plantations in the southern United States, the Caribbean, and the Middle East. Whereas the cost of growing a pound of cotton was much less than that of a pound of wool, converting cotton into cloth was a more labor-intensive process. The importation of cotton fabric from India led to interest in the possibility of manufacturing cotton garments in England.

The basic operations in the production of cloth are spinning, in which short fibers are wound into a continuous thread or yarn, and weaving to form cloth. The first major invention in textiles during the Industrial Revolution was that of the flying shuttle loom, patented by the English inventor John Kay (1704–1768) in 1733. The improved loom greatly improved the speed with which thread could be woven into cloth, creating a demand for more production of yarn, a demand met by the spinning jenny, introduced by James Hargreaves (1720–1778) in 1764, making it possible to create multiple strands of yarn at the

same time. Hargreaves's spinning jenny produced a relatively weak yarn, however. Sir Richard Arkwright (1732–1792) invented a machine in which, by careful control of tension in the fibers, a much stronger thread was produced. Both Hargreaves and Arkwright were forced to relocate by their neighbors, who felt that they would be driven out of the market as producers of thread and cloth. By 1778 twenty thousand spinning machines were in operation. Steam engines were installed as "prime movers" in the textile factories, providing mechanical energy to the spinning machines and, later, power looms. In 1793 the American inventor Eli Whitney (1765–1825) began production of the cotton gin, a device that greatly speeded the removal of cotton seeds from cotton fiber, assuring an increased supply of raw cotton, which English textile manufacturers eagerly imported.

The Iron Industry and Transportation

The extraction of iron from its ores and its use in construction greatly expanded during the Industrial Revolution. Iron production is very costly in terms of energy. Wood does not burn at a high enough temperature to be used directly to heat the ore, so charcoal had been used instead. The copper industry had begun using coke, a purified form of coal, as a more



Gustave Caillebotte, *Factories at Argenteuil* (1888). Oil on canvas. The railroad line connecting Paris to Argenteuil transformed this small town on the Seine, once noted for its asparagus and wine grapes, into a *petite ville* combining fine residences and river walks with tanneries and chemical plants—and enough aesthetic appeal to attract the Impressionists.

reliable heat source. Abraham Darby (1678?–1717), an English engineer working in that industry, realized that coke could be used effectively in iron extraction as well. In 1708 he opened the Bristol Iron Works Company and within a few years was manufacturing the huge cylinders needed for the Newcomen steam engines being installed in numerous coal mines.

Numerous advances in land and water transportation facilitated the Industrial Revolution. Canal building by private landowners had been a tradition in England. In 1760, however, Parliament approved using public funds for the construction of the Bridgewater Canal, which was about 16 kilometers long, to carry coal from the coal mines at Worsely to the manufacturing city of Manchester. This reduced the cost of coal to the textile manufacturers by about 50 percent. The success of the Bridgewater Canal was followed by a period of extensive canal building, with nearly fifty additional canals being built by the end of the century and industrialists establishing factories on sites that would reduce their transportation costs.

England also enjoyed a strong navy and a merchant marine fleet. Navigation on the open sea was rendered much safer by John Harrison (1693–1776), a carpenter and clockmaker who invented a chronometer

that remained accurate on ship and thus could be used, together with astronomical observations, to determine longitude. Sailing remained dependent on wind, however, and thus somewhat unpredictable until the invention of a practical steamboat by the American inventor Robert Fulton in 1787. By using Watt's steam engine to power a paddlewheel and later a propeller, Fulton made water travel faster and more dependable.

The steam locomotive appeared in 1802 when English inventor and engineer Richard Trevithick (1771–1833) commissioned Darby's Bristol ironworks to produce the first locomotive engine. The railways would become the biggest consumer of industrial iron, required both for the steam-powered trains and the rails they rode on. Although only 320 kilometers of rail were operating in 1820 (all of it in Britain), thousands more would be installed by midcentury.

Social Consequences

The Industrial Revolution occurred in England at roughly the same time as the American and French Revolutions. Although the three revolutions were dissimilar in many regards, they all had the effect of greatly diminishing the power of a landed and hereditary aristocracy: in France by execution, in America by political action, and in England by the accumulation of wealth by a new class of entrepreneur. As a result, social mobility greatly increased, and a new class of technically skilled working men, machinists, draftsmen, and engineers emerged. At the same time the status of unskilled or semiskilled workers diminished. Factory workers were required to report for work seven days a week, ten or more hours a day. Many procedures had to be completed while the machines were still running because it was too costly to interrupt production. Many workers, including many children, were maimed as a result. Eventually child welfare laws and unionization would reduce the human toll of industrialization while more enlightened manufacturers came to appreciate that well-paid and healthy workers would be more productive and



China, the world's largest expanding market (and the world's most populous country), is a hubbub of construction and industrialization in the twenty-first century.

ultimately an important part of the market for manufactured goods.

The Developing World

The prosperity of the United States, England, and countries of northern Europe as industrialized nations is widely envied by nations in the developing world, and many poorer nations have set upon an agenda of industrialization. Becoming an industrial power, however, is difficult without a stable currency and government and a literate population. Cultural considerations also come into play; not all cultures share the European notion of progress. Because industrialization requires energy sources, industrializing nations and the international community must weigh the benefits and risks of the increased use of fossil fuels, if available, against those of nuclear power plants that might be built. There are also limits to the role that governments can play in stimulating industrialization. The leadership of the former Soviet Union was able to industrialize the production of military hardware and farm machinery but had little to offer

in the way of consumer goods. Industrialization is making headway in the Pacific Rim as multinational corporations find it easier to manufacture electronic goods in countries with cheaper labor and less stringent environmental laws. How best to facilitate the industrialization process without further deterioration of the global environment remains an issue of international debate.

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See also Iron; Railroad; Textiles

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Information Storage and Recovery

Humans survived through millennia by passing on knowledge through stories, ideographs, and pictures. Sumerians (circa 3000 BCE) and Chinese (circa 1500 BCE) were the first to develop rudimentary writing methods. Information was soon stored in encyclopedic form, in libraries, and, after the fifteenth century, further disseminated in mass-produced books. Fast-forward to the twenty-first century; computers and the Internet have redefined what it means to “look something up.”

Knowledge is lost if it cannot be stored and retrieved. Throughout most of the five hundred thousand years of human history, the storage methods employed were primitive at best. The only means ancient tribal people had for transcribing information was through the use of ideographs and pictures drawn on cliff faces and cave walls, or by cutting meaningful notches into strips of wood. Most knowledge was passed from one generation to the next through the repetition of stories and the use of rhyming memory clues. Such stories, much like the tales told among primitive people today, transmitted social codes, related tribal history, and taught the young about what the old generation knew of the dangerous and benign animals and plants in the natural world. The number of such stories told over the entire span of human development must be enormous. The U.S. anthropologist Melville Herskovits estimates that today’s African tribes have between 200,000 and 250,000 stories. The number of recorded tales among the North American Indians also runs into the thousands, and then there are those of today’s tribes in Polynesia, Australia, and other parts of the world. Most of these

stories are rhythmic and repetitive, filled with emotion and visual details that act as an aid to the exact transmission of the content.

Ancient Record Keeping

We are so accustomed today to seeking information in libraries, dictionaries, encyclopedias, and on the Internet that it is somewhat difficult to visualize societies in which children grew up learning only the things that adults passed on to them by word of mouth. When people finally did develop rudimentary methods of writing, they first used this skill only for recording rather mundane matters such as imprinting to denote ownership, listing barter transactions, and producing magical incantations. It wasn’t until the Egyptians developed papyrus about 4000 BCE that information could be written and preserved on scrolls and later in books to be easily moved from place to place and stored in libraries. Around 3000 BCE the Sumerians, who lived in Mesopotamia, first reached the level of primitive writing using a rudimentary alphabet. The Chinese independently developed their form of writing about 1500 BCE employing separate symbols for each word. Over the centuries the Chinese kept adding symbols until their language today uses about 50,000 separate characters, all based on those first introduced during the Shang dynasty (1766–1045 BCE).

Handwritten papyrus scrolls and later printed books were often collected together in private and public libraries where authorized persons could view them. The famed library at Alexandria is estimated to have had several hundred thousand papyrus scrolls in its storage bins, most containing a

Tourists view the ancient petroglyphs on Newspaper Rock State Historic Monument at Indian Creek Canyon, Utah. The Anasazi peoples created the earliest of these images about 2,000 years ago. National Archives.



wealth of information acquired by the Egyptians and Greeks. All of these were lost when the library was destroyed during a time of military siege. It is said that the victors burned the scrolls to heat the public bath water. This is not the only recorded disaster to thwart the accumulation of knowledge. In the mid-1500s, Bishop Diego de Landa ordered the Spanish conquistadors to burn all the Mayan bark-cloth books they could find, because these “contained nothing but superstitions and falsehoods of the Devil.” The great collection of Mayan astronomical knowledge was thus destroyed, as were all the Mayan officials and intellectuals who knew how to read the texts. Archaeologists are still trying to decipher the few manuscripts that survived.

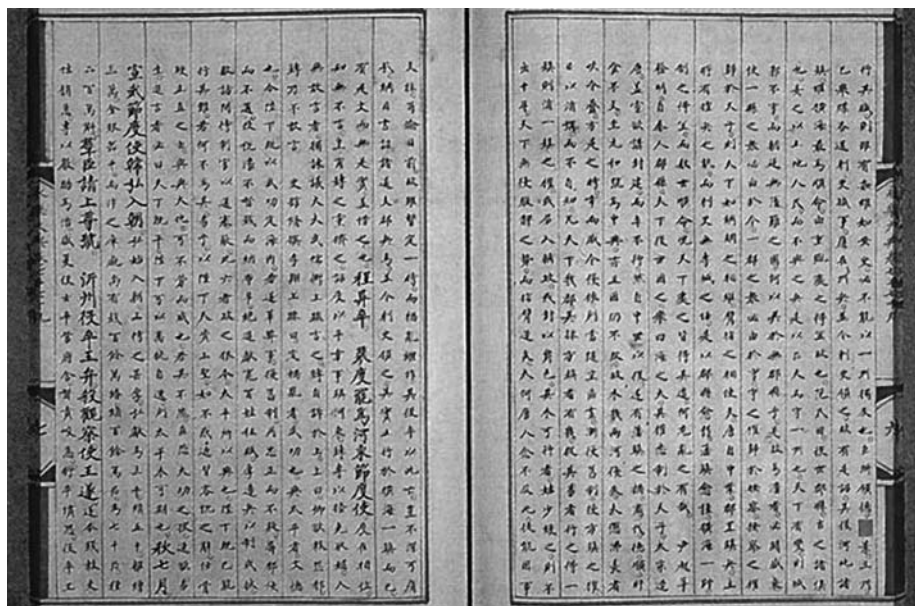
Encyclopedias: Circles of Knowledge

To the ancient Greeks, knowledge was static and not dynamic. They held that, once understood, the world could be controlled; that it never changed even as new things were discovered about it. The Greeks set about gathering all the known facts and recording them on scrolls that later became known as encyclopedias (*enkyklios*, meaning circular or complete, and *paideia*, meaning education). Pliny the Elder (23–79 CE) used the two words in this way in his preface to *Natural History*, where he says that he treats all the subjects of the circle of learning. Pliny’s work consisted of 37 parchment scrolls and 2,493 articles.

History, however, awards the title “compiler of the first encyclopedia” to Speusippos, the nephew of Plato who took over the leadership of the Athens Academy after Plato died in 347 BCE. Only fragments of the work by Speusippos survive, but we do know that he intended his encyclopedia to be a teaching aid for use in lectures at the Academy.

The first Roman to produce an encyclopedia was Marcus Porcius Cato (234–149 BCE), a general and quite prominent citizen of Rome. His work, *Præcepta ad Fillum*, covered the subjects of agriculture, law, medicine, oratory, and war. The entire text was eventually lost but other Roman encyclopedias of note for which we have remnants are those produced by Marcus Terentius Varro (116–27 BCE) and Aulus Cornelius Celsus, the latter a twenty-six-volume work written during the reign of Tiberius (14–37 CE).

Like the Greeks the ancient Chinese established academies of scholars to gather all their knowledge so that it could be passed on to later generations. Their first encyclopedia was the *Huang Yan* (Emperor’s Mirror) prepared under the order of an emperor about 220 CE. No part of this work survives, but later Chinese encyclopedias describe it as a carefully structured work written in fine literary style. The Chinese also produced the world’s most extensive encyclopedia, encompassing 11,095 volumes and over 500,000 pages. This is the *Yongle dadian* (Great Compendium of Yongle). Some 2,000 scholars, commissioned in 1403 by Zhu Di (known as the Yongle Emperor),



Two pages of the *Yongle dadian*. Of its 11,075 original volumes, 370 survive, now scattered in libraries all over the world.

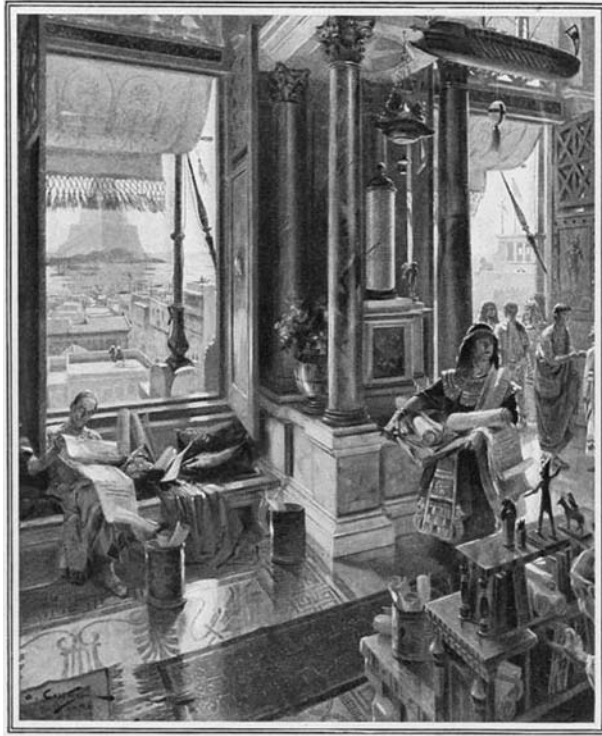
finished their work in 1408. A total of 370 volumes of this massive encyclopedia survive, now scattered in libraries all over the world.

Ibn Qutaiba (b. 828 CE), a teacher and philologist, produced the first Arabic encyclopedia, which was titled *Kitab Uyun al-Akhbar* (The Best Traditions). The work was divided into ten books covering asceticism, character, food, friendship, learning and eloquence, nobility, power, prayers, war, and women. Other Arabic encyclopedias followed, including a noted medical encyclopedia by Averroes (1226–1198) called *Al Shifa* (“the Healing”). Throughout much of the medieval period in Europe, Islam flowered in scholarship and preserved many of the Greek and Roman texts that had been forgotten or destroyed in the Christian world. Not until the later Middle Ages did Christian scholars, through Arabian contacts, begin to rediscover and collect this wisdom.

Medieval Europe did, however, produce a number of encyclopedias filled with the somewhat limited interests of the Christian communities. One of these was the twenty-volume work *Originum seu Etymologiarum Libri XX* (Study of the Origin of Words, Book 20) by St. Isadore of Seville (c. 560–636). It is unique for its time because Isadore’s starting point was the liberal arts rather than theology. Most of the medieval encyclopedias were compiled, without acknowledgement, from bits and pieces of other people’s work. Plagiarism was apparently a natural outgrowth of the medieval copying process.

One such work deserves mention—because of its fine craftsmanship and because it was produced by a woman, Abbess Harrad of the Hohenburg convent near Strasbourg, in Alsace. Her encyclopedia, called the *Hortus Deliciarum* (Garden of Delights), was completed shortly before 1195 and is one of the finest examples of illuminated manuscripts ever produced.

With the return of wide-ranging scholarship during the Renaissance, along with the development of the printing press to produce multiple copies of books, encyclopedias by many authors became commonplace. Some of the most notable among these were one by the English clergyman John Harris, who was the first to arrange entries alphabetically (1704); one by the German Johann Zedler that was the first to include biographies of living persons (1732); and the *Encyclopédie* by the French scholars Denis Diderot and Jean D’Alembert (first part published in 1751), which was not only superb in terms of scholarship but was banned by the French government prior to the French Revolution because of its “subversive content.” A few words should also be said about the *Encyclopaedia Britannica* that first came out in the form of a series of pamphlets (a hundred installments) between 1768 and 1771. These pamphlets could be stitched together later and bound into three leather-covered books. The *Britannica*, which has since been published in many editions, established a form that has been followed by many encyclopedias—extensive



“In the Time of the Ptolemies: The Alexandrian Library,” illustration by J. André Castaigne from *Harper’s Magazine* (May 1908). New York Public Library.

articles, some more than a hundred pages in length, on broad general topics. Modern encyclopedias are found in almost every language and are published in every advanced nation.

Accessing Information

The problem of finding an exact item of desired information among the mass of stored data is certainly not new, although today’s magnitude of data may be. More than 5,000 years ago the Assyrians tried to deal with this problem by inscribing notations on their clay information cylinders in characters so small they are almost unreadable. The Sumerians devised a kind of index to mark their clay tablets. But the concept of organizing information into useable categories and sub-categories only became popular during the sixteenth century. One of the prime movers in this was the English philosopher and statesman Francis Bacon, who attempted to arrange his comprehensive view of knowledge into logical sections and sub-sections that would be useful to any literate

person. Bacon’s method, published in a section of his *De Augmentis Scientiarum* (1623), was consulted and somewhat utilized by a number of persons who in later years compiled encyclopedias, and it was highly praised by Diderot in his *Encyclopédie*. The poet and essayist Samuel Taylor Coleridge (1772–1834) also tried to encompass all human knowledge in a carefully structured design intended for an encyclopedia that was never completed. Coleridge deplored the alphabetical arrangement in some of the more popular encyclopedias of his day because such an arrangement was only “determined by the accident of initial letters.”

Disorganized knowledge is of almost as little value as no knowledge at all, and therefore every library has needed some system by which to arrange the variety of books. President Thomas Jefferson, for his own library, adopted the system advocated by Francis Bacon. A method still in use in many libraries around the world is that developed by the American librarian Melvil Dewey (1851–1931). This Dewey decimal system divides books into ten main categories, each represented by a three-digit number ranging from 000 to 999, with each of the ten groups further divided into more specialized fields by subsequent numbers following a period.

All the storage and recovery systems of the past have now been dwarfed by digital computers and hypertext. Developed in 1944, the first digital computer, called Mark I, was a massive machine controlled by a series of mechanical and electrical devices. It bore little resemblance to the desktop and laptop machines of today, and its primary use was for rapid mathematical computations. Within a few years the storage capacity of computers grew at an astounding rate so that today virtually anything that can be digitized (represented by a discrete set of its points) can be stored on a computer—words, images, sounds, and more. The massive memory modules on large mainframe computers now have the ability to store all the recorded knowledge of all the libraries in the world in a single location. By March 2007, according to *The New York Times*, the popular computer web browser, Google, had digitized

one million out-of-print books, and by 2009 it had digitized about six million. Anyone with a computer can access any or all of these books from their own living rooms.

Such an overload of information would be impossible to manage were it not for use of hypertexting and the rapid indexing ability of computers. Hypertexting is the method by which certain words in text displayed on a computer are marked (hyperlinks) so that a reader can, with a keypress sequence or mouse click, immediately access similar occurrences of that text within other parts of the document and even in other documents. The computer's indexing ability allows a user to immediately locate specific words or phrases in any displayed text by merely typing what is wanted in a "find box."

Thus the ability of human beings to store and recover the knowledge they acquired has grown

from simple memorization methods through written documents and books to complex computer storage systems that no one could have imagined fifty years ago.

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See also Dictionaries and Encyclopedias; Libraries

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Initiation and Rites of Passage

Societies use rites of passage to acknowledge the transitions individuals undergo throughout life—from childhood to puberty, for example, or the induction into a particular group. Such rites vary widely from culture to culture over time. In the context of world history the patterning of rites of passage is well illustrated by the adolescent initiation rite, perhaps the best-studied instance of a rite associated with a life transition.

The term “rite of passage” refers to any ritual that marks a transition in the life of an individual from one state or status to another. All human beings experience a series of such transitions in the course of a lifetime. Transitions can reflect biological or maturational progressions. So, for instance, birth marks the maturational transition from existence within the womb to life in the outside world, puberty marks the maturational transition from sexual immaturity to sexual maturity, and death marks the maturational transition out of the realm of the living. Individuals may also experience transitions in educational, occupational, legal, or social status, in-group membership, and role assignment. Graduation from school, certification into a profession, marriage, the shift to a new social class, acceptance into a fraternity or sorority, and parenthood are all examples of such transitions. Human societies tend to mark such life transitions with rites of passage. Baptisms, naming ceremonies, hazings, bar mitzvahs, coming-out balls, graduation ceremonies, induction rituals, weddings, and funerals are examples of rites of passage. A ritual that has elements of a rite of passage may also simultaneously serve other purposes. So,

for example, a marriage may mark the transition of the prospective spouses from the status of single to married and also promote fertility of the couple.

Structure of a Rite of Passage

Rites of passage are found in every known human society, past and present. Additionally, these rituals tend to share certain broad structural features in common. Thus, any rite of passage typically begins with a formal separation of the transitioning individual from the old state or status. The person then remains for some period of time in a marginal or transitional state divorced from both past and future statuses. Finally, in the incorporation phase of the rite, the transitioning individual enters into the new state or status. The substantive details of a specific kind of rite often symbolically mirror the nature of the specific transition that it is marking. For example, a birth ceremony, which celebrates the entrance of a person into the world, is likely to emphasize the incorporation phase of the rite, while in a funeral ceremony, which marks the departure of the individual from the world, the separation features of the ritual might be elaborated. Further, the content of a rite may be a symbolic reference to some aspect of the transition that it is marking. So, an opening door may mirror the idea that the individual is entering a new status. Similarly, the incorporation of a person into some new status may be reflected in the acts of eating and drinking, themselves a kind of incorporation of sustenance into the body. The similarity in the overall structure of rites of passage across cultures dramatizes the striking historical uniformity in the way in which human societies negotiate life transitions.



Jewish marriage ceremony, Turkey (1862).
Lithography by Henry John Van-Lennep. New York
Public Library.

Universal Function of Rites of Passage

The fact that human beings across historical time and place mark life transitions in a similar way points to the likelihood that rites of passage may serve a similar purpose for the people who participate in them. The key to the historical and geographical uniformity characteristic of rites of passage may be found in the pan-universal nature of life transitions. In particular, transitions from one state or status to another have the potential to disrupt the smooth functioning of the community at large and the psychological functioning of the transitioning individual. For example, birth, marriage, and death can disturb the normal relationships among individuals in a family, community, and society. Rites of passage, then, are proposed to serve as the strategy devised by human societies to mediate whatever social upheaval and personal turmoil are associated with life transitions.

Variations in Presence of Rites of Passage

Differences are also apparent with respect to how life transitions are handled across cultures. Societies vary regarding which transitions are marked with rites of passage. Differences also occur from one time and place to the next with regard to the details of the rites and the degree to which they are elaborated. Rites may be more or less important, intense, or prolonged in one society as opposed to another. Such differences are in part accounted for by variations in certain identifiable features of a society. Salient among such features are population size and the degree to which cultural institutions are subject to change. Thus, rites of passage tend to be most elaborated in small-scale, more or less stable cultures. By contrast, in large societies characterized by technological innovation, rites are less prominent. Similarly, rites of passage take on more importance in cultures with a high degree of status differentiation, while rites are less important where status differences are underplayed. Rites are also more common in places where fine distinctions are made among people, for example, of different chronological ages, from various occupational groups, and so on.

Each of the trends described above is consistent with the idea that rites serve to manage disruptions that life transitions can generate. Thus, such disruptions are most likely, and likely to be most intense, in small societies where individuals interact with a small number of cohorts. This is because the position and behavior of any single person is maximally likely to affect others in such groups. Further, where stability in institutions and behavior is valued, change has maximum potential to threaten the group. In large groups and in groups open to change, by contrast, the status or behavior of any specific individual or class of individuals has less potential to threaten or actually affect the circumstances of the remaining members of the group. Further, in a society typified by change, as is the case in technologically innovative cultures, rites of passage become difficult to execute. This is because the transition phase of a rite

Initiation dances as they are performed on Sioeban, Sipoera Island, part of the Mentawai Islands, Indonesia. The spirit house at Oema is shown at bottom right. Photos by Paul Fejos. New York Public Library.



of passage includes quite specific content regarding the roles, rights, and responsibilities accorded to the individual entering into a new state or status. In a changing society, as the future is likely to be different from the past, the idea of incorporation into a new status with known roles and rules is compromised. Finally, where differences among groups are meticulously defined, membership in such groups may be more difficult to achieve, promoting the need for a rite of passage. Such a ritual would include tutoring of the individual in the detailed rights and responsibilities of the new state. It might also certify the person as a member in good standing of the new group, thus promoting acceptance of the initiate by already established members. In summary, the patterning of rites of passage from one place to the next, including differences in how rites are played out, is attributable to the nature of a society at a specific moment in history. As relevant features of a society change in historical time, so will the specific manner in which the society reacts to the inevitable life transitions of its members. As population grows larger, as it becomes characterized by innovation, and as it increasingly devalues status distinctions, rites are predicted to become less important to the culture.

Historical Trends

The societal features associated with the presence (or the absence) of rites of passage tend to follow an historical timeline *within* the culture in which they are found. So, any single society may progress from small to large, preindustrial to industrial, and stable to innovative. Societies have also been shown to progress from egalitarian to status-based and back to egalitarian. Thus, the lives of people living in simple societies, for instance those based upon a forging economy and people living in contemporary industrial societies, tend to be less constrained by issues of status than are the lives of people living in middle-level societies depending upon agriculture for their subsistence. This means that the presence and patterning of rites of passage will follow a predictable trajectory consistent with the historical timetable of a specific culture. But different societies will be at different points in the overall progression from simple to complex, small to large, preindustrial to industrial, and egalitarian to nonegalitarian at any given moment in history. This means that, at any point in historical time, different societies will employ and elaborate rites of passage differently.

Adolescent Initiation Rites

The connection between the patterning of rites of passage and historic context is well illustrated by the adolescent initiation rite, perhaps the best-studied instance of a rite associated with a life transition. The adolescent initiation rite is a ritual that mediates the shift of an individual from the socially recognized status of child to that of adult. Adolescent initiation rites, when they are adopted by a society, often take place at or around puberty. Although the adolescent rite is thus often linked to a physiological change, these rituals are understood to achieve their importance because they confer a new *social* status on the initiate.

Patterns

According to *Adolescence: An Anthropological Inquiry* (Schlegel and Barry 1991), adolescent initiation rites of some sort are found in roughly half of the societies around the world for which information is available. In societies with an adolescent rite, all young people must participate in the ceremony. Sometimes, a society will hold an adolescent initiation rite for only one sex, in which case only members of that sex take part as initiates. Members of the opposite sex may still act as participants in the ceremony. If both sexes undergo an initiation rite, the male and female rituals are held separately. Adolescent initiation rites are somewhat more commonly held for girls than for boys, perhaps because menarche is such a clear and unambiguous mark of sexual maturity, making it easier to establish an appropriate time for the female's transition to adult status. On the other hand, adolescent male initiation rites are usually more intense and dramatic than are those held for females, typically including as they do physical ordeals, events meant to induce fear in the initiates, and hazing.

Male adolescent initiation rites are most commonly found in Africa and the insular Pacific, while over half of the societies with female adolescent initiation ceremonies are found in Africa. African initiation

rites often include circumcision for boys and, less frequently, cliteridectomy and tattooing for girls. The vision quest, a kind of adolescent initiation rite, was traditionally found among some North American Indian tribes and might be undertaken by either sex. During such a quest, a young person spent some days alone in the forest fasting and waiting for a vision in which the supernatural would reveal to the boy or girl some information pertaining to the young person's future role in life.

Structure

The adolescent initiation rite follows the overall pattern of rites of passage more generally, whether it consists of a public ceremony, as is often the case in Africa, or an individual quest, as is found in indigenous North American groups. The boy or girl is initially separated from his or her former life. Symbolism may play a role in the separation so that, for example, the adolescent may be physically removed from the parent's household. The transition phase is at least in part a preparation for the adult role. The adolescent may be taught important traditions of the society as well as the skills that will be needed in the new status of adult man or woman once the transition is complete. Or the young person may gain important information about the direction that his or her adult life will take, as is particularly the case in the vision quest. The rights and obligations of adulthood will also be communicated in detail. Importantly, it is the older generation that is in charge during an initiation rite. The initiate's demeanor is of total subservience. This is the case whether the initiation rite is in the form of a public ceremony, as is often the case among African societies, or is an individual affair, as in the North American vision quest. During the final, incorporation phase of the rite, the initiate is reincorporated into the society as a whole. Usually, the initiate is also now recognized as a full-fledged adult by all other members of the group, although this is less universally the case at the end of a vision quest.



Variations in the Presence of Adolescent Initiation Rites

As is the case with rites of passage in general, adolescent initiation rites are more common in small-scale, preindustrial cultures. Societies with adolescent rites are typically homogeneous, with sparse or nomadic settlement patterns. Female initiation rites are found more often where people hunt, gather, or fish for a living, and where descent is traced either through females or through both sexes as opposed to males only, as established by V. R. Burbank (1997) in “Adolescent Socialization and Initiation Rites.” If husbandry is practiced, it is of pigs, sheep, and goats, and not larger animals. In general, female initiation rites are more frequent in what anthropologists term simple societies, that is, societies without class stratification, specialization of occupation, complex political hierarchy, private property, or individual inheritance rules. Male adolescent rites are found in

societies where gardening is the main form of subsistence and where descent is traced through males.

Functions

A number of functional explanations of adolescent initiation rites have been proposed. All of these explanations link the presence of adolescent rites to some specific feature of society in its historical timeline. Thus, the adolescent initiation rite is viewed as a technique of socialization that allows the young persons’ knowledge and mental outlook to be made compatible with some feature of his or her culture. Potential collisions between the youth and the society are thus minimized as the adolescent makes the transition to adulthood.

In keeping with this interpretation of the function of adolescent initiation ceremonies, the general association between rites of passage and status distinctions has been extended to an explanation of certain

A seventeen-year-old boy in ancient Rome receives a toga, traditionally worn only by adult male Roman citizens, as part of his rite of passage. New York Public Library.



These mysteries, like the Masonic rites, are ones parents and elders are sworn not to reveal to the uninitiated, which include all children. And so we [children] sought for signs. • **Anthony Hecht (1923–2004)**

patterns of male adolescent initiation rites in particular. The idea here is that, where societies emphasize distinctions between the sexes, male initiation rites, especially those including circumcision, will serve to underscore and maintain the distinction. Male adolescent initiation rites have also been interpreted as a strategy for creating solidarity among men in societies where close ties among males is important. The association between male adolescent initiation rites, horticulture, and moderate cultural complexity has been explained in this way, the assumption being that these societal features create the context for exclusive male organizations.

Rituals for adolescent females have similarly been linked to certain features of society, and especially to the place of women in a culture. Thus, the initiation rite for females has been explained as a way of dramatizing the transition from girlhood to womanhood when married couples traditionally live with or near the wife's family (matrilocal residence) and when women make an important contribution to the subsistence economy.

Educational Function

Whatever particular social structural features may account for the presence of adolescent initiation rites in different societies, all such rituals seem to also have one purpose in common, and that is the function of educating the young person. Initiates are given detailed instructions about their roles, responsibilities, and privileges as adults in the culture in which they live. They are also instructed in the culture's mythology and system of ethics. The manner in which the individual's adulthood life will be played out, as a result, is largely determined by the older generation.

The initiation rite among the Ndumbra of New Guinea illustrates the educational aspect of the ritual. In his study about adolescent initiation rites, Burbank (1997) describes how, in this culture, boys undergo a three-day initiation ceremony in groups of perhaps five or six initiates. Mothers dress and decorate their young sons, and a group of men then comes to collect each boy and take him into the forest. The mothers

pretend to protest. We thus see the separation of the boy from his old role as child dramatized in the ritual. The initiation proper consists of number of physical ordeals and humiliations and also intense instruction regarding the various taboos that must be observed by adult men in their culture as well as the consequences of nonobservance of the taboos. Upon completion of the rite, boys are viewed as true warriors and begin to live in a special house reserved for males. According to I. Hilger's (1951) study of the Chippewa, the educational aspect of the initiation rite is similarly illustrated by the Chippewa initiation rite for adolescent girls. In this indigenous North American Indian society, an adolescent female, at her first menstruation, is secluded for a number of days in a wigwam built by the girl herself. The isolation of the girl is due to the belief that, as a menstruating woman, she is dangerous to the community, who must be protected from her. But also, during her seclusion the girl is tutored by her mother on her future role as an adult woman.

Disappearance of Adolescent Initiation Rites

Wherever the adolescent initiation rite is found and whatever specific function it performs, it is the older generation that is in control of the ritual. The payoff for the young person is that, at the completion of the ceremony, the initiate is accorded full status as an adult. This is possible because adolescent initiation rituals tend to be found in small, stable, homogeneous societies. It is in societies of this sort that the adults have knowledge of moral dictates, community traditions, rituals, practical knowledge, and so on. Where a society is large, complex, heterogeneous, and rapidly changing, the knowledge residing in the older generation is less likely to be relevant to the younger person. Indeed, in such societies, adolescents may be left on their own to construct their own adulthoods, including what they will be, what they will believe, how they will behave, where and with whom they will live, what moral standards they will follow, and so on. This is the case, for instance, in industrialized societies, where initiation rites, if they exist at all, no longer

serve the function of educating the young person in his or her future role as an adult or of conferring adult status. The result of this is that young people may be unsure as to what the adult role entails when they have in fact achieved the status of adult. On the other hand, adolescents living in large, heterogeneous, changing societies also have a kind of freedom to pursue their own interests and develop their own talents that a young person living in a small, homogeneous, stable society does not enjoy. Sometimes, when the culture at large no longer provides a rite of passage to smooth over some life transition, individuals themselves may evolve their own rites of passage. The psychologist George Goethals (1967) has explained the male adolescent gang as an example of an attempt on the part of youth to map out their own roles and rules when the society no longer provides them guidelines.

Implications

The presence, importance, and elaboration of both rites of passage in general and adolescent initiation rites in particular are contingent upon certain features of a society, which have been described in this article. Thus, rites of passage in general, and certain kinds of these rites, are more likely to be found in some kinds of societies and less likely to be found in others. When a society changes, either by virtue of internal processes or as a result of external influence, rites of passage may become more or less prevalent. It is the place of a particular society *in its own historical trajectory* that seems to most influence how that society will negotiate the life transitions of their members.

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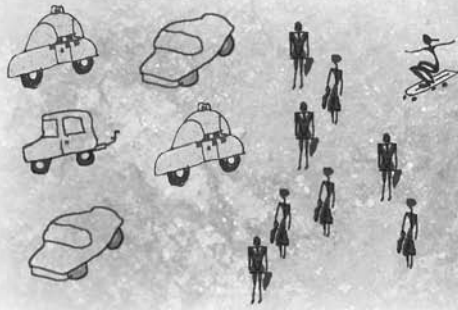
See also Adolescence

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International Court of Justice

The International Court of Justice (ICJ), located in The Hague, is one of six main organs of the United Nations. The ICJ's role is to settle legal disputes submitted by member (or other approved) states and to act as a legal adviser. Difficulties encumber the ICJ's function as a true international tribunal, most importantly because states party to a dispute must submit to the authority of the court.

Popularly known as the World Court, the International Court of Justice (ICJ) is one of the six main organs of the United Nations. As the U.N.'s principal judicial organ, it is the successor to the Permanent Court of International Justice, which was formally dissolved in 1946. The ICJ operates on the legal basis of Chapter VI of the U.N. Charter, which concerns peaceful settlement of disputes, and the Statute of the International Court of Justice, which is an integral part of the U.N. Charter. All 191 member states of the United Nations are ipso facto parties to the Statute, but nonmembers may become parties as well if approved by the General Assembly and the Security Council.

Located in The Hague, the Netherlands, the Court is composed of fifteen judges elected for nine years (five being elected every three years), with the possibility of being reelected by the General Assembly and the Security Council. Candidates for ICJ judgeships are nominated by national groups in states, and are elected as individuals regardless of their nationality, although no two judges may be nationals from the same state. By tradition, the permanent members of the Security Council (China, France, Russia, the United Kingdom, and the United States) have judges

elected to the court, although China had no judge during the period from 1960 to 1984, due to the controversy over Taiwan and China's representation in the U.N.

Since the ICJ functions as an institution that interprets and applies law, it possesses certain advantages over other methods of dispute settlement. For one, the Court operates on a continuous basis, so it is always prepared to deal with disputes. For another, it contributes to the development of a shared body of legal rules, both substantive and procedural, through which differences between states can be resolved. In this regard, both disputant states must voluntarily consent to appear before the Court, judgments are binding, and there is no appeal. Since 1946 the Court has entered 144 cases into its General List, many of which concerned disputes over contentious issues, among them land frontiers and maritime boundaries, territorial sovereignty, the nonuse of force, noninterference in the internal affairs of states, diplomatic relations, hostage-taking, the right of asylum, nationality, guardianship, rights of passage, and economic rights. Importantly, nearly all these decisions were accepted and implemented by the participating states. In fact, more states are submitting more cases to the ICJ than ever before, with fourteen on the court's docket in 2009. The ICJ may also render advisory opinions at the request of any of the other five organs of the United Nations, or the sixteen specialized agencies under the Economic and Social Council in the U.N. system. That competence is used to advise the requesting organ on the legal status of questions (as in the case put forward in 1985 by the U.N. General Assembly on the lawfulness of nuclear weapons) or to declare a legal opinion on the issue in

Photograph of the Peace Palace in The Hague, the Netherlands, taken for the sixtieth anniversary of the International Court of Justice in 2006.



question. Since 1946 the Court has rendered twenty-four advisory opinions on a wide variety of issues, such as admission to United Nations membership, reparation for injuries suffered in the service of the United Nations, the territorial status of South-West Africa (Namibia) and Western Sahara, the status of judgments rendered by international administrative tribunals, expenses of certain United Nations operations, the applicability of the United Nations Headquarters Agreement, the legality of the threat or use of nuclear weapons, and the lawful status of the wall being constructed by Israel to separate that state from Palestinian territory.

Certain difficulties still encumber the ability of the ICJ to function as a true international tribunal. Most important is that states party to a dispute must be willing to submit to the authority of the Court. In that regard, there still exists a fundamental problem of mistrust. Not all U.N. member states are mandated to appear before the Court. Some, including the United States, have reserved the right to make final judgment on whether the case involves their domestic jurisdiction, which means in effect that they can refuse to accept jurisdiction. The ICJ only retains that jurisdiction which governments are willing to grant to it in each case. Such a restrictive tendency diminishes the role that the World Court can play

in resolving major political conflicts between states. The uncertainty of legal rulings, a paucity of legislative institutions with the authority to adjust legal rules to the changing international milieu, and the lack of organized judicial procedures for the enforcement of judgments all contribute to the reluctance to use the ICJ as an instrument for international dispute settlement.

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See also Law, International

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International Criminal Court

The International Criminal Court, which came into existence on 1 July 2002, is a permanent tribunal created to prosecute individual defendants implicated in genocide, crimes against humanity, war crimes, and, in the future, the crime of aggression. The court is located at The Hague in the Netherlands, but it can sit and hear cases almost anywhere in the world.

The International Criminal Court (ICC) is the first global permanent court with jurisdiction to prosecute people for crimes of greatest concern to the international community: genocide; crimes against humanity; war crimes; and, after a definition is agreed upon, aggression. The ICC originated on 17 July 1998, when 120 countries met at the United Nations Diplomatic Conference of Plenipotentiaries on the Establishment of an International Criminal Court. Located at The Hague in the Netherlands, the ICC formally came into existence on 1 July 2002.

The creation of the ICC is the culmination of a decades-long effort to establish an international court with jurisdiction to try people for crimes against humanity. The legal definition of such crimes after World War II was part of the construction of new international legal structures, such as the United Nations, to preserve international peace and security and prevent upheavals capable of unleashing the horrors of modern warfare.

The tribunals designed to prosecute Nazi and Japanese war criminals established the precedent for the ICC. In singling out national agents for international responsibility, the organizers of the tribunals hoped that international criminal law would provide an incentive for high-ranking government officials

to refrain from devising and executing policies promoting atrocities or aggressive war. Additionally, the prosecution of war criminals provided incentive for low-ranking nationals to refuse to obey orders to carry out such policies. The tribunals were expected to contribute to preventing violent conflict between—and atrocities by—nations.

After the Nuremberg and Tokyo tribunals had completed their task, however, initial moves to establish a permanent international jurisdiction to succeed them faltered because of growing hostility between the Soviet Union and the United States. In the atmosphere of suspicion and obstructionism brought on by the Cold War, enforcement was left to national systems. Conflicts continued, and atrocities occurred, often with the acquiescence or direct involvement of one of the superpowers. Not until the 1990s did the international community again prosecute crimes against humanity with the 1993 creation of the International Criminal Tribunal for Yugoslavia (ICTY), and the 1994 creation of the International Criminal Tribunal for Rwanda (ICTR). However, like the Nuremberg and Tokyo tribunals, the ICTY and ICTR were created *ad hoc* (for the particular end or case at hand) with limited jurisdiction.

State Sovereignty

The ICC is designed to transcend politics because trials theoretically will be international, impartial, and nonselective. State sovereignty is protected because the jurisdiction of the ICC is restricted to a relatively small number of cases whose criminality is generally believed to be beyond dispute. Terrorism and drug-smuggling cases, involving matters subject to widely

Justice is a certain rectitude of mind whereby a man does what he ought to do in the circumstances confronting him. • Saint Thomas Aquinas (1225–1274)

different interpretations, remain under national jurisdiction. Yet, a number of nations, especially the United States, doubted that the ICC as created would be truly nonpolitical. Seven nations (the United States, China, Libya, Iraq, Israel, Qatar, and Yemen) voted against the establishment of the ICC, chiefly because of concerns over state sovereignty.

The most contentious question involving the ICC revolves around the level of independence that it possesses in regard to national courts and the United Nations Security Council. The ICC exercises jurisdiction only when national courts of the country in which the crime took place or whose citizens are accused are unable or unwilling to prosecute. The United States seeks an ICC that would be controlled by the Security Council under the reasoning that, as the sole remaining superpower, it was expected to intervene to maintain or restore international peace and security and to halt humanitarian catastrophes all over the world. U.S. fulfillment of that expectation would leave U.S. personnel vulnerable to the potential jurisdiction of the ICC. The United States fears that an independent prosecutor, motivated by anti-Americanism, might single out U.S. military personnel for persecution and that they would be denied the protections guaranteed by the U.S. Constitution.

Structure

Many legal authorities have challenged such fears, citing in particular the structure of the ICC. The court is composed of the presidency, the chambers, the office of the prosecutor, and the registry. The ICC does not provide for trial by jury; instead, it follows the civil law tradition of employing a panel of judges to decide questions of fact and law. Eighteen judges, serving staggered nine-year terms, are permanent members of the court and are elected by secret ballot at a meeting of the Assembly of the States Parties.

The judges elect the presidency and constitute the chambers. On 11 March 2003, the judges elected Judge Philippe Kirsch (Canada) as president, Judge Akua Kuenyehia (Ghana) as first vice president, and Judge Elizabeth Odio Benito (Costa Rica) as second

vice president. On 22 April 2003, the nations participating in ICC chose Luis Moreno-Ocampo of Argentina for a nine-year term as the first chief prosecutor. In his capacity as an Argentine attorney, Moreno-Ocampo has prosecuted Nazi war criminals, Chilean secret police officials, and Argentine leaders of the “Dirty War.” As of 2010 the president of the court is Sang-Hyun Song of South Korea, who was elected on 11 March 2009.

The last element of the ICC, the registry, is responsible for the nonjudicial aspects of the administration and servicing of the court, such as finance, translation, building management, procurement, personnel, as well as services, which are unique to an international court. The latter include administration of legal aid matters, defense counsel, court management, and a detention unit. In addition, in a revolutionary development, a victims and witnesses unit is set up within the registry. This unit enables victims to participate in legal procedures and claim compensation for the first time in the history of international criminal justice. Victims may include rape victims in need of trauma counseling, villagers in need of money to rebuild homes and businesses lost in fighting and, child soldiers who were forced into military service and who may have suffered great ordeals. During its brief existence, the court has received thousands of reports of violations sent by people and nongovernmental organizations from numerous countries around the world, most of which are outside the jurisdiction of the ICC. As of December 2009, three States Parties—Uganda, the Democratic Republic of the Congo (DROC), and the Central African Republic—have referred complaints to the court, while the U.N. Security Council has also referred the situation in Darfur, Sudan, a non-State Party. In respect to Uganda, five arrest warrants have been issued against leading members of the Lord’s Resistance Army. Three cases are being heard as result of investigations in DROC: *The Prosecutor v. Thomas Lubanga Dyilo*; *The Prosecutor v. Bosco Ntaganda*; and *The Prosecutor v. Germain Katanga and Mathieu Ngudjolo Chui*. The Central African Republic case, *The Prosecutor v. Jean-Pierre Bemba Gombo*, a former vice-president of DROC is at

the pre-trial stage. In regard to Darfur, Sudan, three cases are pre-trial: *The Prosecutor v. Ahmad Muhammad Harun* ("Ahmad Harun") and *Ali Muhammad Ali Abd-Al-Rahman* ("Ali Kushayb"); *The Prosecutor v. Omar Hassan Ahmad Al Bashir*; and *The Prosecutor v. Bahr Idriss Abu Garda*. Only Bahr Idriss Abu Garda has appeared voluntarily before the Court, the others, including Sudanese president Omar Al Bashir, remain at large.

As of late 2009, 110 countries had joined the ICC and a further 38 have signed but not yet ratified the Treaty of Rome. Those that have not signed include some the world's great powers home to the majority of our world's population, including China, India, Russia, and the United States.

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See also Law, International

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International Monetary Systems

Goods ranging from cowrie shells (in ancient societies) to cigarettes (in World War II prisoner-of-war camps) have circulated as generally accepted means of payment throughout history, but gold and silver predominated from the eighth century BCE. In the modern world, efforts to peg international currencies against a gold standard were thwarted by balance-of-payment deficits that caused exchange-rate instabilities.

Although the use of goods as a form of payment was accepted throughout history at certain times, ancient societies had already found that coins made from specified amounts of precious metals were more viable and convenient. Authors from Aristotle to Adam Smith noted that gold and silver had the advantages of being divisible, homogenous, and storable (not rusting or decaying through reaction with other elements). In addition, being scarce and costly to produce, gold and silver were highly valuable per unit of weight, so that only small quantities needed to be transported to make payments.

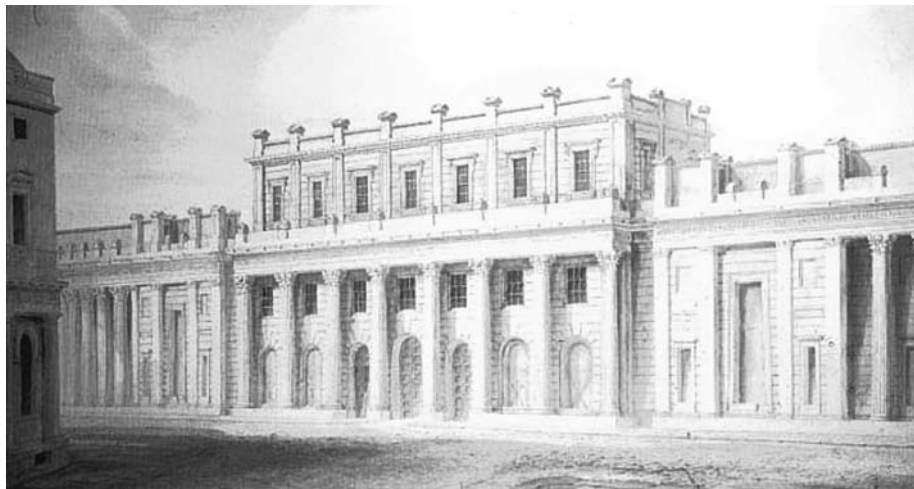
Beginnings

While merchants may have made the first coins, discs containing a specified amount of precious metal, states and cities in Anatolia (modern-day Turkey) and the Aegean coined silver and electrum (a mixture of gold and silver) from the eighth century BCE, with the earliest known gold coins issued in the sixth century by Croesus, king of Lydia in Asia Minor. Solon, in sixth-century Athens, introduced seigniorage, a margin of profit on coinage, by ordering 6,300 drachmae to be minted from each talent of silver, even though

the accepted standard of weights and measures equated 6,000 drachmae (60 minae) to a talent. For centuries, gold, silver, bronze, and copper coins of many rulers and cities circulated, trading externally at rates reflecting their varying metallic content and the changing relative values of the monetary metals. The seigniorage from minting coins with less than full bullion content repeatedly tempted rulers to profit from debasing the coinage, reducing the market value of their coins. In China, copper “cash” was coined, with silver ingots used for large transactions, and Marco Polo was startled to discover paper currency issued by the Chinese state in the thirteenth century CE.

Colonial Era through the Nineteenth Century

The inflow of silver from the newly conquered Spanish colonies of Mexico and Upper Peru (Bolivia) raised price levels and lowered the purchasing power of silver in Europe during the “Price Revolution” of the sixteenth century, but the outflow of silver from Europe to Asia to pay for spices and textiles in the late seventeenth century raised the value of silver. In 1717, Isaac Newton, as master of Britain’s Royal Mint, set the value of the gold guinea at twenty-one silver shillings, a mint price of 3 pounds, 17 shillings, 10.5 pence per ounce of gold (fifteen-sixteenths fine) that was maintained until 1939. Newton overvalued gold and undervalued silver, so, in keeping with Gresham’s Law that bad money drives out good, only gold coins circulated, while silver coins were melted down into bullion. In 1752, David Hume expounded the theory of the specie-flow mechanism underlying the gold standard: if international trade



This nineteenth-century print shows the south facade of the Bank of England in London as rebuilt by Sir John Soane.

and payments were unbalanced, gold bullion would flow from the country with a trade deficit to the one with a trade surplus, reducing the money supply and price level in the deficit country and increasing the money supply and price level in the surplus country. The changing relative price levels would reduce the net exports of the surplus country and raise those of the deficit country until the balance of payments surpluses and deficits were restored to zero. Bank notes were convertible into coin on demand, and coin or bullion was used for international settlements, with a bank raising its discount rate when a gold outflow threatened the adequacy of its reserves. By the nineteenth century, London was established as the world center of finance and commerce, and the Bank of England as the key institution of the gold standard.

The conversion of Bank of England notes was suspended from 1797 to 1821, and the British government paid for its role in the Napoleonic Wars through inflationary finance, with large increases in national debt stock in the hands of the public and of the Bank of England, depreciation of inconvertible Bank of England notes against gold, and a higher price level. Restoration of convertibility at the old parity required a sharp deflation, but was followed by nearly a century of growing world trade and largely stable exchange rates (although the United States was on an inconvertible “greenback” paper standard from the Civil War until the start of 1879). The Latin Monetary Union, a pioneering French-led effort at European monetary unification begun in 1865, linked the French, Italian, Belgian, Swiss, Spanish, and Greek currencies

to a bimetallic standard, but foundered in the face of British and German opposition and the shifting relative price of gold and silver.

Twentieth Century and Beyond

World War I disrupted the gold standard, and was followed by spectacular hyperinflations and exchange depreciations in Central and Eastern Europe, with the German mark stabilized in 1924 at one trillionth of its prewar gold value. John Maynard Keynes presciently criticized Britain’s return to the gold standard at the prewar parity in 1925, warning that the deflation of prices and wages required to remain internationally competitive at a higher exchange rate would exacerbate unemployment. Following the Wall Street crash of 1929, the fixed exchange rates of the gold standard transmitted deflation and depression from country to country, with Britain forced off the gold standard in 1931 and the United States devaluing and ending gold conversion of the dollar in 1933. The Great Depression of the 1930s was a period of fluctuating exchange rates, protectionist tariffs, restrictions on capital flows, and shrinking world trade, a retreat from globalization.

At the end of World War II, the international monetary conference at Bretton Woods, New Hampshire, guided by Lord Keynes and Harry Dexter White, devised a system of fixed exchange rates, adjustable in case of fundamental payment imbalances, with an International Monetary Fund (IMF) to lend foreign exchange, and with the U.S. dollar as the key reserve currency. The dollar was pegged to gold at

Nations have recently been led to borrow billions for war; no nation has ever borrowed largely for education. Probably, no nation is rich enough to pay for both war and civilization. We must make our choice; we cannot have both. • **Abraham Flexner (1856–1959)**

\$35 per ounce, but only other central banks could present dollars to the Federal Reserve for redemption in gold. IMF lending, being conditional on following policy advice designed to end payment deficits, caused friction between borrowing governments and the IMF. Although a few nations floated their currencies (notably Canada from 1950 to 1962), the pound sterling was devalued in 1949 and 1967, and centrally planned economies such as the USSR and China stood apart, the Bretton Woods system provided a stable framework for expanding global trade and investment flows from 1945 to 1973. Persistent U.S. balance of payments deficits undermined the Bretton Woods system, which was followed by a period of exchange rate instability. The Exchange Rate Mechanism, designed to stabilize exchange rates among European currencies, collapsed under speculative attacks such as that against the pound sterling in September 1992. The adoption of the euro as a common currency, initially by eleven European countries at the start of 1999 and growing to twenty-two by early 2010, with a single monetary policy conducted by the European Central Bank, was intended to eliminate the possibility of such speculative attacks, while leaving the euro

floating against the U.S. dollar, Japanese yen, and other currencies.

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International Organizations

Defined in the strictest sense, international organizations count countries and states, not individuals, as their members, and play some official role in the international system, most notably as providers of collective security.

An international organization derives its membership from (or operates in) a number of different countries and plays some official role in the working of the international system. A definitional example of an international organization is the United Nations (U.N.). The U.N. has its own staff, rules, and headquarters; its members are countries rather than people, and almost all countries in the world are members. In the international system, the U.N. was intended to function in several official roles, especially as a provider of collective security.

There is no clear line between what can be considered an international organization and what cannot. Organizations such as the U.N. that are created by treaties among countries and that count countries as their members clearly fit the definition. Multinational corporations and other for-profit enterprises, even though there are ways in which they fit the definition, are generally not considered international organizations as such. Not-for-profit organizations that have individuals rather than countries as their members, often referred to as nongovernmental organizations (NGOs), are in the gray area of the definition. For the purposes of this article, not-for-profit organizations that are clearly international in nature and that play a semiofficial role in the international system, such as the International Committee of the Red Cross, are included in the definition.

War, Peace, and International Organizations

International organizations affect issues of war and peace in a number of different ways. Some organizations are designed to enhance collective security. Others work to prevent conflict by ameliorating some of the conditions that lead to war, such as poverty or ethnic conflict. Still others attempt to alleviate the suffering caused by war once a conflict has already begun. And finally, some international organizations, called alliances, are designed primarily to help their members win wars. The first two categories of activity, collective security and ameliorating the conditions that lead to war, tend to be undertaken by the U.N. and affiliated organizations. The third category, alleviating suffering, is undertaken both by U.N.-affiliated organizations, such as the Office of the United Nations High Commissioner for Refugees, and NGOs, such as the Red Cross. The fourth category, alliances, comprises organizations that are intergovernmental but are not part of the U.N. system.

At this point we should distinguish between collective security organizations and alliances. Alliances consist of two or more countries that agree to aid each other in time of war. This can be a purely defensive arrangement, whereby parties agree to come to each other's aid if attacked by third parties, or offensive, an agreement to attack a third party. Either way, a key feature of an alliance is that it is exclusive, meaning that it is designed specifically to work against the interests of nonmembers. International alliances have been around for millennia; they are, for example, featured prominently in Thucydides's account of the Peloponnesian War in the fifth century BCE.



The “The United Nations Fights for Freedom” poster (1941–1945) depicts the flags of countries that pledged to support the Allies during World War II. National Archives.

But they have traditionally not been organizations as such. They have made agreements, but those agreements have generally not created new special-purpose bureaucracies. The alliance as an international organization is a phenomenon of the second half of the twentieth century, beginning with the creation of the North Atlantic Treaty Organization (NATO) and the Warsaw Pact.

Collective security organizations differ from alliances in that they are inclusive. Such organizations create rules for maintaining the international peace and hold their members to those rules. If a member country breaks the rules in a way that is a threat to international peace, then all of the other members are supposed to take action to counteract the threat. In other words, while alliances aim to defend their members from threats from outside of their membership, collective security agreements aim to defend their members from threats that

originate within the membership. As such, collective security organizations work best the broader their membership. The U.N. was formed primarily as a collective security organization, and the U.N.’s Security Council was designed as its primary enforcement mechanism.

A History of Collective Security

The first attempt at a collective security agreement in the modern state system was the Concert of Europe, an agreement reached in the aftermath of the Napoleonic Wars by the great powers of the time to manage European affairs through annual meetings rather than through alliances and wars. This agreement did not really create an international organization, however, because it did not create a new bureaucratic structure to oversee the collective security system. In any case, the Concert was not terribly successful. By the mid-1820s it had ceased having a major impact on European politics, and by the middle of the nineteenth century had ceased to exist altogether.

The next major international attempt at collective security was the League of Nations, created in the aftermath of World War I. The League was clearly an international organization; it had its headquarters in Geneva, Switzerland, with a permanent Secretariat—its own bureaucracy. The creation of the League was driven primarily by the U.S. president Woodrow Wilson, who felt that a primary cause of World War I had been the politics of secret alliances that dominated European international relations for half a century before the war. He wanted to create an organization that brought countries together to discuss their problems in a public forum, thereby getting rid of closed-door international negotiations. He also wanted to create an organization that guaranteed the peace, thus getting rid of the need for alliances.

The League, like the Concert, was not very successful. It was hamstrung from the outset by the fact that the United States never joined. Despite the fact that President Wilson was the driving force behind its creation, the U.S. Senate did not ratify U.S. membership in the organization. It was also undermined

by its own decision-making structure. The League worked on a one-country, one-vote basis, so a group of small, militarily weak countries that constituted a majority could pass a resolution calling for military action even if the countries voting for the resolution were not strong enough collectively to enforce it. Since the League itself had no military capabilities, it counted on member countries to enforce its resolutions, and those members tended to resort to pass-the-buck arguments—they might want something done, but they wanted some other country to actually do it.

The League did not survive World War II. It was replaced by the U.N., which was created in 1945. The U.N. undertakes a wide range of activities that cover most areas of human endeavor, but its core design function is as a collective security organization. It began with two advantages over the League of Nations. First, all of the major powers were members. And second, it was designed to try to get around the buck-passing problem. The U.N. has a General Assembly that, much like that of the League, passes resolutions by majority vote. But the General Assembly is not tasked to enforce the rules of collective security. In the U.N.'s design, a new body called the Security Council was created for that task. The Security Council has only a few members at any given point in time (originally eleven, now fifteen) and is always in session, so that it can deal with threats to international security quickly and efficiently. The membership includes those nations that were the five greatest military powers at the end of World War II, and it can only authorize the use of force if all five agree.

The U.N. and International Peace and Security

The system never really worked as planned. The U.N. authorized the U.S.-led intervention in the Korean War in 1950, but after that was not able to successfully intervene in Cold War disputes because both the United States and the Soviet Union had a veto in the Security Council. In 1956, in response to the

Suez Crisis, the Security Council invented a new role for collective security, called peacekeeping. This refers to the use of troops authorized by the Security Council to oversee the implementation of cease-fires after conflicts, a more modest role than the enforcement of international security but one that the U.N. has engaged in successfully for decades.

The U.N.'s role in issues of war and peace underwent a renaissance in response to the end of the Cold War around 1990. Freed from the constraints of U.S.-Soviet confrontation, the Security Council was able to authorize more ambitious missions than it had been able to for three decades. These missions, in places like Iraq and the former Yugoslavia, went beyond peacekeeping, and were much like traditional collective security missions. The U.N. also got involved in what came to be called peace building—missions designed to create working political and legal systems in places where the absence of such systems was causing, or was caused by, conflict. Examples of this sort of activity in the 1990s could be found in the former Yugoslavia, in Cambodia, and in East Timor. The renaissance in collective security activity lasted little over a decade. It came to be threatened both by the invasion of Iraq, by increased unilateralism on the part of the United States, and increased foreign policy assertiveness by two other permanent members of the Security Council, Russia and China. The current direction of evolution of the role of the U.N. in matters of international peace and security is unclear.

Beyond Collective Security

The Security Council is aided in enforcing collective security by a variety of additional organizations. Some prevent conflicts by settling disputes by arbitration, such as the International Court of Justice (ICJ). Others are designed to do on a regional basis some of the same things that the U.N. does globally. These include the African Union (AU), the Organization of American States (OAS), and the Organization for Security and Cooperation in Europe (OSCE). These organizations range in age; the OAS was created in



1948, whereas the AU came into being in 2002, although it incorporates organizations that had been created several decades earlier.

The role of international organizations in ameliorating the suffering caused by war goes back as far as their role in collective security. The first such organization was the Red Cross, created in 1863 to help wounded soldiers and oversee the treatment of prisoners of war. Although the Red Cross is a nongovernmental organization, it has a semiofficial capacity in the international system. For example, its role as the monitor of the treatment of prisoners of war is written into the Geneva Conventions on the rules of war. Other ameliorative organizations are intergovernmental, such as the Office of the United Nations High Commissioner for Refugees (UNHCR), which traces its roots back to the appointment by the League of Nations of the first High Commissioner for Refugees in 1921. The UNHCR currently oversees relief efforts to more than 20 million refugees worldwide.

Other international organizations, most of which can trace their roots back to the 1950s, help countries to recover more generally from the effects of war by helping them to develop their economies and basic services; these include the United Nations Development Programme (UNDP) and the United Nations Children's Fund (UNICEF). The efforts of these organizations are augmented by a wide range of nongovernmental organizations dedicated to improving conditions for the most needy internationally.

Outlook on the Twenty-First Century

International organizations have been active for more than a century in promoting international peace and security. The effectiveness of organizations focusing on collective security has varied over time. It increased in general in the decade following the 1991 end of the Cold War, but has waned somewhat since then. The direction of change in effectiveness in the coming decades will help to determine patterns of war and peace in the twenty-first century. The effectiveness

of organizations focusing on ameliorating the negative effects of war has grown consistently, particularly since the end of World War II, and is likely to continue to grow.

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See also International Court of Justice; International Criminal Court; Red Cross and Red Crescent Movement; United Nations

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Internet

The impetus for computers to communicate grew during the 1950s when the U.S. military sought technologies to protect air space. From the early days of packet switching (a means of bundling separate “packages” of information to transmit them more quickly), pioneers in the field of communications engineered increasingly complex computer networks—resulting in the Internet, used in 2010 by over 1.73 billion people worldwide.

During the 1940s and 1950s, calculators (Electronic Numerical Integrator and Computer, ENIAC) and subsequently computers (UNIVersal Automatic Computer, UNIVAC; Whirlwind) were heavy, imposing, and costly machines reserved for a handful of specialists, and these machines did not communicate with each other. In the space of less than forty years, the world of computing, which was still centralized during the 1960s, entered the public arena and enabled data, sound, and images to be circulated across the globe. This networked information and communication society is embodied by the Internet, a global network interconnecting a growing number of computer networks of all sizes. During the period between the launch of project in the second half of the 1960s by the Advanced Research Projects Agency (ARPA) in the United States (which involved a few American universities) and the growth in Internet users to in excess of 1.73 billion as of 2010, the applications, players, and issues have evolved and taken on a global dimension.

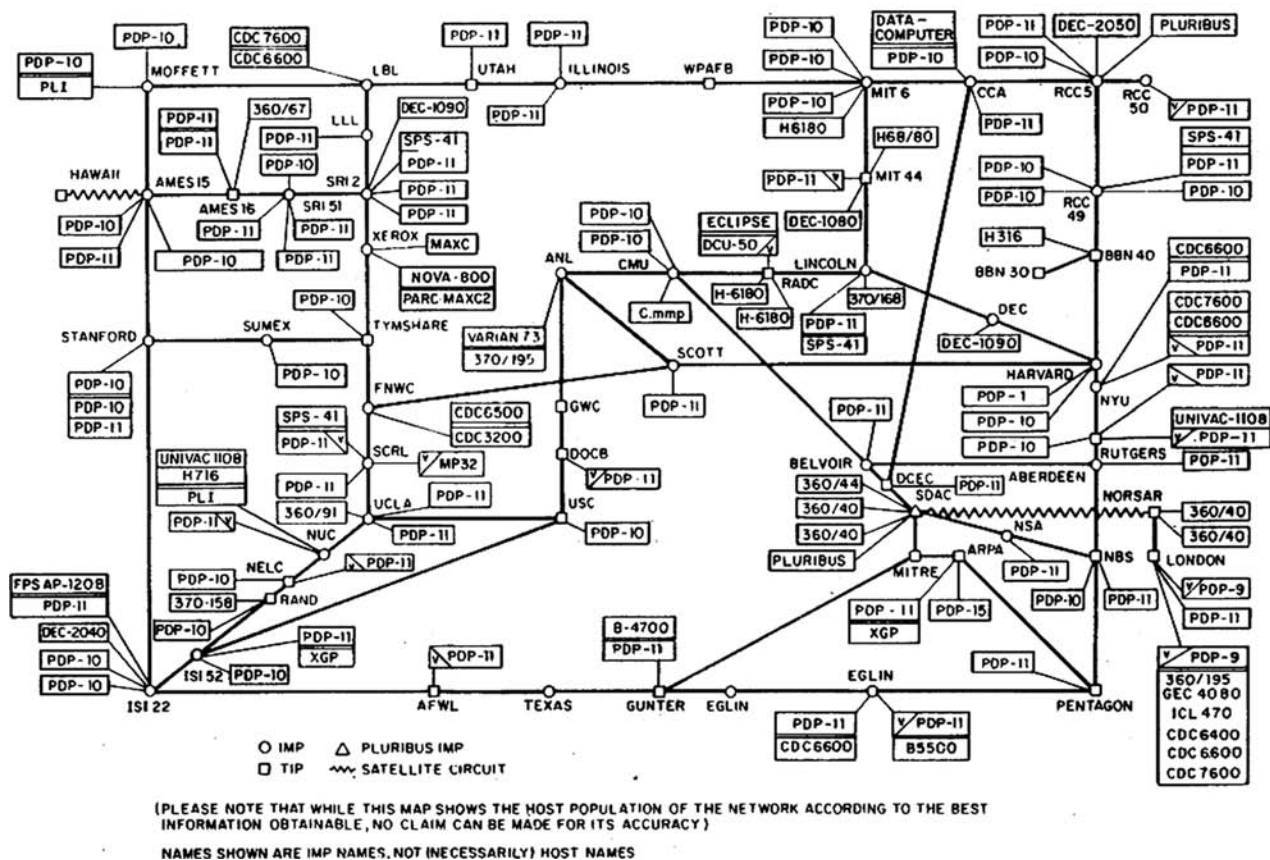
From ARPANET to the Internet: The American Genesis

Even though computing power was a costly element, the need to place this rare resource within the reach

of as many people as possible emerged very quickly in the history of computing. This rationale of maximizing the utilization of machines was rapidly joined by other motivations for connecting computers to each other. From data sharing for management purposes to reservation systems and command and control, the 1950s saw the first developments, particularly in the United States, in networks that put computers in contact with each other—the military naturally leading the way with large-scale projects such as the air defence programme SAGE (Semi-Automatic Ground Environment). The goal of this program was to give the U.S. Air Force a system that would enable it to detect, identify, and intercept any air threat to U.S. territory. To achieve this, a range of devices, radars, computers, planes, and vessels needed to be connected via a telecommunication system using telegraphic and radio-relay links. The SABRE (Semi-Automatic Business Research Environment) airline reservation system was also, between the 1950s and 1960s, an essential stage in this evolution, demonstrating the myriad possibilities that these networks offered for commercial activities. These systems incorporated the notion of “time sharing” (which allowed computers to process tasks in less time, users to access computers directly without necessarily going through an operator, and a more “interactive” form of computing), but they went beyond this to deliver a highly innovative usage of computing. They ushered in the era of On Line Transaction Processing (OLTP) and the use of devices for accessing a complete network of computers.

Occupying a middle ground between telecommunications and computing but primarily developed by computer scientists, new concepts emerged between the 1950s and 1960s. This was the case with packet

ARPANET LOGICAL MAP, MARCH 1977



ARPANET logical map, circa 1977. The goal of the ambitious ARPANET project was to build a network of computers based on packet switching.

switching (dividing messages into packets, transmitting the packets individually, and reassembling the messages when they arrived at their destinations), of which three strands can be identified. The first is a military concern and is found in the work of Paul Baran, who from 1959 at the Rand Corporation studied the possibility of creating a communication network incorporating redundancies that would make it virtually immune to enemy attacks. To this end, he proposed a project to the U.S. Air Force based on the digitization of information and its transmission in blocks or packets of information of an identical size. The project was never carried out, but the ideas on which it was based were nevertheless fairly widely disseminated. Professor Leonard Kleinrock was at the same time working independently on a network architecture. In July 1961, while at the Massachusetts Institute of Technology, he published a paper on packet switching

theory, followed by a first book on the subject in 1964. Shortly thereafter, Donald Davies of Britain's National Physical Laboratory (near London) devised a project that was technically fairly similar in its concept but focused on interactiveness rather than security; he developed a packet switching network project beginning in 1968. These ideas found their way into the project developed at the Advanced Research Projects Agency (ARPA) from the end of the 1960s. This agency, created in 1958 against the backdrop of the Cold War, was a response to a double challenge—externally, the space race (launch of Sputnik by the Russians in 1957) and, internally, the reorganization of military research.

Going much further than what was envisaged under the SAGE program, the agency planned the creation of a Command and Control network, which was officially approved in the spring of 1967. The aim was to implement a network allowing the interconnection

of incompatible computers and software. At the end of 1967, ARPA concluded its first contract with the Stanford Research Institute to define the future network's specifications. Elmer Shapiro was the main architect behind this. Lawrence Roberts took charge of the project at ARPA within the Information Processing Techniques Office. In 1968, the Network Working Group was founded, the first director being Stephen Crocker, and a fully-fledged team was formed to create the ambitious ARPANET project to build a network of different computers based on packet switching. Pioneers in the field of networks such as Leonard Kleinrock, former colleagues of Lawrence Roberts at UCLA, and several students, including Vinton Cerf and Jon Postel, contributed to its creation. Robert Kahn entered the picture in 1968 through Bolt, Beranek, and Newman (BBN), a consulting firm based in Cambridge, Massachusetts, which won the contract with ARPA to create IMPs or Interface Message Processors, which made communication between different computers possible. In 1969, the network already had four connections between universities in the United States, the first being established with UCLA, the other centers being the Stanford Research Institute; the University of California, Santa Barbara; and the University of Utah.

The program strongly emphasised the twin benefit of the initiative: creating a full-scale test of what a computer network could be and, at the same time, giving university laboratories and the military a tool that was already pre-operational. The annual budgets ran into several millions of dollars. Although, following a call to tender (for contracts) the development of links between the various centers was entrusted to BBN, issues pertaining to communication between the centers and the network were specifically tackled by the centers. Academics were very closely involved in defining the network. In the summer of 1968, Elmer Shapiro held a seminar attended by the programmers of the various centers due to connect to the future network. This would prove decisive. Because the project did not have to factor in any pre-existing network infrastructure, the researchers attending were able to engage in highly innovative approaches

and start work on a practically blank page. An extensive theoretical approach therefore became a part of the debates, not out of scientific "ambition" but simply as a way of laying the foundation for a radically new field. The Request for Comments (RFC) is testament to the researchers' creativity. This was initially comprised of meeting notes. After their formalization by Steve Crocker in 1969, they were distributed on paper, and then made accessible online following the creation of File Transfer Protocol. The RFC were released to speed up exchanges of ideas and create a system of "open documentation" and works in progress.

Progress would thereafter prove fairly rapid, with the first major test successfully conducted in October 1971 during a meeting held at MIT. Just over four years after its launch, the project, now called ARPANET, had reached its goal. In 1972, the International Conference on Computer Communication saw the first public demonstration, organized by Robert Kahn. In 1974, together with Vinton Cerf, Robert Kahn published an article that defined a protocol with a decisive role in the history of the Internet, TCP, which would then become TCP/IP (Transport Control Protocol and Internet Protocol) and replace the first protocol of ARPANET, NCP (Network Control Program). The idea was to be able to connect and allow communication between numerous independent networks featuring a different design, and even radio or satellite networks using packets, which NCP did not allow, thus paving the way for the "network of networks".

TCP/IP was not introduced at ARPANET until 1983. The military portion then separated from the network and was called MILNET, while the university portion took advantage of research efforts by the National Science Foundation to connect its powerful computers there and merged with the NSFnet network before calling itself Internet.

European Initiatives

European researchers did not remain isolated from the explorations into general networks and packet



switching from the beginning of the 1970s. They felt that general networks could act as an alternative faced with the risk of the U.S. industry, particularly IBM (International Business Machines), taking a stranglehold on the European market and on data networks. By offering network architectures that only supported their own machines (Systems Network Architecture by IBM, Decnet by Digital Equipment Corporation, etc.), manufacturers restricted the ability of users, administrations, and businesses to connect machines made by different manufacturers. Incorporating a variety of machines into networks, as ARPANET proposed, emerged as a way to secure a place for computers made by national manufacturers alongside the U.S. industry's machines. The intention was also to prevent a gap widening between the U.S. and European countries in research and in a cutting-edge sector with promising prospects. ARPANET's demonstration in 1972 meant that the Americans were joined by researchers from the other side of the Atlantic such as Donald Davies of NPL and John Wedlake of British Telecom; Remi Després from the telecommunications world and Louis Pouzin of the National Institute for Research in Computer Science and Control (IRIA) in France; and Italy's Gesualdo LeMoli and Kjell Samuelson of the Swedish Royal Institute. The French and British were heavily involved in initial explorations in packet switching. Experiments were set up during the 1970s both in research centers that focused more on computing (the NPL's Mark I or Cyclades at IRIA) and telecommunications laboratories (Experimental Packet Switching Service at the British Post Office, Transpac in France). In 1971, the ARPANET network had already linked fifteen centers in the United States when the Cyclades project was launched at IRIA (later to become INRIA, Institut national de recherche en informatique et automatique) under the supervision of Louis Pouzin. During the 1970s, his team developed a general network based on the principle of datagrams, which were included in the TCP/IP protocol in 1974. The team submitted proposals as part of the International Network Working Group headed by Vinton Cerf and also had direct dialogue with the ARPANET team (consulting

contract with BBN for example). Meanwhile, in 1973 the British completed a link between the ARPANET network and University College of London, thanks in particular to the efforts of Peter Kirstein.

Alongside national efforts, from the 1970s the Europeans teamed up to implement transnational networks such as European Informatics Network and Euronet, and their studies intensified during the 1980s, resulting in the creation of a bona fide network of European researchers. At the time there, however, was a divide between the world of computing and the world of telecommunications, which instead of datagrams preferred a technique based on virtual circuits (X25 protocol adopted in 1976), as well as a search for separate national solutions (JANET in the United Kingdom, DFN in Germany, SURFNET in the Netherlands, etc.). Nevertheless, in the mid-1980s, European researchers came together with the aim of adopting the OSI technology. Work on the Open System Interconnection began in 1977 at the International Organization for Standardization (ISO); its seven-layer model for a general network was officially adopted in 1984, but the program was abandoned during the 1990s. Although from 1986 the Europeans proposed creating a European research infrastructure called Cosine, based on OSI, in 1990 they had to acknowledge the effectiveness of TCP/IP, at a time when the Internet was growing in Europe thanks to the EUNET network. Since 1988, this had drawn on the Unix operating system and TCP/IP, and its main partners in Europe were the Royal Institute of Technology in Stockholm, the National Research Institute for Mathematics and Computer Science in Amsterdam (CWI) and France's INRIA. At the same time, experiments were conducted into telematics aimed at the general public (Prestel in Britain, Bildschirmtext in Germany); the dissemination of these interactive systems could have been extensive and enduring, as shown by the Minitel technology developed by the French telecommunications administration. But some national networks had already adopted the Internet technology, including Scandinavian countries and the Dutch network SURFnet. From 1988, a European nonprofit organization called



Cords = connectivity: wires plug in to an Internet hub. Photo by Daisy Durham.

Réseau IP Européen (RIPE) was tasked with allocating Internet addresses in Europe. The following year, Europe was the stage for an innovation that became decisive for the growth of the Internet: the creation of the World Wide Web. Although the Internet and one of its most famous applications should not be considered one and the same, the invention of the Web marked a turning point. Its history began in 1989, when Tim Berners-Lee, a researcher at CERN (European Organisation for Nuclear Research) in Switzerland, had the idea of creating operating software that was adapted to researchers' needs in order to create a hypertext documentation system. The software that enabled the navigation known as World Wide Web was ready at the end of 1991, while browsers such as Mosaic by Marc Andreessen (of the University of Illinois), Navigator by Netscape, and Internet Explorer by Microsoft were in development. In 1994, the World Wide Web Consortium (W3C)

was created at the Massachusetts Institute of Technology. France's INRIA was the European host of the W3C in 1995. One of its researchers, Jean-François Abramatic, became its chairman from 1996 to 2001, before taking up a position in 2003 at the ERCIM (European Research Consortium for Informatics and Mathematics), which comprised representatives from around thirty European countries. The Internet then made the transition from a network of researchers to a public network and, at the start of the twenty-first century, there were already more than 105 million European Internet users, albeit slightly fewer than in the United States.

A Global and Public Expansion

During the 1990s and even more so during the 2000s, the Internet set out to win over a public owning an ever larger number of personal computers,

The Internet is becoming the town square for the global village of tomorrow. • **Bill Gates (b. 1955)**

and its growth reached every region of the globe. Although the Web directed the Internet towards the general public, other applications helped its expansion, such as the success of emails (from 1975 ARPANET had around a thousand email addresses and the first version of SMTP, Simple Mail Transfer Protocol, was proposed by John Postel in 1982) and the huge success of a retail space on the Internet at the end of the 1990s. Sites such as eBay and Amazon contributed to the e-commerce boom; in 1998 the Geneva agreements confirmed the initiative backed by U.S. president Bill Clinton stating that customs duties should temporarily not apply to commercial transactions conducted on electronic networks. The organization of information searches, ranging from the service provided by Netscape, to the Google model, and portals—Yahoo!, AOL, MSN—also played a key role. The stock market flotation of Netscape in 1995, followed by other start-ups (eBay, Amazon) and the increase in the value of the NASDAQ (technology shares) marked the end of the 1990s, before the speculative bubble burst in 2000 (stock market crisis).

More recent applications have altered both usages and the Internet model. In 1999, fostered by broadband and emerging alongside Napster, was the deployment of peer-to-peer (P2P, a class of applications dedicated to the sharing of resources between peers). P2P offers a mode of operation different to that of the client-server model: the data exchanged are spread across the machines of all participants; each person can download files from any machine connected to the network and make their own files available to others.

The popular uses have overshadowed the organizational and technical aspects and the words “Internet” and “Web” are often used without distinction. For most people, the Internet is about surfing the Web, sending and receiving emails, using search engines like Google, and reading and writing blogs and wikis, being a part of social networks like Facebook (the world’s largest social Networking website, founded in 2004) and Youtube (a video sharing website, founded in 2005), and participating in e-commerce.

The indexed Web contains at least 8.06 billion web pages, Facebook more than 350 million active users in 2009, and nomadic access is also developing, re-considering Internet mobility.

Internet applications often raise issues of a legal nature regarding liability law and the handling of personal data and intellectual property, which are made more complex by the fact that the network is deployed globally. Security issues linked with the problems of spam and cybercrime are also a concern. Aside from these factors, two themes are currently drawing the international community’s attention: the digital divide and Internet governance. The International Telecommunication Union has highlighted its aim to “connect the unconnected by 2015” and to “achieve equitable communication for everyone.” Indeed, whereas Internet penetration in 2009 totals nearly 75 percent in North America and 50 percent in Europe, the figure is less than 7 percent in Africa. Nearly half of the world’s 1.73 billion or so Internet users are of a North American or European origin and just 65 million are Africans, according to the uppermost estimates.

Alongside these international imbalances in Internet access and usage, a call was made at the World Summit on the Information Society (Geneva 2003, Tunis 2005) for Internet governance to be less dominated by the United States. The 1990s were a period of major upheaval in the organization of the Internet and growing complexity in the players and parties involved; this included the creation of the Internet Society in 1992 and the creation of the World Wide Web Consortium in 1994. By expanding, the Internet infrastructure diversified and gradually saw a multi-division organizational structure take shape. The notion of governance has been enriched due to a range of factors, including the creation of the ICANN (Internet Corporation for Assigned Names and Numbers) by the United States in October 1998 to handle issues relating to the management of domain names, the creation of the Working Group on Internet Governance at the WSIS in Tunis (November 1995), and then the Internet Governance Forum, the World Human Development Report in 2001 by the United Nations Development Programme, the World Information

Technology Program in 2003, and debates on IPv6 (a new generation of Internet connectivity that extends addressing possibilities to near-unlimited proportions). Issues include such diverse questions as multilingualism, domain names, the use of free software, values and ethics, and freedom of opinion and speech—all global challenges in the twenty-first century. Obtaining access to the Internet on a non-discriminatory basis fosters everyone's fundamental right to communicate, thus enabling a move from a mere "information society" to a democratic society in which access to knowledge and communication are universal.

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See also Communication Media; Information Storage and Retrieval; Mass Media; Technology, Computer

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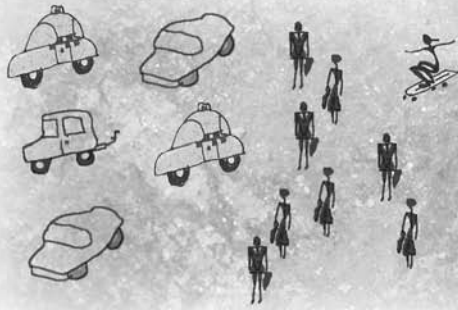
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Interregional Trade Networks

Prolonged and frequent contact between different parts of the world through trade has been a consistent part of world history since the establishment of Phoenician routes and the Silk Roads in ancient times. In the twenty-first century global economy trade in capital, labor, and merchandise is the most obvious manifestation of interregional networking, but similar phenomena exist in the cultural realm.

While the term *globalization* suggests itself as a relatively new phenomenon, global history may be understood as a succession of prolonged and frequent contact between different parts of the world. One way of thinking about these global relationships is through the metaphor of networks. Networks are arrangements of connections into nets, or permeable systems linking groups of points and intersecting lines. Obvious examples are the body's circulatory system—a network of veins and arteries—or a country's transportation network of roads, railways, rivers, and canals. Global interregional networks are defined by a complex series of interactions, such as trade and communications, which span relatively wide geographical areas.

Interregional networks have two important characteristics in common. The first is the distance between the various points of the network, a condition that makes a sophisticated set of governing and logistical structures necessary. These structures naturally reflect and may encourage the social development of the parties involved. The second critical aspect of such connections is that they are not transitory, but go on for a relatively long time and come to achieve a certain predictability. We therefore understand interregional

networks to be complex structures for maintaining a semipermanent connection between two or more points across great distance. Trade has been a catalyst for such networks since early times.

Early Networks

Enough evidence exists of prehistorical trade—in obsidian, for example—to indicate that some fairly far-flung exchange relationships had evolved by the fifth millennium BCE. The first example for which we have extensive evidence has its center in the eastern Mediterranean in the second millennium BCE. Cultures in this region appear to have engaged in the importation of materials such as tin, amber, and lapis lazuli, possibly from as far away as Britain and Afghanistan. In addition to trade, massive migrations were creating diasporic communities throughout the region. By 800 BCE, the Phoenician trade network ranged from contemporary Lebanon to Gibraltar and possibly beyond. There is much less evidence for interregional connections in the Western Hemisphere during this period, such as between Mesoamerica and the Andes, or even between the river civilizations of Indian and China; it is unclear whether the spread to Central Asia of Indo-European languages and cultural artifacts like chariots reflects an ongoing exchange or simple unidirectional conquest. The conquests of Alexander of Macedon (Alexander the Great, 334 BCE–323 BCE), however, certainly created a medium-term network.

By the beginning of the Common Era, there had grown up a complex set of interregional exchanges across most of Eurasia. Spices imported from as far



Alberto Pasini, *The Traders* (c. 1870s). Oil on canvas. The painting, an icon of late-nineteenth-century Orientalism practiced in the West, depicts an Arab caravan on the Silk Roads network.

away as Indonesia appeared on tables in Rome. The Roman Empire was sustained by a set of regional exchanges facilitated by Rome's hegemony over the Mediterranean and its creation of an excellent road network. The famous Silk Roads stretching from Han China to Constantinople and Alexandria was already well established by 500 CE.

Medieval Networks

At least for the European peninsula, many of these networks were broken by the early Middle Ages. Two prominent exceptions may include the network of Viking settlements ranging from the Volga to Newfoundland and the pilgrimage routes and other connections between relatively isolated monasteries. Only in the twelfth and thirteenth centuries do we see the reestablishment of a cross-Mediterranean network, largely managed by Italian city states. Of even greater historical import is that this period sees the development of a true network of markets in central Europe, bounded to the east and west by the Rhine and Seine rivers, and to the north and south by the North Sea and the Alps. The desolation of the Black Death of 1347 to 1352 serves as the best indication of the reconnection between European regions and between them and the rest of the world, reflecting that

networks can transmit a multitude of things, not all of them welcome.

In Africa, this period marks the highpoint of the Sahara as a desert "ocean" bearing significant trade. Multilateral trade in gold, salt, and other commodities interconnected the Mediterranean coast with the Gulf of Guinea and the Atlantic with the Red Sea. A perhaps even better-developed network allowed the transfer of goods, people, and information from the Mozambique Channel northward along the African coast and across the Indian Ocean (arguably the locus of international trade during this period). To this largely mercantile network we need to add the variety of connections fostered by the Islamic conquest begun in the seventh century. From the southern Spanish kingdom of Granada (until 1492) to the Pacific island of Java (by the end of the fifteenth century) a shared faith expressed in the Qur'an and through the Arabic language provided a base for a multitude of links, despite the fractionalization of political power. These connections and commonalities would arguably make the Muslim world of this period the first truly globalized society. To a somewhat lesser degree, the Mongol Empire of the thirteenth century created a single Eurasian entity and promoted considerable long distance exchange and interaction.



President William Clinton and Vice President Albert Gore meet with environmental groups endorsing the North American Free Trade Agreement, 14 September 1993. National Archives.

Modern Networks

The European discovery of the Americas marked a new stage in the development of interregional networks. Even prior to 1492, the Portuguese had created a direct link between South and Southeast Asia and the Mediterranean. With the advent of the annual Spanish silver fleet from Manila, international connections become trans-oceanic. But this was merely a part of a global network of exchange that took spices and silk from the east, timber and grain from the north, sugar, coffee, cotton and tobacco from the west, and slaves from the south, and combined them for reshipment from the warehouses along the North Sea. The slave trade is perhaps the best example of the kind of interregional network created in the new imperial age. The foundation of this trade was a complex set of exchanges within the African continent that helped shape the economy, politics, and demographics of the region for centuries. To these were linked the new manufacturing centers of northwestern Europe needed to make the ships and the manufactured goods exchanged for the human cargo. After crossing the Atlantic, this same cargo produced the tropical commodities that would go back across the Atlantic to begin the process again. While the Atlantic Ocean dominated trade during this period, land networks did persist in the Ottoman and Safavid empires in the Asian subcontinent and in East Asia. By the nineteenth century, however,

Europeans had come to completely dominate all interregional networks.

As noted above, networks exchange more than just merchandise: cultural ideas and phenomena also cross between regions, leading to new assimilations, combinations, and sometimes conflict. Migrations were also a significant part of these networks. An estimated 40 million Europeans crossed the Atlantic between 1600 and 1900. At least 20 million Africans were forced into slavery (including several million moving eastward). The Indian diaspora reached every continent, as did the much larger migration from China (over 20 million in the nineteenth century alone).

In the twentieth century, significant numbers of inhabitants of former colonies have moved to the lands of their former colonizers, creating a dense network of familiar visits, business contacts, and remittances. Contemporary global interregional networks retain significant legacies from this imperial past. Thus, airline and telecommunication networks in Africa tend to be divided between those centered in London and those in Paris. In many cases, these imposed network connections and attendant specializations make it difficult for weak economies to grow. Most famously studied in the case of the external financial and commercial asymmetries in the relationship between Latin America and Europe and North America as described in *dependencia* theory, we can also see the consequences of such



phenomena in the challenges to the development of the former Soviet Union.

Obviously, contemporary interregional networks also have significant advantages. Perhaps the clearest example is the creation of the European Common Market and later the European Union, which accounts for two-thirds of the trade of all the associated nations. The East Asian region has created a similar series of linkages within the Association of Southeast Asian Nations (ASEAN), but here national sovereignty remains more sacrosanct. The only other example that has approached this level of success is the North American Free Trade Agreement, but the centrality of the United States makes this much less of a network than the unification of three economies; we see less an exchange between equals and more the monopoly of a single node. These three regions (Europe, North America, and East Asia) also make up the vast majority of exchanges among global regions.

While the international trade in capital, labor, and merchandise is the most obvious manifestation of interregional networks, similar phenomena exist in the cultural realm. The required hajj, or pilgrimage to Mecca, has created an extensive network of logistical support across the Islamic world. More prosaically, the combination of migrations and international sales has created often strange networks of cultural

products including India's Bollywood movies, Brazilian soap operas, and American action epics.

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See also Migration—Overview; Silk Roads; Trade Cycles

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Interwar Years

(1918–1939)

Despite hopes and expectations for a new era based on greater freedom at home and greater collaboration abroad, World War I left a legacy of wounds, ambiguities, and unresolved disputes. During the 1930s, conflicts between empires and colonies, democracy and authoritarianism, and nationalism and internationalism played out on a world stage, and by 1939 sparked a second world war even more destructive than the first.

World War I—the “Great War” that had mobilized both human and material resources on a global scale—created during the interwar years (1918–1939) a general disillusionment with the hierarchical and European-centered nineteenth-century political order. The liberal dream of limitless scientific and technological progress had led to the development of weapons that had killed 7 million soldiers and civilians and had wounded 13 million others. The German writer Oswald Spengler’s *The Decline of the West* cited the war as evidence of the West’s imminent deterioration. Furthermore, colonized populations across the globe began to question the supposed “Western superiority” that European nations used to justify their imperial policies. Consequently, although world public opinion clamored for peace and stability, people had a strong sense that a simple return to the antebellum belle époque (beautiful age) was not the most desirable solution.

Even if some people wanted to restore the bourgeois sociopolitical structure that had existed before 1914, that restoration no longer seemed possible. The mass mobilization, mass production, mass consumption, and mass culture that

the war had generated also helped replace the elitist nineteenth-century system with mass societies and mass politics. Throughout the war men and women alike had felt increasingly invested in political affairs, both because of the sacrifices they had made and because the popular press had kept them constantly informed about the war’s happenings. Moreover, knowing that an increasingly global audience relied on the media to provide information and answers, politicians had begun using the media to spread propaganda and garner support. Leaders from every end of the political spectrum had made public promises about what “the people” could expect or demand when the war subsided. After the Russian Revolution the Russian Communist leader Vladimir Lenin (1870–1924) had called for the workers of the world to unite to conquer the forces of capitalism. The U.S. president Woodrow Wilson (1856–1924), on the other hand, had promised that when the fighting stopped all those who participated would be able to enjoy greater equality, freedom, democracy, and national self-determination.

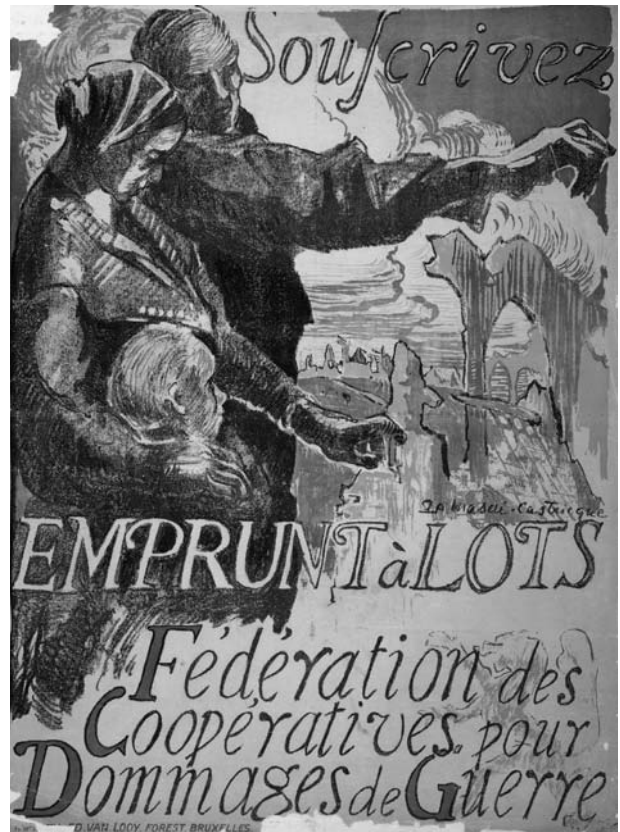
Thus, as the war was winding down, people were gearing up to inherit a better world. However, people had multiple and often contradictory ideas about what the new world order should look like. In addition to ideological disagreements among Communism, liberal democracy, and a burgeoning neo-conservatism, people everywhere rallied for expanded suffrage, shorter work days, higher wages, and the right to transform ethnically organized or imperially occupied territories into sovereign nations. Furthermore, whereas many voices spoke out against the technology that had made

the war possible, more people than ever clamored for a share of modernity's amenities, such as the radio and the automobile. When the armistice finally came on 11 November 1918, the French prime minister, Georges Clemenceau (1841–1929), announced “we have won the war, now we must win the peace.” As Clemenceau predicted, the task of restoring order was to be incredibly difficult, and after the guns fell silent many thorny issues remained unresolved.

In January 1919 the Paris Peace Conference convened to decide the fate of the vanquished aggressors (Germany, Austria, and Turkey) whose empires the war had toppled. One year earlier—on 8 January 1918, to the U.S. Congress—Wilson had delivered his Fourteen Points, which provided the structure for a more equitable system of international relations based on international law and protected by an association of independent nations that would cooperate to maintain order. Although the desire for peace and international cooperation was fairly widespread, and Wilson's role at the Paris Peace Conference was prominent, most delegates tried to push the settlement in a direction that optimized their own national interests. Despite Wilson's continuing insistence on the universal right of self-determination, the Allied powers (Russia, France, England, Italy, and the United States but especially France and England) emerged from the peace settlement with more territories than ever before. The vast spoils included oil fields in the former Ottoman Middle East and mineral-rich territories in what had been German East Africa. To appease Wilson, the victorious powers had agreed to manage the territories as “mandates” until they were ready to govern themselves rather than simply annexing them.

Unrest and Revolt

The Treaty of Versailles and the League of Nations—the intergovernmental organization that Wilson envisioned—went into effect on 10 January 1920. But even before the treaty was officially signed,



This 1918 Belgian poster by P. A. Masui-Castrique—depicting a man, woman, and child looking at ruins of a town—expresses Europe's disillusionment with the hierarchical nineteenth-century political order. Library of Congress.

dissatisfaction, malaise, and revolt emerged all over the map. Following in the footsteps of the Russian Revolution (whose leaders thought the League of Nations was a bourgeois sham), revolutionary politics were brewing in Hungary under the leadership of Bela Kun (1835–1939), in Bavaria under the leadership of Eugene Levine, and in Germany under the leadership of Karl Liebknecht (1871–1919) and Rosa Luxemburg (1871–1919). Labor and/or race riots broke out in Bolivia, Brazil, Argentina, and the United States, while Mexico was locked in a civil war that had begun in 1910. Furthermore, fear of the socialist call for worldwide revolution spurred counterrevolutionary forces, and informal armies or vigilante groups set out to take revenge on left-wing activism in the name of nationalism.

Revolutionary activity and social unrest were taking place in southern and eastern Asia. On 13 April



1919, Indian civilians were protesting British policies at Amritsar in Punjab when the British general Reginald Dyer ordered soldiers to fire on the crowds, killing 379 Indians and wounding 1,200. After hearing that the Versailles Treaty awarded Germany's concession rights in the Shandong Peninsula to Japan, thousands of Chinese students demonstrated in Beijing and continued to boycott Japanese goods. In the midst of all this political unrest, an influenza epidemic was circling the globe. It spread via trade routes, and outbreaks occurred in North America, Europe, Asia, Africa, Brazil, the South Pacific, and in India, where the mortality rate was particularly devastating. The epidemic only intensified the sense of worldwide unease.

Despite such unease, in many ways the Treaty of Versailles and the establishment of the League of Nations were a great victory. They filled the advocates of internationalism with hope that peace through disarmament and cooperation might yet be possible. But the peace left nearly as many loose ends as the war. The harsh reparation terms that the peace inflicted upon Germany, along with the contentious ways that it had accorded statehood to some territories and denied it to others, all but guaranteed that further contention would accompany efforts to create international stability. People widely felt that the treaty had not granted many people the recompense they desired for the losses they had suffered. Woodrow Wilson could not get even his own country to agree to the treaty's terms; on 19 March 1920, the U.S. Senate failed to ratify the Treaty of Versailles and in doing so refused to participate in the League of Nations. This shocking event did not augur well for the fate of the Fourteen Points and the world that Wilson envisioned.

Despite the absence of Germany, Russia, and the United States the League of Nations set about fulfilling its aims and functions. In 1921–1922 a conference in Washington drew up a naval treaty limiting the capital ships of Britain, the United States, Japan, France, and Italy. Furthermore, a conference on disarmament met in Genoa in 1922,

and in 1925 in Locarno, Switzerland, treaties were drawn between Britain, France, Germany, Italy, and Belgium guaranteeing the western European boundaries against violation. However, while the Europe-led League of Nations was trying to “make the world safe for democracy,” nations and peoples both in Europe and beyond continued to search for alternatives to liberal democratic Wilsonian ideals.

By 1923 Marxism's revolutionary threat had been greatly reduced. However, people still feared it enough to bring fascism to power in Italy in 1922 and a military dictatorship to Spain in 1923 and to renew the Nationalist Socialist Party (which would become the Nazi Party) in Germany in 1925 after Adolf Hitler (1889–1945) was released from prison. Fascism began to appear as a “third way,” an alternative between the poles of Communism and democracy. As fascism was on the rise in Europe, colonized populations elsewhere grew even wearier of the imperial double standards that offered freedom and democracy at home but oppression abroad. To combat European liberalism's numerous contradictions, anticolonial forces began to claim various forms of nationalism for their own.

Anticolonialism

In Kenya, where colonialism was fairly recent, Harry Thuku began demanding that the British simply provide better education and return the lands they had seized from the natives. He was arrested by the British in 1922. In India an outright anticolonial nationalist movement was under way. Throngs of Indians followed the leadership of Mohandas Gandhi (1869–1948), who instigated a campaign of nonviolent resistance (*satyagraha*) in 1922 to attain self-rule (*swaraj*). In Egypt an elite Egyptian politician asked to be invited to the peace conference at Versailles so that he could present his case for independence from Britain. When he arrived, however, the British arrested him. The incident led Egyptians



to revolt, which gained them partial independence by 1922.

In 1926, in an act of good faith, the League of Nations invited Germany to join. Furthermore, in 1928 the French foreign minister, Aristide Briand (1862–1932), and the U.S. secretary of state, Frank Kellogg (1856–1929), initiated a pact to exclude war as an option in foreign policy except in self-defense. Sixty-five nations met in Paris to sign the Kellogg-Briand pact. The Kellogg-Briand pact was a tremendous accomplishment, to be sure; however, the fault lines of the period ran deep. Britain, for example, agreed to sign the pact only as long as Britain could use force within its own colonies. The conflicts that raged throughout the 1930s were not dissolved in Paris in 1928. In fact, they were on the verge of deepening in the face of the devastating economic depression that was just around the corner.

On 29 October 1929 (Black Tuesday), the U.S. stock market crashed and sent shock waves throughout the world economy. By the mid- to late 1920s the consumerism of the “jazz age” that had led to greater production had begun to decline, and prices had begun to fall. Furthermore, wobbly governments deeply indebted from the war and small investors had begun to default on their loans from the United States. As a result federal managers raised interest rates, and financial institutions began to collapse. The panic spread to the world market, where investors had been investing in speculative ventures for a quick profit. The crash led to the rise of tariff borders and hence a contraction in world trade. Everywhere people suffered from unemployment and hunger. The depression caused people to further question the liberal doctrine of free markets, and states began to intervene more heavily in economic affairs.

To many people U.S.-style laissez-faire democracy (opposing governmental interference in economic affairs) seemed to have failed to provide the prosperity it had promised, and people began welcoming authoritarian solutions to poverty and mass unemployment. Soviet Russia, fascist Italy, Nazi Germany, and militaristic Japan mobilized against

the liberal democracies whose “moral decay” and “decadence” they claimed to overcome. Leaders such as Joseph Stalin (1879–1953) of the Soviet Union, Benito Mussolini (1883–1945) of Italy, and Adolf Hitler of Nazi Germany promised to deliver all of modernity’s benefits without side effects such as class division, urban-industrial squalor, or moral and social decay. In order to enact their programs, however, the authoritarian leaders of both the right and the left first identified scapegoats upon whom they could place the blame for the adverse economic and social conditions, and then they advocated violence to dispense with their “enemies” in the name of national progress. Stalin identified the “wealthy peasants” as the primary enemies of the state and proceeded to intern them in work camps. The Nazi Party blamed Jews for all of modernity’s evils. Hitler railed against both “Jewish capitalism” and “Jewish bolshevism,” and when he came to power in 1933, he immediately devised a number of plans to take care of the “Jewish problem”—plans that would lead to the Holocaust.

By the mid-1930s the international order created by the treaties of Versailles, Washington, and Locarno was in a state of decline, and nations everywhere began the process of rearmament. In Spain a civil war (1930–1939) raged between the left and the right. Furthermore, in defiance of the Kellogg-Briand pact Mussolini invaded Ethiopia in 1931, Japan invaded Manchuria in 1932, and the League of Nations stood by helplessly. By 1936 Hitler sent soldiers to occupy the Rhineland, and by 1938 Germany had absorbed Austria. Wanting to avoid repeating the horror of World War I, France and Britain sought a peaceable solution with Germany and made several concessions to Hitler, a solution that people have called “appeasement.” At a conference in Munich in 1938 Hitler received the Sudeten territories; however, in defiance of all agreements he invaded Poland on 1 September 1939. By 3 September the world was once again at war.

Despite all the expectations that people had for a new order based on greater freedom at home and greater collaboration abroad, World War I had left too

many wounds, ambiguities, and unresolved disputes. During the 1930s the conflicts between empires and their colonies, between democracy and authoritarianism, between nationalism and internationalism played out on a world stage. By 1939 these conflicts seemed destined to be resolved by yet another war, a world war that would be even more destructive than the first.

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See also World War I; World War II

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Once humans learned how to refine it, iron became the preferred metal for making both tools and arms. Cheap and strong, iron played key roles in the development of society in both Asia and Europe. Iron is the key component of steel, which remains an important manufacturing material for both civilian and military products.

Iron is Earth's most common element. The planet's core is made of molten iron, and about 4 percent of the Earth's crust is made of iron combined with oxygen to form other chemical compounds. When humans learned how to refine it, iron quickly became the cheapest material for making weapons, armor, and tools. Together with steel—a mix of iron with small amounts of carbon and other elements—iron remains the most common metal, used in innumerable ways in heavy construction and the manufacture of machines, weapons, everyday tools, and household equipment.

In their solid state, iron atoms can form several different crystal structures, each with its own characteristics. Small impurities, especially of carbon, also affect iron's hardness, flexibility, melting point, magnetism, and propensity to rust. For centuries, chemists did not know why iron was so diverse. Nevertheless, foundries, where different iron ores were converted into useful forms of the metal, developed rules of thumb for obtaining desired results. Iron smiths and smelters liked to keep trade secrets to themselves.

A New Metal

High temperatures (1540°C, or 2800°F) are required to separate iron from its ores. By learning how to build furnaces that created natural drafts of air, often assisted by bellows, and by using charcoal as fuel, smelters created high enough temperatures to approach the melting point of iron in Cyprus and eastern Anatolia by about 1400 BCE. Two hundred



Panoramic photograph of a mountain iron mine in Minnesota, circa 1902. Library of Congress.

years later, iron smelting had spread to neighboring regions, and the scale of production had increased sufficiently that historians habitually speak of an Iron Age succeeding the Bronze Age when that more expensive metal had supplied ruling classes in western Asia and distant China with arms and armor. Iron smelting reached China by about 700 BCE, and itinerant blacksmiths and smelters soon carried their skills across all of Eurasia and much of Africa, but native Australians and Amerindians did not know the use of iron until European explorers introduced it after 1500.

In western Asia and adjacent regions where the use of iron first became common, the new metal had two principal effects. First of all, iron was far cheaper than bronze, so greater numbers of infantrymen could be outfitted with swords, spearheads, helmets, and shields to protect them more effectively from the arrows of charioteers. As iron-clad infantry became decisive in battle, chariot-led armies were overthrown everywhere. In Greece, and subsequently in Italy, a more egalitarian society emerged; ordinary farmers equipped themselves with iron armor and weapons and then learned how to keep in close formation behind an unbroken shield front and charge against less well-organized foes, thus sweeping them from the field. Classical Greece and republican Rome achieved a distinctive military form, in which armed citizens used spears and swords to defend city-states.

In western Asia, by contrast, far larger empires persisted, relying on professional armies of cavalry and infantry who continued to use bows for attacking from a distance.

The other effect of cheap iron was that iron hoes and plowshares became available to more and more cultivators. That made plowing and weeding easier, quicker, and more efficient, increasing the harvest. This allowed a majority of people to participate in the market for the first time, selling part of their harvest to buy iron tools that could last a lifetime. As farmers came to rely on iron tools they became marginally dependent on the specialists who dug iron ore, smelted it, and then cast or hammered the iron into shape. Also important were those who transported the ore, iron, and tools from place to place and from specialist to specialist during the complex process of production and distribution. Everyone benefitted when that process went smoothly, and wealth increased.

Subsequently, supplies of iron enlarged from time to time, and new tools, armaments, and conveniences for ordinary consumers became available in more and more places. Civilized forms of society spread within Eurasia accordingly and interdependence tended to increase. To be sure, iron supply was only one element in forwarding that course of events but was always important both for civilian and military affairs.



Iron in Asia

The first major documented surge in the scale of iron production took place in China, where tax records show that new, far bigger furnaces using coke (a coal derivative) for fuel raised output from 32,500 tons per year in 998 to 125,000 tons in 1078. This almost four-fold increase in eighty years centered in the provinces of Henan and Hubei in northern China, where beds of iron ore and coking coal lay close together. Who mined the ore and coal, made the coke, and managed the furnaces remains unknown. The imperial government played a dominating part, setting out to monopolize the distribution of iron tools to farmers and deriving significant income from keeping prices high. The government also commandeered vast quantities of iron for manufacturing weapons, constructing bridges, and making coins. Scattered records mention a single order for 19,000 tons of iron to make into coins and refer to arsenals that turned out 32,000 suits of armor in a single year.

This attests to the scale of government consumption and supervision. Disaster soon followed, but no record survives to tell what actually happened. Officials may have throttled the iron industry unintentionally by setting prices too low to cover the costs of production. Furnaces may have ceased production in 1125 when Jurchen steppe tribesmen living in northeastern China and southern Siberia conquered northern China, but they needed iron as much as Chinese rulers did, so may have kept the furnaces alight. Crippling, short-term disaster most certainly did arrive in 1194 when the Huang (Yellow) River rose, broke its dikes, flooded vast areas, and erased the canals that had linked the iron furnaces to the imperial capital. Without canals to supply raw materials and deliver iron to users, production must have ceased, at least for a while. The canals were never wholly restored, so it is not surprising that when official figures for iron production in Henan and Hubei become available again, after the Mongol successors of Chinggis Khan (Genghis Khan) had conquered China (as the Yuan dynasty, 1279–1368), only 8,000 tons of iron per annum came from surviving furnaces, and all of it went to equip the Mongol army. Subsequently, iron smelting in Henan and Hubei ceased entirely in

1736 for reasons unknown and resumed only in the twentieth century.

At some undetermined time, Japanese sword makers developed secret skills for manufacturing blades superior to all others. Heating, reheating, and prolonged hammering created laminated steel swords, sharper and more durable than those other peoples knew how to make. The samurai warriors who used them became a privileged class. Such weapons took a long time to make and each was precious and unique, so Japanese swords did not do much to benefit the nation as a whole.

Iron in Europe

If the astounding expansion of iron production in China between 998 and 1078 had been sustained that country would have enjoyed a far more abundant supply of iron than anywhere else, and it is tempting to suppose that something like the Industrial Revolution of eighteenth-century Britain might have ensued. As things were, China remained more populous and more skilled at making silk, porcelain, and many other items than the rest of the world, but allowed Europeans—especially the British—to take the lead in expanding the scale of iron production, beginning about 1300 when larger furnaces of improved design began to attain higher temperatures in western Europe.

Brass and bronze were the preferred metals for heavy guns when they were new, because iron was liable to split under the pressure of exploding gunpowder. This was due to various trace chemicals found in most iron ores. But, by chance, iron ore from Sussex, England, lacked contaminating chemicals and in 1543, gun makers imported from mainland Europe discovered they could cast reliable iron cannon from Sussex iron. This allowed English ironmasters to produce much cheaper big guns and expand the scale of production beyond earlier limits. English ships armed with iron guns defeated the Spanish Armada in 1588, and the Royal Navy, needing heavy iron anchors as well as hundreds of cannon, became the principal market for English iron for the next two centuries.

Deforestation of the more densely settled regions of western Europe limited the supply of charcoal more

The file and steel manufacturer / exporter John Martin & Company of Sheffield, England, set up offices for its sole American agent, W. Bailey Lang & Company, in New York, Philadelphia, and Boston. Color lithograph made between 1856 and 1864.



and more severely after 1300. That set a ceiling on ironworking and drove Dutch and other entrepreneurs in the seventeenth century to build furnaces in Sweden and even in the Ural mountains of Russia, where there was iron ore and forests were abundant. In 1709, however, Abraham Darby, an English ironmaster, discovered how to smelt iron by using coke (made by heating coal to drive off noxious chemicals). Since English coalfields were extensive and coal mining had already become an important industry, it then became possible to expand iron production far beyond earlier limits.

The Industrial Revolution

Possibilities widened after 1712 when Thomas Newcomen built the first steam engine, which was made of iron. It was designed to pump water from coalmines, thus enabling more coal to be mined from greater depths. James Watt's improved and more versatile steam engine (1776), iron bridges, and the first iron locomotive (built in 1802), presaged a far more massive upsurge in demand for iron to construct steamships (beginning in 1807), railroads (after 1825), and ironclad vessels (from the 1840s).

The consequent rapid expansion of iron manufacturing played a central role in what is commonly called the British Industrial Revolution. As before, civilian inventions were matched and at other times provoked by naval and army officers who sought new

and more powerful weaponry to assure military security or crushing superiority over rivals.

Wars regularly stimulated iron and steel production by expanding demand for cannon, armored ships, and other big-ticket items, and when peace cancelled wartime demands, ironmasters desperately sought new civilian markets to absorb their surplus. England's wars with France (1756–1763, 1778–1783, and 1793–1815) therefore had much to do with hurrying the Industrial Revolution along. The expansion of British iron production, in turn, facilitated Great Britain's military and economic successes.

Civilian-military linkages remained influential throughout the nineteenth and twentieth centuries, not just in Great Britain but in France, Germany, and every other country where new mines, factories, and foundries arose to match those of Britain—and whenever new wars created sudden surges in governmental purchases of armaments. Everywhere, supplies of coal and iron were essential for industrial modernization. In Germany (united after 1870) and the United States, coal- and iron-based industries expanded more rapidly than elsewhere; both surpassed Great Britain in total output well before 1900.

Technical advances came thick and fast. During the nineteenth century, chemists developed ways to detect, and either remove or increase, trace elements that affected the qualities of iron and steel. In 1856, Henry Bessemer devised a furnace that sent a blast of hot air through molten iron, turning it into steel. That

Thomas Pollock Anschutz,
The Ironworker's Noontime
 (1880). Oil on canvas.
 Museum of Fine Arts, San
 Francisco.



harder and stronger material became far cheaper to produce in much larger quantities than before. Thereafter, steel and specialized steel alloys displaced iron for many purposes. After lengthy experimentation, Alfred Krupp in Germany manufactured the first steel cannon, and the Prussian army showed its superiority in the field when invading France (1870–1871). That made steel preeminent for the manufacture of big guns and armored warships. World Wars I and II added steel tanks for use on land. Steel shells remain standard today.

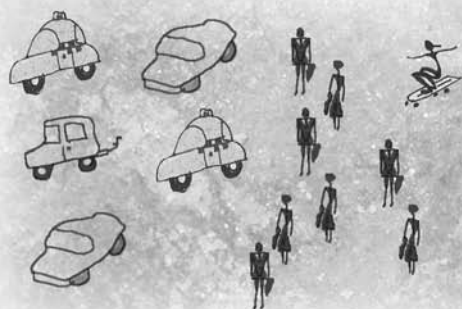
In the twentieth century, coal, iron, and steel lost some of their former preeminence. Oil displaced coal for many purposes; aluminum and plastics displaced iron and steel less generally—but significantly, for example, in manufacturing airplanes. In the foreseeable future, steel, with its many different alloys, and iron, in its various forms, seem sure to remain the most common material humans employ for making the innumerable metallic objects we use in everyday living, as well as for building the industrial and military machinery we rely on.

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See also Industrial Revolution; Railroad

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Isabella I

(1451–1504)
QUEEN OF SPAIN

The marriage in 1469 of Isabella of Castile and Ferdinand II of Aragon led to the dynastic unification of Spain's two largest kingdoms. Isabella, the only reigning queen in the first century of the Renaissance, was the sponsor of Columbus's voyages to the New World. She enacted programs to restore and solidify the predominance of the Roman Catholic Church in the Iberian Peninsula.

The Iberian monarch Queen Isabella (Isabel in Spanish) I of Castile, also known as Isabella the Catholic, completed the reconquest of the Iberian Peninsula along with her husband, Ferdinand (Fernando in Spanish) II of Aragon (1452–1516). Royal sponsor of the New World voyages made by Christopher Columbus, she was the daughter of John II of Castile and Isabella of Portugal.

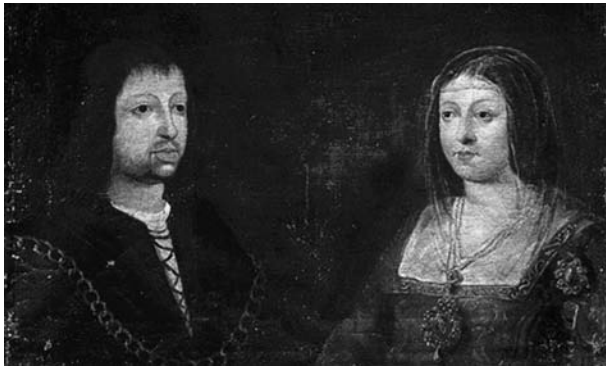
Isabella was named Queen of Castile after the death of her brother Alfonso in 1468, although not without incident. As a result of Isabella's marriage (1469) to Ferdinand II of Aragon—later Ferdinand V of Castile—Isabella's half-brother Henry IV promptly chose to disinherit her and appoint as the new heir apparent his own daughter, Juana. Upon the death of Henry IV (1474) Isabella appointed herself as the rightful Queen of Castile in the city of Segovia, causing a bitterly fought civil war and international conflict to erupt between the faction supporting Isabella and the faction supporting Juana (1475–1479). The Concordat of Segovia (1475) set forth the rules and regulations governing the individual participation of Isabella and Ferdinand in the governing of Castile, and the subsequent Treaty of Alcaçovas (1479) put an end to the civil war. From this point forward, Isabella

and Ferdinand ruled as equal Catholic Kings, a title conferred upon them by the Spanish-born Pope, Alexander VI, a member of the influential Borgia family.

The marriage of Isabella and Ferdinand II created a union that eventually led to the dynastic unification of Spain's two largest kingdoms, Castile and Aragon. Contrary to popular belief, neither the Catholic Queen Isabella I nor the Catholic King Ferdinand V wished to be known as monarchs of a unified Spanish kingdom. Instead, they preferred to be known in the traditional fashion as "King and Queen of Castile and León, Aragon, and Sicily, Toledo, Valencia, Galicia, Mallorca, Seville, Sardinia, Corsica, Murcia, Jaen, Algarve, Algeciras, Gibraltar, Count and Countess of Barcelona, Lords of Viscaya and Molina, Dukes of Athens and Neopatria, Counts of Roussillon and Cerdagne."

After the death of the sons of Isabella and Ferdinand, their daughter Juana became the heir and future Queen of the Crown of Castile. With her husband, Philip of Austria, Juana would give birth to the future Emperor Charles V of the Holy Roman Empire, or Charles I of Spain. Another of Isabella's daughters, Catherine, married Henry VIII of England. The inability of Henry VIII to obtain a divorce from Catherine of Aragon would trigger the break of England from the Roman Catholic Church.

Isabella's historical significance lay not only in the fact that she was the only reigning queen in the first century of the Renaissance, but also in the sweeping programs she pursued in her mission to restore and solidify the predominance of the Roman Catholic Church in the Iberian Peninsula. Notorious among these programs were the establishment of the Spanish Inquisition, the expulsion of the Jews from all Spanish



The wedding portrait of Isabella I, Queen of Castile, and Ferdinand II of Aragon, circa 1469.

kingdoms, the reform of the Spanish Church and of the religious orders, the wars against the Muslims of North Africa, and the eventual Conquest of Granada (1492), the last Muslim enclave on the Iberian Peninsula. Isabella also supported the conquest of the Canary Islands and the New World endeavors of Christopher Columbus, through which Spain would gain a new overseas empire.

The Treaty of Tordesillas (1494) was perhaps the most important international arbitration treaty signed during Queen Isabella's reign. Drawn up to ease confusion between Spain and Portugal with regard to the right of possession of New World territories, it basically divided all newly discovered lands between the two countries. Upon the death of Queen Isabella I, the Catholic, she was laid to rest in the Royal Chapel adjacent to the Cathedral of Granada, as was her dying wish. She lies entombed alongside her husband,

King Ferdinand, the Catholic, and their daughter Juana and her husband, Philip.

Isabella's reign gave birth to a Renaissance decorative and architectural style known as Isabellaine. Along with her desire to bring the Catholic faith to an ever greater number of people, Isabella also empowered one of the most crucial tools of empire and civilization—the first grammar of a European language, compiled by the Spanish humanist Elio Antonio de Nebrija.

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See also Columbus, Christopher; Portuguese Empire; Spanish Empire

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Islam is both a worldwide community of believers and a major world belief system based on submission to one God, Allah. In the twenty-first century there are almost a billion and a half Muslims (people who accept Islam as their faith) in more than two hundred countries.

Although Islam was initially historically identified with Arabs, today only around 15 percent of the world's Muslims (the people who accept Islam as their faith) are Arabs, with the largest national communities of Muslims being in southern and southeastern Asia. The historic Islamic community began in the seventh century CE in the western part of the Arabian Peninsula; within two centuries the Muslim world stretched from Central Asia to northern Africa and Spain. The term *Islam* refers to a worldwide community of believers and to one of the major belief systems in the world.

The core of the belief system of Islam is the affirmation that one God (Allah) exists. The word *Allah* means in Arabic “the divinity.” The word *islam* means “submission,” and the belief system is based on submission to the one God, with the person engaging in submission being called a “Muslim.” Muslims understand their faith to be a continuation of the message of God presented to humanity through a series of messengers and prophets, including Abraham and Jesus. In the Islamic belief system the final presentation of the message of God was made through the Prophet Muhammad, who lived in Mecca and then Medina in modern Saudi Arabia at the beginning of the seventh century CE. The revelation was recorded and preserved in the Qur'an, the holy book of Islamic faith.

The basic requirements of the Islamic belief system are frequently called the Five Pillars of Islam. The first pillar (*shihadah*) is bearing witness publicly to the belief that “There is no divinity but Allah and Muhammad is the messenger of Allah.” Praying (*salat*) is the second pillar. Praying involves performing five prescribed prayers daily. The third pillar (*zakat*) is taking the responsibility to contribute alms to provide assistance to the poor in the community. Undertaking the fast during the month of Ramadan is the fourth pillar. The fifth pillar is performing the pilgrimage (hajj) to Mecca at least one time during the believer's lifetime, if possible. Each of the pillars is a responsibility for the individual believer, and no priesthood or clergy is required to fulfill any obligation. Although “striving in the path of God” (jihad) is an expected part of the life of faith for Muslims, jihad defined as “holy war” is not one of the Five Pillars of Islam.

The Formation of Community and Faith

Muhammad was born in Mecca around 570 CE. He was part of an active merchant community that was involved in trade between the Indian Ocean and the Mediterranean Sea. In addition to being a commercial center, Mecca was a religious center with a shrine that housed important religious relics from many of the tribes in the region. Muhammad's own family was influential in both religious and commercial activities, but his father died before he was born, and his mother died when he was still young. As a young man he gained a reputation for reliability

and married a prosperous widow, Khadijah, whose affairs he managed. His life was transformed when he experienced his first revelations around 610 CE.

The Meccan belief system at that time was basically polytheistic, but Meccans were familiar with Christianity and Judaism. Muhammad preached a message of strict monotheism and soon aroused the opposition of the Meccan merchant elite. After many struggles he and his small community of followers moved to Yathrib, a neighboring oasis community whose leaders invited Muhammad to come and be the arbitrator and judge in its disputes. The oasis became known as Medina, or “the city [Medina] of the Prophet.” This migration in 622 CE is called the Hijra and marks the beginning of the Islamic community as a distinct entity. Muslims date the years of the Islamic era from the Hijra, with 622 CE being year 1 in the Islamic calendar. This calendar is based on a lunar year of approximately 354 days or twelve lunar months.

During the next ten years most of the people in the Arabian Peninsula became Muslims or were allied in some way with the new Islamic community. The defeat and conversion of Mecca was an important step in this process. The shrine of the Kaaba, a cube-shaped structure at the center of Mecca, was purified of polytheistic relics and recognized as the altar of Abraham. In the prescribed prayers Muslims were to face the Kaaba (for a short time they faced Jerusalem), and the building became the center of pilgrimage rites. The basic foundations of the Islamic belief system and the Islamic community were laid.

The Era of the Caliphs

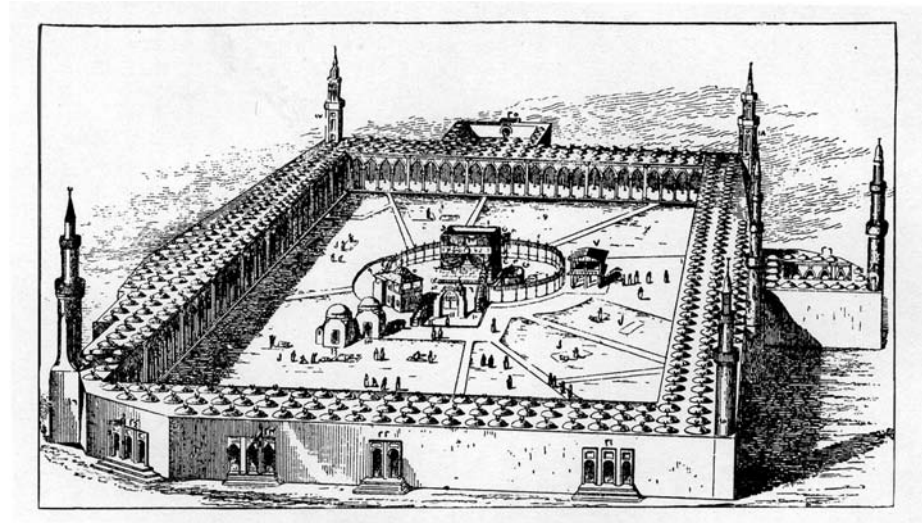
The Islamic community was dynamic by the time of Muhammad’s death in 632 CE. Some confusion existed about the transition to a community without Muhammad. The majority of the community accepted the idea that the successor (*khalifah* or caliph) to Muhammad as leader would be one of his close companions, Abu Bakr. A minority within the community came to believe that the idea was an error and argued that the first successor should

have been the son-in-law and cousin of Muhammad, Ali. In later tradition this minority group came to be identified as the faction (Shiah) of Ali (Shi’as), whereas the majority were called “Sunni” (those who follow the Sunnah or precedents of the community).

The first four caliphs were all close associates of Muhammad (two were the fathers of wives he married after Khadijah died), and their rule is identified by Sunni Muslims as the era of “the Rightly-Guided Caliphs” (632–661 CE). Under their leadership Islamic armies conquered all of the Sasanid Empire and most of the Middle Eastern territories of the Byzantine Empire. Through these conquests the Islamic community became the heir of the great imperial traditions of Persia and Rome as well as the Middle Eastern monotheistic traditions. In structure and administrative practices the emerging caliphate resembled the older empires that had been conquered.

The political history of the Islamic community during the early centuries involves the rise and fall of dynasties controlling the caliphal state, and the political experiences of the community shaped the belief systems that developed. Civil war brought an end to the era of the Rightly-Guided Caliphs, and the new political community was ruled by the Umayyad dynasty (661–750 CE) and then by the Abbasid dynasty (749/750–1258).

Early Abbasid caliphs built a new capital at Baghdad, not far from the location of ancient imperial capitals. Although the Abbasid state was strong, it never established control over all of the territories of the Islamic world. Umayyad princes continued to rule in the Iberian Peninsula, and gradually independent Islamic states were established across North Africa. By the end of the tenth century CE three caliphs claimed authority in parts of the Islamic world—an Umayyad ruler in Spain, a Shi’i ruler in Egypt, and the Abbasid caliph in Baghdad. Local military rulers, who came to take the title of “sultan,” increasingly dominated political affairs. The Mongol conquest of Baghdad in 1258 CE brought an end to the Abbasid caliphate. Although the concept of the caliphate as a symbol of Islamic unity continued, basic Islamic



A mosque in Mecca in the early twentieth century.

political organization took the form of sultanates, representing rule by military commanders. This transformation was possible because of the evolution of the nature of the Islamic community itself.

The Faith-Based Community

During the early centuries of Islamic history the caliphate was the most visible aspect of the new Islamic community. However, the development of the Islamic belief system provided the basis for a faith-based community that involved more than an allegiance to a particular ruler or political system. The definition of a legal and normative framework that shaped politics but that was independent of the state helped to create a sense of community identity. The development of popular devotional organizations associated with the growing importance of Sufi (Islamic mystic) brotherhoods strengthened this identity.

The Islamic belief system initially developed within the framework of the caliphate but was not tied to the specifics of the political system. Scholars, not political leaders, undertook the important functions of interpreting the Qur'an and organizing the traditions (hadith) of Muhammad as basic sources for law and guidance. These scholars, literally the "learned people" (*ulama*), never became an ordained clergy and maintained independence from rulers. However, the political and legal dimensions of the Islamic faith were an important part of the belief system. These dimensions were the primary area of disagreement among Sunnis and Shi'as. The Sunnis

believed that the historic caliphate was Islamically legitimate, whereas the Shi'as insisted that the only legitimate ruler would be the divinely designated imam (an Islamic leader) who would be a descendant of Muhammad. Most Shi'as are called "Ithna Ashari" or "Twelvers" because they believe that the twelfth imam in the series was taken into divine seclusion and will return at some future time to establish God's rule.

The *ulama* during Abbasid times developed a framework of legal concepts and precedents that provides the foundation for the legal and normative structures of the sharia (Islamic law). No single system of canon law developed. Instead, among the Sunni majority, four schools of legal thought, each identified with a major early scholar—Hanafi (Abu Hanifa, d. 767), Maliki (Malik ibn Anas, d. 796), Shafi'i (Muhammad Shafi'i, d. 819), and Hanbali (Ahmad ibn Hanbal, d. 855)—were accepted as authoritative. Among the Shi'as most recognized the legal thought of Jafar al-Sadiq (d. 765), the sixth imam. In these schools the fundamental sources of the sharia were agreed to be the Qur'an and the traditions or Sunnah of Muhammad. Although theology was important, the core intellectual disciplines for Muslims became legal analysis (*fiqh*) and collection and analysis of the hadith (reports of the words and actions of Muhammad). Differences arose regarding analogical reasoning and consensus of the community. Use of independent informed judgment in analysis was called *ijtihad*. In later centuries Sunnis limited its scope more than did Shi'as.



The content of this legal structure emphasized the universality of law based on God's revelation and the equality of all believers. It was not strictly speaking a code of law; it was rather a framework for a just and virtuous society. The sharia defined both the duties to God and social responsibilities. It covered commercial practices, family life, and criminal behavior. This vision of society did not depend upon a particular state structure and could be presented by scholars rather than rulers and soldiers.

The faith of the majority of the population was also shaped by popular preachers and teachers whose devotional life was an inspiration. The development of special devotional paths or *tariqahs* is associated with what came to be called "Sufism," the mystical piety of early inspirational teachers. By the eleventh and twelfth centuries CE social organizations associated with these devotional paths became an increasingly important part of Islamic societies. The devotional paths emerged as brotherhood organizations that were instrumental in the Islamization of societies in central and southeastern Asia and sub-Saharan Africa.

Expanding Community and the Great Sultans

The Islamic world virtually doubled in size between the tenth and the eighteenth centuries. Great trade networks brought Islamic merchants to most regions of the Eastern Hemisphere. Islamic scholars and Sufi teachers followed, and dynamically growing communities of believers developed as interactions with local people set in motion activities that resulted in the gradual Islamization of societies.

By the sixteenth century the great central states of the Islamic world represented a commanding dynamism. In the eastern Mediterranean the Ottoman Empire began during the thirteenth century in the Aegean area, conquered Constantinople (modern Istanbul, Turkey) in 1453, and, by the eighteenth century, controlled much of the Balkan Peninsula, the Arab world, and North Africa. In southern Asia the smaller Islamic sultanates of medieval times were replaced

by the Mughal Empire, which dominated virtually the entire Indian subcontinent by the seventeenth century. In western Africa a series of increasingly Islamized states beginning with medieval Ghana and Mali and ending during the sixteenth century with the Songhai Empire established Islam as a major historic force in the region. Similar developments took place in southeastern and Central Asia.

A dramatic change occurred in the Persian-Iranian heartland. Iran had long been an important part of the Sunni world, with some Shi'a minority groups. However, around 1500 a militant popular religious group called the "Safavids" conquered much of modern-day Iran and beyond. During the next century the Safavid rulers declared Ithna Ashari Shi'ism to be the religion of the state, and most Iranians converted. Shi'i scholars came to the Safavid Empire, especially from the Arab world, and received privileges that gave the *ulama* in Shi'i Iran a special influence that has continued to the present.

Challenges of the Modern Era

This powerful and expanding Islamic world had long interacted with western European and Christian-majority societies. These interactions entered a major new phase during the eighteenth century with the transformation of western European societies, especially through the Industrial Revolution, and the beginnings of European imperialist expansion. Throughout the Islamic world Europeans came to dominate Islamic lands, and Muslims responded in many ways. Muslims mounted major efforts to fight European expansion, as in the wars led by the emir (ruler) Abd al-Qadir in Algeria after the French invasion of 1830. Most military opposition failed.

Leaders in major Islamic countries introduced programs of reform to reshape their societies and states using Western models. Early reformers included Muhammad Ali in Egypt (reigned 1805–1849) and the Ottoman sultan Mahmud II (reigned 1808–1839), whose programs laid the foundations for the emergence of modern-style secular states. Later other reformers



A leaflet in Arabic and Chinese used by Muslims in China in the nineteenth century.

emphasized intellectual and religious dimensions. By the end of the nineteenth century efforts to create an effective synthesis of Islam and modernity resulted in the movement of Islamic modernism. Major figures are Muhammad Abduh (1849–1905) and Jamal al-Din al-Afghani (1839–1897), whose ideas influenced groups as diverse as the Muhammadiyya movement established in Java in 1912 and intellectuals in India and North Africa. A different emphasis in reform is provided by more puritanical movements that seek a “return” to a more strict adherence to Islamic norms interpreted in a relatively literalist manner. This mode of reform has deep roots in Islamic history and can be seen in the premodern movement of Muhammad ibn Abd al-Wahhab (1703–1792), whose ideas have been an important part of modern Islamic revivalist movements.

The broad spectrum of responses to the challenges of modernity in the nineteenth century extended from the Westernizing programs of state reform to the explicitly Islamic modernists and fundamentalists. The work of all of these people set the framework for the developments of states and societies in the Muslim world during the twentieth century. By the end of the nineteenth century few groups could be considered purely non-modern (or, in the terminology of twentieth-century social scientists, “traditional”), since even the most conservative were interacting with the modernity of the time. That era was still largely defined by Western European experiences, so that modernization tended to be viewed as a process of Europeanization or Westernization. But by the end of the nineteenth century, distinctive non-European modes of modernity were beginning to be visible, and the emergence of these different styles of modernity would play an important role in shaping the history of Muslim societies and thought in the twentieth century.

Twentieth-Century Modernity

Global Muslim communities experienced important transformations during the twentieth century. At the beginning of the century, most of the Muslim world was under direct or indirect European imperialist control, and the emerging political systems were primarily conceived as Western-style nation states. Explicitly Islamic movements and organizations were often viewed, even by “modern” Muslims, as anachronisms and obstacles to modernization. By the end of the twentieth century, however, virtually every Muslim majority society was politically independent, and classical European imperialism was an image from a seemingly distant past. An explicitly Islamic republic was created by a revolution that overthrew a Westernizing autocracy in Iran in 1979, and the new Islamic republic was sufficiently strong at the beginning of the twenty-first century to be viewed as a potential nuclear power and as an important major regional power. Muslims and Islamic movements became major influential agents in global affairs.

Prayer carries us half way to God, fasting brings us to the door of His palace, and almsgiving procures us admission. • Qur'an

This transformation involved three broad historical phases, which can be defined in terms of the evolution of modernity itself during the twentieth century. In the era of domination by European imperial powers during the first half of the century, most new movements followed European-style patterns of political development. Resistance to European rule took the form of nationalist movements, and social and political reforms were generally secular in orientation. Modernity was defined in Western European terms. The most successful of these movements was led by Mustafa Kemal Atatürk, who built a secular nationalist state in Turkey after the collapse of the Ottoman Empire in World War I.

In the middle of the century, following World War II, the second phase was shaped by the experience of newly-achieved political independence. Most Muslim states became politically independent, and various forms of secular and radical nationalism dominated the intellectual and political scene. Leaders such as Gamal Abd al-Nasir in Egypt and Ben Bella in Algeria incorporated Islamic themes into their radical nationalist programs, but these programs were not primarily Islamic in orientation or identification. By the 1960s, it appeared that the most important political developments and reform movements in the Muslim world represented radical programs of modernity that competed with older visions of modernity. Competing definitions of modernity—or multiple modernities—shaped Muslim policies and visions. An important culmination of this development was the Islamic Revolution in Iran in 1979, when radicalism was defined in explicitly Islamic terms, and the older more secular forms of radicalism became marginalized.

By the final quarter of the twentieth century, distinctively Islamic modernities were articulated as the bases for social visions and political programs. The new movements in the third era of twentieth-century Muslim history had some roots in earlier organizations that were modern in organization but more puritanical in terms of intellectual content. The most important of these groups are the Muslim Brotherhood, established in Egypt by Hasan al-Banna in

1928, and the Jamaat-i Islam, established in 1941 in India by Abu al-Ala Mawdudi.

In the final decades of the century, the major signal that the radical and the secularist nationalist movements had failed to bring the expected prosperity and freedom to Islamic peoples was the Iranian Revolution of 1979, which brought to power a regime dedicated to a full implementation of Islamic rules and norms. During the early 1980s many other movements with strongly defined Islamic goals and agendas came to prominence. These movements represent the emergence of what came to be called “political Islam” because the primary focus of the programs was the control of the state. Some movements, such as the Islamic Salvation Front in Algeria, contested elections, whereas others, such as the Mujahidin in Soviet-occupied Afghanistan, engaged in violent opposition defined in its terms as jihad. These movements of jihad became a significant part of the Islamic experience of the 1990s. In the context of globalization, militant global networks such as al-Qaeda represented an important part of Islamic interaction with the world. However, such movements remained only a small part of Islamic life and often were in conflict with the mainstream Islamic organizations and sentiments that reflected the views of the majority of Muslims.

Although the movements of political Islam attracted the most attention, other important trends also developed during the 1980s. Intellectuals gave increasing attention to the definition of the place of women in Islamic society, and by the beginning of the twenty-first century, an “Islamic feminism” had emerged. This feminism involved a reexamination of the Qur'an, noting the Qur'an's emphasis on the equality of all believers and then noting the influence of more patriarchal perspectives in the way that the Islamic tradition was historically defined. Similarly, some intellectuals have emphasized pluralistic dimensions of the Islamic worldview and tradition and have also drawn back from the emphasis on political activism as a means for imposing Islamic norms.



Some of the impetus for these developments has come from the emergence of minority Islamic communities in western Europe and North America as important parts of the broader Islamic world. In those regions issues of gender equality and religious pluralism have great importance for Islamic community life.

New Twenty-First Century Realities

The continuing significance of religion at the beginning of the twenty-first century confirms the development of forms of modernities that are different from the definitions of modernity popular during the nineteenth and much of the twentieth century. Contrary to the expectations of theories of modernization in those periods, modernization did not mean the inevitable nonreligious secularization of state and society. In the Muslim world, new movements develop that are not simply continuations of old-style movements from premodern times or even twentieth century modern movements in some slightly different form.

The new movements that get the most attention are the militant movements like al-Qaeda. These are clearly different from the early Sufi movements of resistance to European imperialist expansion in the nineteenth century, and from the activist radical nationalist movements of the twentieth century. Globalization and the new electronic media of communication transform the nature of organization and shape the way that the messages of the movements are framed.

The largest of the new movements are not, however, the terrorist organizations. Throughout the Muslim world, new popular preachers and teachers have millions of followers in many countries. Islamic television ministries like that built by the Egyptian Amr Khaled are reshaping the ways that many Muslims participate in the sense of belonging to a global community of believers. Analysts speak of “iMuslims” and “e-jihad” in ways that illustrate the new modernities of Muslims in the world of the twenty-first century. The

long history of the flexible adaptations of the Islamic community and belief system to changing historic conditions suggests that new forms of Islamic institutions and perspectives will continue to be defined by believers.

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See also Islamic Law; Islamic World; Muhammad; Pilgrimage; Rumi

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Islamic Law

The authority of the Qur'an, as well as the development of schools that interpreted and codified the Prophet Muhammad's (c. 570–632 CE) traditions, shaped Islamic law (*sharia*) over many centuries. The *sharia* extends beyond a legal framework to instruct Muslims about personal, religious, social, and political aspects of life.

The word *sharia* is normally translated as Islamic law, but not law in a narrow sense. It might better be translated as “a way of life,” as is suggested by its literal translation, “a way” or “a path.” In other words, the *sharia* instructs about all that is personal, religious, economic, social, and political. Generally, only four sources for the prescriptions and prohibitions of the *sharia* are recognized: the Qur'an, the Sunna, consensus, and analogy. But this is an idealization of how the law came to be formed, as it actually took several centuries, the growth of the schools (*madrasahs*), and codification of the traditions (*hadith*) of Muhammad and his companions for the *sharia* to reach full development.

The first source of law for the *sharia* is the Qur'an. For Muslims all aspects of life fall under the purview of the commands of God, for he is the almighty and supreme lawgiver. His will is recorded in the Qur'an, and so following it is a religious duty of a Muslim. The Qur'an is thus both scripture and legal document.

The Qur'an repeatedly orders Muslims to obey Muhammad and states that he is their example. As the Prophet, his functions included explaining and applying the revelations, and acting as the judge for his people. And, since Muhammad was divinely guided, his actions and sayings are God's will. Thus, the conduct of Muhammad, known as the Sunna and

transmitted in the form of *hadiths* (traditions), is also legally binding. In the Sunna, many of the legal subjects of the Qur'an are elaborated and many others are addressed. Thus, while the Qur'an is the supreme source of the *sharia*, many of its laws are derived from and dependent upon the interpretations of the Sunna. There is a considerable range of opinion about the Sunna, even today. For many Muslims the traditions serve only as a general guide; but for just as many, they serve as a source of law second only to the Qur'an.

There is a *hadith* that states Muhammad said, “My community will never agree in error.” If *hadiths* are indeed legally binding, then this *hadith* implies that consensus is an acceptable source of law as well. Thus, whatever is accepted by the entire community as true or prescribed must be treated as true or prescribed.

The fourth source of law is reason by analogy. For example, if the Qur'an prohibits the use of wine, then narcotics are also, by analogy, prohibited. The principle is that the impairment to one's judgment caused by wine is analogous to that caused by narcotics. If the former is prohibited, then the latter is also.

The Major Schools of Law

That Muslims came to see these four sources as the only legitimate ones is largely due to the work and influence of the great jurist, Abu 'Abd Allah ash-Shafi'i (767–820 CE). Prior to him, Muslim rulers had laws in their empires; however, these laws could vary enormously from region to region. Arab tribal law, Qur'anic prescriptions, and local Byzantine or Sasanian law were used as needed. A rapidly expanding empire and administration forced them

to be expedient. In the cities of the empire various law schools were forming. Each of them used slightly different methods and so produced different laws. In Medina a school formed around Malik ibn Anas (c. 715–795 CE), who produced the first Muslim legal compendium, in which he discussed various legal issues by citing the relevant verses from the Qur'an and hadiths from the Sunna, and then interpreted them in light of consensus of opinion of jurists in Medina. Another important school was formed around the scholar Abu Hanifah (699–767 CE) in Al-Kufa. The cosmopolitan nature of the city and its distance from the Mecca and Medina resulted in many different interpretations of the law. For example, in the case of a wrongful death in Medina, the guilty person's whole tribe was responsible for his actions and had to pay compensation to the family of the dead man. In Medina, Arab tribal ways were still the custom. In Al-Kufa, the Arab tribal system was weakening and being replaced by new urban social structures. Thus, only the guilty party was responsible for paying the compensation. The Hanafi school in Al-Kufa respected the Qur'an and Sunna, but was more open to outside influences such as Roman law and the use of reason.

Ash-Shafi'i, seeing these differences, thought that the methods used to produce Islamic laws should be the same from place to place and ruler to ruler because the sharia, as God's law, must itself be uniform. The supremacy of the four sources and yet another school of law, the Shafi'i, developed out of his work. So influential was ash-Shafi'i and his emphasis on the Sunna that both the Maliki and Hanafi schools eventually largely adopted his four-sources model for themselves.

The last of the four schools of law that have survived until today in Sunni Islam is that of Ahmad ibn Hanbal (780–855 CE). Ash-Shafi'i, despite his focus on the Qur'an and the Sunna as sources of law, represents a compromise between those who used reason as a source and those who rejected it. Ibn Hanbal belonged to this latter group. Each and every law must be rooted in either the Qur'an or the Sunna. Ibn Hanbal took this principle so seriously that it is said

that he refused to eat watermelon because it was not mentioned in the Qur'an, nor did he know of a tradition from the Sunna that indicated that Muhammad had eaten it. (This is hardly surprising, since watermelon would not have grown in any of the regions in which Muhammad had lived.)

There were several other schools of law in Sunni Islam, but only the Maliki, Hanafi, Shafi'i, and Hanbali survive. The Abbasid dynasty adopted the Hanafi school. It spread to India and from there to east Africa and Southeast Asia. The Ottomans also adopted it and so today it is the law followed by Muslims of Bosnia and Herzegovina, Turkey, Syria, Iraq, Jordan, and portions of Egypt and North Africa. The Maliki school spread west from his home in Medina to Africa. The Sudan, Eritrea, Somalia, Libya, Tunisia, Algeria, and parts of Egypt and Nigeria practice Maliki law. The Shafi'i school spread in opposite direction. It began in Egypt but moved to South Arabia, then east along trade routes to the Indian coast and Southeast Asia. Most Muslims of Malaysia, Singapore, Indonesia, the Philippines, and Sri Lanka adhere to the Shafi'i school. The last school to form, the Hanbali, is only practiced in Saudi Arabia.

Islamic law in Shi'a tradition is different. The Qur'an and the Sunna are still the most important sources of law. However, Sunnis and Shi'as differ on other sources of law in several significant ways. First, the traditions that form the Sunna for Shi'i Muslims are different than those for Sunni Muslims. Second, the legal opinions of the imams are also binding for Shi'as because God guided the imams. And third, for Imami (or Twelver) Shi'i Muslims (whose imam is hidden) consensus has no legal force, but the use of reason by the top jurists, who are thought to be under the influence of the hidden imam, is encouraged. Today, this school of law continues to be practiced in Iran.

The Use of Reason

Each of the different law schools had a different approach to the use of reason. For some, the use of reason in matters of law was not much different than



the scholar's opinion. But this approach was eventually rejected by almost all and the common view was that a jurist had no right to produce law on the basis of what he supposed to be right. Instead, opinion had to be backed by a source such as the Qur'an or the Sunna. The problem was that if each jurist used his own opinion, the law would not only vary from region to region, but from person to person. And, more importantly, law based on human opinion was not divine law. This use of opinion was strongly opposed by the Shafi'i and Hanbali schools. However, in the early Maliki and Hanafi schools opinion in the form of reason was used, although many of their conclusions were later supported by use of the four sources of Islamic law.

Opinion or judgment was still used in analogy and consensus. That is, the jurist had to determine what was common between a previous case and a new case when an analogy was adduced. (In the example above, it was the impairment caused by both wine and narcotics.) Likewise, consensus as a source of law implies consensus of opinion. However, because of the diversity of Muslims, the use of this method was impractical in all but the most basic beliefs and practices. In addition, the opinions, or more accurately the formal legal judgments, of Muhammad's companions, such as the rightly guided caliphs, were often considered legally binding.

Further Options for the Jurist

There are two other sources of law that are closely related to each other and to the use of reason. The first allows judges some leeway in the interest of fairness. The jurist is allowed to pick the solution that seems to him the fairest of all possible solutions to a legal case. The second is consideration of public welfare. That is, a regulation that prevents harm to or secures a benefit for the community can be issued by a jurist.

Each of these rational methods is practiced by at least some of the schools of law. None, including the use of analogy, is allowed to infringe on stipulations provided by the Qur'an and the Sunna. Nor do these methods have relevance when it comes to religious

doctrines and practices; such matters are the exclusive jurisdiction of the Qur'an and the Sunna. However, they do demonstrate that the sharia can be and has been partially adaptable to new situations as they arise, despite the rigid framework that ash-Shafi'i promulgated.

Customary Law

Prior to the revelations to Muhammad, the Arab tribes may not have had a formal legal system, but they did have traditional ways of doing things that, even if they were not written down, did regulate and guide their lives. This Arab tribal custom survived the coming of Islam. In fact, Arab tribal law and perhaps even some of Roman (Byzantine) and Sasanian law as practiced in Egypt, Syria, and Iraq were incorporated into the sharia.

In the sharia, custom is not normally a formal source of law, and when it is, it is not given much prominence. In practice however, it had an enormous impact. Custom was absorbed into the sharia in many ways. Sunna not only consists of that which Muhammad said and did, but also that of which he tacitly approved. That is to say, activities of Muslims of Muhammad's time, if he did not explicitly comment on them, are assumed to have had his silent approval. The Maliki school based in Medina held that as the ones living in the home of the Prophet, they, more than anyone else, practiced the customs of which Muhammad approved. For the founder of the Maliki school, Malik ibn Anas, the local custom of Medina was equated with consensus—since all (Medinan) Muslims agreed on their custom. In this manner more Arab tribal custom entered the sharia.

Qanun (Sultanic Prerogative)

The sharia is normally thought of as encompassing all aspects of life. It provides regulations concerning activities as diverse as performing prayer, paying tithes, getting married, committing adultery, charging interest on loans, receiving inheritance, obeying authorities, and taxing Jews and Christians. The

religious, social, economic, and political all fall under the purview of the sharia. And so it is assumed that the sharia regulates all aspects of life. However, the rulers of Muslim territories—caliphs, governors, and later sultans—found that they needed to make their own regulations for activities not addressed by the sharia. These regulations, civil laws, or codes came to be known as *Qanun*, from a Greek word for imperial taxes.

Qanun (especially in the sense of financial regulations issued by the ruler) began quite early in the Islamic world with the second caliph, ‘Umar I (c. 586–644 CE). He decided that the newly conquered land in Iraq that had belonged to the Sasanian state, aristocracy, and priesthood should not be divided among the conquerors, but held for the payment of salaries of Muslims. Likewise, the land tax system ‘Umar adopted was based on the Sasanian model. For such practices the sharia is silent, and so there is no conflict between it and *Qanun*.

From *Qanun* as financial regulations, which were issued by the caliph or some other ruler, developed the practice of sultans issuing laws not found in the sharia, which they ordered without any consideration for the legal principles that were used to establish laws in the sharia. That they could do so was based on power—their authority as the ruler.

Despite these dictatorial actions by some sultans, the *Qanun* and the sharia have generally been free of conflict. Originally, *Qanun* did not trespass into areas where the sharia had jurisdiction. Additionally, in the early years of Islam, there was more allowance for other sources of laws for the sharia. For example, decrees, like those by ‘Umar, along with customary law, could be integrated into the law by interpreting them as in accord with the behavior of Muhammad, his companions, and the early Muslim community, and not exclusively that of Muhammad. Also, a product of ash-Shafi’i’s reform was to produce a narrower definition of what constituted sharia. As a result, many of the administrative concerns of the caliphs and sultans fell conveniently outside of the sharia’s jurisdiction. This suited the sultans, who were eager to increase their own power vis-à-vis that of the caliph,

whose duty it was to enforce the sharia. Finally, the right of the sultan to make and enforce law was justified within the sharia by arguing that it served the public interest. And so jurists, and hence the sharia, gave to the sultan the jurisdiction in matters of the military, non-Muslim taxes, conquered land, penal codes, the economy, and any matter on which the sharia was silent. Moreover, the public had a religious duty to follow these orders from the sultan.

Sharia and Qanun

The situation changed somewhat after the fall of the Abbasids in 1258, when the sultan’s authority to generate all manner of laws greatly increased. The Turks and the Mongols brought from Central Asia a tradition that gave the ruler the power to issue decrees for the sake of justice and the welfare of the state as he saw fit. This form of state law became common in the Ottoman and Mughal empires. Under the Ottoman sultan Süleyman I (1494 or 1495–1566) an official set of *Qanun* were promulgated in the empire. Generally, a sultan would issue an edict as the need arose. These first applied only to administrative, financial, or penal codes. For example, under the Ottomans, guilds developed codes that judges of the *sharia* implemented. However, later in the Ottoman empire, *Qanun* also addressed property laws, a subject that is well covered by the sharia. Some jurists criticized this, as they believed that the sultans were overstepping their rights and could not supersede the *sharia* under any circumstances. Others supported the sultans by invoking legal principles of the good of the community, customary law, or even traditional laws, especially in newly conquered territories.

Traditional Laws in African and Asian Societies

Just as the pre-Islamic Arabs had customary laws, so too did the peoples to whom Islam came later. No less than those of the Arabs, the indigenous customs of these peoples, particularly in Africa, south Asia, and Southeast Asia, were very durable. However, they



could not be absorbed into the sharia through Sunna by means of tacit approval and consensus. Nor did these traditional laws, unlike Qanun, try to avoid the jurisdiction of the sharia. The traditions had to stand apart or even in opposition to the sharia. For some Muslim peoples, the social reality did not concur with the religious ideal that the sharia was the sole guide to a Muslim life. Islam became their religion, but not their way of life.

Of course, in reality there was often a compromise between the sharia and custom. At one end of the spectrum, the religious courts that implemented the sharia had largely eliminated local custom, and at the other there may not even have been religious courts, so that all legal matters fell under the purview of customary courts. However, the two could also operate in conjunction, dividing up the legal realm between them. That the sultan had some discretion in this matter made it easier to join traditional laws and the sharia. Occasionally, traditional practices could still be sanctioned by the sharia through the use of various legal means, such as juristic preference and ensuring public welfare. It was also possible for the sharia to function within the established religious courts, but for people to simply ignore the courts in favor of traditional ways. North Africa, India, and Southeast Asia are three regions of the Muslim world where people have often preferred their traditional laws and customs to the all-encompassing claims of the sharia. And, as we see below, in these contexts, an accommodation was often made between the two legal systems producing unique forms of Islamic law or at least unique ways in which it was enforced.

North Africa

In North Africa, the sharia and local custom often differed about such matters as marriage, inheritance, and rent for agricultural land. For example, when a Berber man marries, his family makes a payment to the bride's father, not to the bride as specified in the sharia. Nor, in direct contradiction to the Qur'an

and the sharia, is a woman allowed to inherit property under Berber custom. And the Berber practice of renting farmland by paying a percentage of the crops to the owner goes against the sharia's demand for a fixed, predetermined monetary fee. In matters of inheritance, some Berbers simply ignore the religious courts of the sharia in favor of custom, and in the matter of land rental, the sharia courts have come to recognize and administer the customary practice. Of course, this becomes even more complicated because the customs might differ among the Berbers of Tunisia, Morocco, and Algeria and even among those of a single country. In other regions of Africa, the sharia and local custom have combined to form a single, composite legal system.

India

In India, Muslims have always been a minority among a very large Hindu population. Hindu customs and laws therefore remained dominant even among the Indian Muslims. This is particularly true for inheritance and marriage laws. Several Muslim groups, following certain Hindu practices, excluded females from inheritance. Other Muslims, in the south, did direct inheritance to a woman and her descendants. Both practices violate the strict proportions assigned to various male and female family members by the sharia. Moreover, according to the sharia, no more than one-third of an individual's estate can assigned by him. This means that at least two-thirds of it must be divided in the stipulated proportions. Again, some Muslims followed the practice of Hindus, which allows the whole estate to be distributed as desired. With respect to the marriage, Muslim Indians of the South do exchange money, but it is the bride's family who makes a payment to the groom, a custom called dowry. Even the charging of interest on loans, an activity that is expressly forbidden in the sharia, was practiced by some Indian Muslims. Therefore, it seems that for Indian Muslims living in a Hindu society, customary practice was often more compelling than the sharia.

Southeast Asia

The third region in which the sharia and traditional ways clashed is Southeast Asia. Islam did not come to the region by conquest, so the Islamic legal system was not imposed on the native peoples of what are now Malaysia and Indonesia by force. Thus, unlike Muslims of North Africa and India, where elements of customary practice survive despite the presence of the sharia, Muslims in Southeast Asia continued to follow their traditional customs. For example, the sharia has not overridden the customs of the matrilineal societies on the island of Sumatra. In these societies, unlike in the Middle East, people trace their family ties only through their mother's family. This means that the relatives who matter most when it comes to inheritance are your mother's parents and her brothers and sisters.

The Ideal Versus the Reality

The assertion that the sharia, as God's eternal divine will for humanity, is applicable to all Muslims, at all times, in all places, and in all circumstances remains an ideal, but is often modified by the actual local practice of many Muslims. Customs concerning family and finances, particularly when combined as in issues of inheritance and marriage, tend to have a tenacious hold. Even in Arabia itself some Yemeni tribes refuse to abandon their custom of denying women the right to own property in contradiction to the sharia. Historical factors such as the manner in which Islam was

brought to a region and the degree to which people have adopted Islam affect whether it is the sharia or customary practice that is followed in daily life.

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See also Islam; Islamic World

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Islamic World

The Islamic (Muslim) world refers in a social or cultural sense to the community of Muslims spread across the globe. The term is also used in a geopolitical sense to refer to the collective of nations or states in which Muslims constitute a majority or in which Islam is the dominant faith, including politically. The Muslim world is also known collectively as the *ummah*.

The Islamic world is generally defined contemporaneously as consisting of nation-states whose population contains a majority of Muslims. The individual nations are not all contiguous with one another, although in particular regions, such as the Middle East, several of them are. It is a world of enormous diversity, including numerous ethnic groups, a wide variety of languages, cultural practices, and social customs. This fact appears to mirror the diversity promised in the Qur'an as part of the divine design and as a manifestation of divine mercy: "And of His signs," says the Qur'an, "is the creation of the heavens and the earth and the diversity of your tongues and colors. Surely there are signs in this for the learned!" (30:22).

The Ummah

The term "Islamic world" may be understood to be congruent with the Arabic term *ummah*, a nebulous, yet powerfully emotive concept that has existed since the advent of Islam itself. *Ummah* means "community" or "nation," and in general usage came to refer to the worldwide collectivity of Muslims, regardless of precisely where they lived.

The word *ummah* is of Qur'anic provenance and occurs sixty-two times in the Islamic scripture. In

specifically Qur'anic usage, *ummah* does not always refer exclusively to Muslims but to the righteous and godly contingent within a religious community. Thus the righteous members within the religious communities of Jews and Christians comprise "a balanced nation" (in Arabic, *ummah muqtasida*, Qur'an 5:66) and "an upright nation" (Arabic *ummah qa'ima*, Qur'an 3:113). The community of righteous Muslims is described in the Qur'an as *ummah wasat* ("a moderate or middle nation") and one that summons to the good and enjoins what is right (Qur'an 3:104). It is part of the divine plan, the Qur'an asserts, that there should be a multiplicity of religious communities, for "if He had so willed, He would have made you a single community" (Qur'an 5:48).

In the Constitution of Medina drawn up after the emigration of the Prophet Muhammad to Medina from Mecca in 622 CE, the Muslims and the Jews there are described as constituting a single community (*ummah*) with mutual rights and obligations. After the death of the Prophet in 632 CE, Islam expanded out of the Arabian Peninsula into the rest of western Asia and beyond. By the third century of Islam (ninth century of the common era), the Islamic realm stretched from the Indus River in southern Asia to the Oxus in Central Asia to Andalusia in southern Europe. In common—meaning extra-Qur'anic usage—the term *ummah* progressively came to refer exclusively to Muslims residing in far-flung lands united by their faith into one transnational and transregional community, or a diaspora.

As far as *ummah* may be regarded as having a political dimension, some political theorists of the medieval period conceived of this transregional Muslim polity in the following way. Theoretically and ideally speaking, the *ummah* would be united under the rule of one

Jean-Léon Gérôme, *La Prière au Caire* [*Prayer in Cairo*] (1865). Although Gérôme traveled to Turkey and Egypt, his painting shows a distinctly European view of Muslim society.



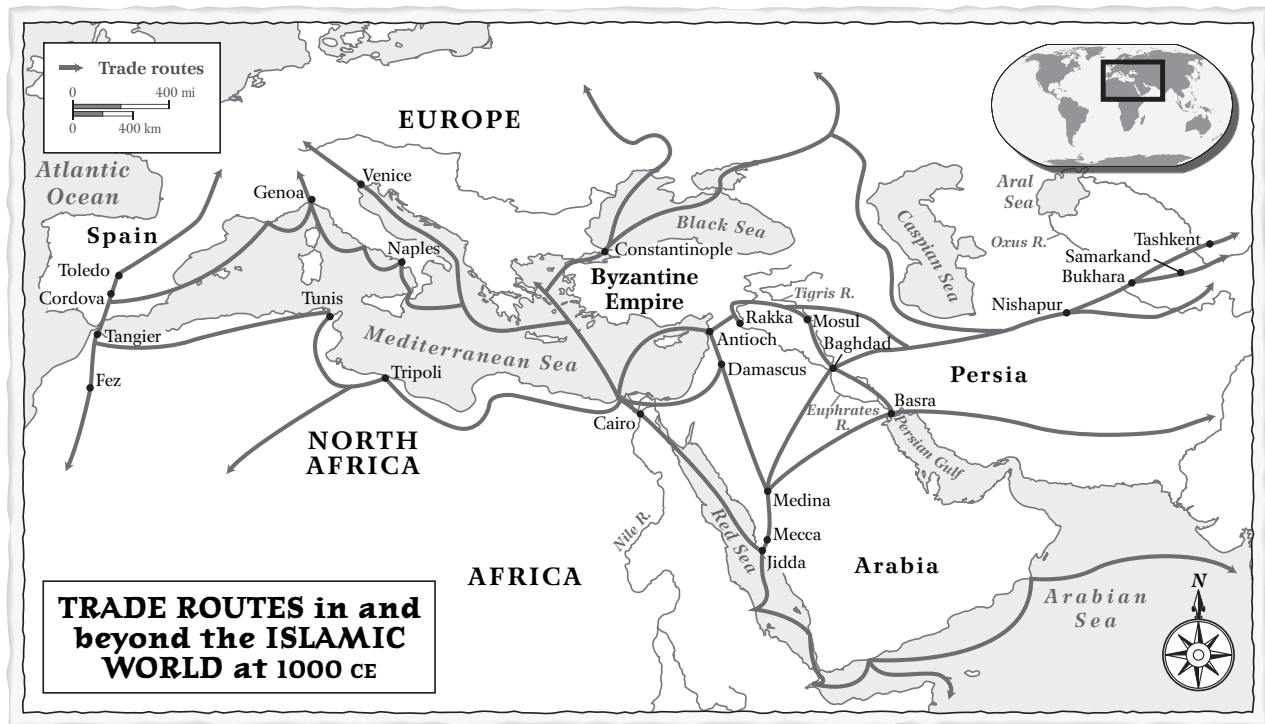
ruler, known as the caliph (Arabic *khalifa*, literally “successor” [to the Prophet]), sometimes known as imam. This ruler was conceived of as the first among equals, appointed by at least the tacit consent of the people and granted legitimacy through the formal allegiance of the people of eminence and influence. The caliph was expected to rule his subjects through consultation with the learned among them, and his primary function was to uphold the religious law, maintain law and order in his realm, and fend off outside aggression. As far as their political duties were concerned, the ruled in return were expected to pay their taxes to the state treasury and be loyal to their ruler, so long as he obeyed the religious law. The first four caliphs after the death of Muhammad are idealized as the “rightly guided” because they are perceived to have observed the tenets of good governance, particularly in holding themselves accountable to the people. The period of the Rightly-Guided Caliphs and the constellation of virtues attributed to them had a lasting influence on the conceptualization of the Muslim polity and its governance. At the very least, it created an ideal against which the performance of later governments could be measured and criticized for failing to live up to it.

By the middle of the eighth century, however, the *ummah* had a legitimate caliphate based in Baghdad and a counter-caliphate in Muslim Spain. By the next century, lesser rulers by the title of sultan or emir had

emerged, often ruling their territories with some measure of autonomy. By the eleventh century, political theorists started to acknowledge these changed realities and recognized the possibility of having more than one ruler for the Muslim polity, provided that at least a large body of water separated them.

The office of the caliph survived many vicissitudes of fate. It greatly diminished in the wake of the Mongol depredations in Baghdad in the thirteenth century but resurged under the Ottomans in the sixteenth century. The Ottomans circulated the story that the last Abbasid caliph (the Abbasids ruled from 749/750 to 1258, with their capital in Baghdad) had transferred the title of the caliphate to them and thus they were entitled to assume the office themselves. The last Ottoman caliph was deposed in 1924 by the Republican Turks, who abolished the caliphate.

The caliph, as at least the titular head of the worldwide Muslim polity, manifested the symbolic unity of the Islamic realm. And despite the diversity of cultures and languages in different parts of the Islamic world that were often politically autonomous, there was indeed a unity in terms of shared religious observances, social customs, and a distinctive way of viewing the world. The term *Islam* refers not only to the religion but to a civilization with a specific yet varied constellation of values. Islamic civilization was (and largely remains) multicultural, multiethnic, and



multireligious. Not only Arabs, but Persians, Indians, Africans, Chinese, Malays, and others have been an integral part of it, as have Jews and Christians, in addition to Muslims. We call the civilization and its world Islamic because all these diverse peoples lived (and continue to a certain extent to do so) under the aegis of various Islamic administrations, not necessarily because they adhered to the religion of Islam. The inhabitants of the Islamic world did (and do) subscribe to certain common Islamic civilizational values and ideas, such as charity, hospitality, and patronage of learning, which created (and creates) a sense of group solidarity and a shared identity.

Dar al-Islam

The world of Islam was also conceived of in specifically territorial terms, especially by the medieval jurists. They coined the term *dar al-Islam*, referring to the “abode” or “territory of Islam,” opposed to which was the *dar al-harb*, the “abode” or “territory of war.” The celebrated jurist ash-Shafi’i (d. 820 CE) added a third category: the abode or territory of treaty or reconciliation. These concepts and terms are not to be found in the Qur’an or in the prophetic Sunna (sayings and practices of Muhammad); rather, they reflect the legal and political pragmatism of these jurists,

who wished to make sense of and impose moral order on the historical reality of their times.

In this, they were following a time-honored custom of defining themselves and the polity they inhabited by demarcating the limits of the civilized world as they knew it from the realm of disorder and moral chaos. Greeks in classical antiquity saw themselves as the very antithesis of all non-Greeks, whom they termed barbarians; similarly, the pre-Islamic Arabs set themselves apart from the uncivilized non-Arabs. Among earlier religious communities, the Jews separated themselves from the impure non-Jews, while Christians regarded the unsaved infidel as beyond the pale. For the Muslim jurists of this period, the territory of Islam represented all that was lawful and morally right in God’s world, being under the governance of God’s law. Beyond its confines, the rest of the world was in need of divine guidance and, ideally speaking, through propagation of the message of Islam or by acknowledging the suzerainty of the Muslim ruler, could in time (so it was hoped) be brought into the abode of Islam. Such a world vision was created by the spectacular spread of Islamic dominion in the few decades after the Prophet’s death, which tended to foster a sense of the inevitable and ultimate triumph of Islam. Such a worldview, however, did not include the forcible conversion of nonbelievers,

He who knows not and knows not he knows not: he is a fool—shun him. / He who knows not and knows he knows not: he is simple—teach him. / He who knows and knows not he knows: he is asleep—wake him. / He who knows and knows he knows: he is wise—follow him. • Arabic Proverb

strictly forbidden in the Qur'an (2:256), but only their political capitulation, preferably peacefully, but through military means if necessary.

Thus, although Egypt and Syria were conquered militarily by the Arabs in the late seventh century, the native populations remained largely Christian until about the tenth century. Similarly, the military conquest of the western Indian province of Sind was followed by the extension of the status of "protected people" (*ahl al-dhimma*) to Hindus, a status traditionally reserved under Islamic Law for Jews and Christians, which allowed them to continue to practice their Hindu faith in return for fealty to the new Muslim administration. Such imperial designs were not supported by all jurists; dissenting jurists and many ordinary pious Muslims were aghast at the notion of offensive military activity that could be justified by the invocation of an assumed confrontational bipolar world.

By roughly the twelfth century, these terms had begun to lose their efficacy and began to be redefined in response to changing historical and political realities. The Muslim polity had become quite fractured, having split into several autonomous realms with independent rulers who sometimes fought with one another. Muslims also sometimes traveled to non-Muslim territories and settled there. The question was posed: were these realms and Muslims no longer to be regarded as a part of dar al-Islam? In recognition of the changed situation, some jurists in this period formed the opinion that non-Muslim territory in which Muslims were free to practice their religion could be subsumed under the rubric of dar al-Islam. Thus, already in the medieval period, we see a broadening of the concept of the Islamic world to include not only countries and regions where Muslims predominated, but also territories that included minority Muslim populations who were not impeded in the practice of their faith. In a similar vein, in the contemporary era, the term *Islamic world* now includes not only the traditional heartlands of Islam, but also Europe and North America, both of which have sizeable minority Muslim populations. This may be understood to reflect a resurgence of the concept

of the worldwide *ummah*, signaling certain shared values and common religious observances among Muslims regardless of where they may be located and whether they are under the political jurisdiction of a Muslim ruler or not.

The Contemporary Islamic World

The vast majority of Muslims today are concentrated in southern and Southeast Asia, the Middle East, and northern Africa, with sizeable minority populations in the rest of Africa and Asia, Europe, and North America. Islam has been described as the fastest growing religion in the world today, with currently about 1.2 to 1.5 billion adherents, or approximately one-fifth of our world's population. Although the Islamic world is seemingly disparate and even divisive, it is still possible to speak of it as cohesive at a certain level.

Shared traumatic experiences under Western colonial rule have forged at least formal alliances among a number of the Islamic countries (and also with other underdeveloped or developing countries with similar experiences). Many in the Islamic world today continue to feel very vulnerable and under assault from secular modernity, economic globalization, and Western cultural mores, sometimes regarded as a continuation of the previous era of physical colonization, and thus termed neo-imperialism or neo-colonization. Elements in Islamic societies have become radicalized due to a sense of impotency vis-à-vis the status quo in the postcolonial world. These radical elements have attempted to assert a highly politicized and in some cases highly militant Islamic identity in an effort to resist Western-generated globalization and secularization, and, one might say, the economic and cultural "occupation" of the Islamic world. From time to time, these elements have caused and continue to cause great havoc both in their own societies, since they oppose many of the local ruling elites (whom they regard as the willing clients of the West), and beyond. The vast majority of the people in the Islamic world do not endorse their bloody tactics, although they may share their economic and political frustrations.

A worldwide body claims to speak on behalf of Muslim peoples everywhere today and may be regarded as a modern-day concretization of the nebulous concept of the *ummah*. This body, known as the Organization of the Islamic Conference (OIC), established on 25 September 1969 in Rabat, Morocco, has fifty-seven members as of 2010 that represent countries with majority Muslim populations, plus thirteen observer states. The OIC website recognizes “the concrete expression of a great awareness, on the part of the Ummah, of the necessity to establish an organization embodying its aspirations.” Moreover, the OIC represents the desire on the part of the member states to “speak with one voice to safeguard the interest and ensure the progress and well-being of their peoples and those of other Muslims” throughout the world. The political leaders of the member states meet once a year in a major Islamic capital city. Certainly, the OIC may be regarded as a microcosm of the Islamic world, seeking to define a commonality of interests, mediate internal conflicts, and articulate a unified position on many current issues and political disputes. In recent years, the OIC has taken specific stands on global issues such as the Persian Gulf War, the United Nations’ peacekeeping efforts in Bosnia and Herzegovina, and the reconstruction of Afghanistan. Its effectiveness in both intra-Muslim affairs and global politics has been marginal to date but the OIC retains credibility as the sole organization which publicly articulates universal Islamic claims and aspirations and attempts to make them part of the global discourse.

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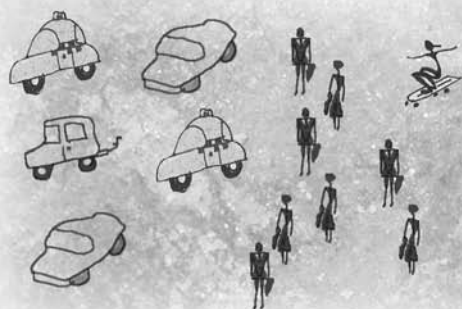
See also Akbar; al-Khwaizmi; al-Razi; Arab Caliphates; Arab League; Aurangzeb; Harun al-Rashid; Ibn Battuta; Ibn Khaldun; Islamic Law; Mansa Musa; Mehmed II; Mughal Empire; Osman I; Orientalism; Rumi; Saladin; Süleyman; Sokoto Caliphate; ‘Umar ibn al-Khattab; Warfare—Islamic World

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Islands

Islands are almost as diverse as they are numerous: large or small, rich or poor, inhabited or populated. From the earliest times, as populations settled ever farther around the globe, humans have coveted islands as stepping stones and colonies. Islands have served as trading posts, warehouses, naval bases, and refueling stations. They are still valued today for their often exotic environments and remote locales.

Geographers tell us there are 5,675 islands on the Earth measuring from 10 square kilometers (3.86 square miles) to 1 million square kilometers (3.86 million square miles), plus almost another eight million smaller islets. Islands cover only 7 percent of the planet's surface but hold 10 percent of its population and constitute 22 percent of its sovereign states, whose claims to territorial waters extend to a quarter of the oceans.

Islands are almost as various as they are numerous. A "continental" island is part of a continental shelf (Great Britain and Ireland, for instance, are continental islands attached to the European continental shelf); "oceanic" islands are the product of deep sea volcanic eruptions. Some islands stand alone; others belong to archipelagoes. Islands host a vast range of flora and fauna. There are islands that have never been inhabited and those that have seen a sequence of occupations. There are tropical and arctic islands whose temperatures remain about the same year round and temperate islands that experience changing seasons. There are islands linked to the mainland by bridges and tunnels and islands that can only be reached by water or air. Economically, there are poor

and rich islands, islands that are sovereign and those that are dependent on other nations. Islands come in all kinds of political persuasions, from democracies to dictatorships. Britain and Japan can be considered the two most prominent island nations in world history, but many islands have attained levels of development that are the envy of mainlands.

Defining Islands

Despite their variation, we tend to stereotype islands. Their history and geography have been defined by mainlanders, who are in the habit of thinking of them as uniformly small, peripheral, remote, isolated, and timeless. Islands and islanders have suffered the enormous condescension of continents. Up to the fifteenth century, Western geographers considered the world to consist only of islands—one large one, *Orbis Terrarum*, and many smaller ones. Early European explorers assumed that every land they encountered was an island, and it was not until the sixteenth century that continents and islands were finally distinguished from one another, islands being defined as any land completely surrounded by water.

Even now it is hard to separate islands from continents, as the latter are also seagirt (surrounded by the sea), and there has been a systematic questioning of the metageography of both islands and continents. It is now clear that islands have never been wholly peripheral or remote—nor have they been isolated or static. Considering them in the context of history reveals what a huge role islands have played in every stage in the mental as well as physical development of humanity. The species we know as *Homo sapiens* originated at the edge of the sea.



The South Island of Cies, in Galicia, as seen from the island of Faro. Fascination with islands (*islomania*) is a cornerstone of the modern tourist industry.

Once humans left east Africa behind, they began a process of island hopping that did not end until the whole Earth was occupied. Water has been the greatest facilitator of human movement and contact, an advantage that explains why islands have often been at the forefront of development. Prehistoric foragers used islands as fishing camps and trading posts. The fruits of the inland agriculture revolution in the Levant (eastern Mediterranean region) were transferred to Europe by way of the island of Cyprus about 6000 BCE.

Island Importance

Islands were vital to the ancients' mastery of the Indian Ocean and the Mediterranean Sea, where Phoenicians and then Greeks established colonies on islands. The first conquest of the Pacific, which began in remote Oceania about 4000 BCE, and was completed on the shores of New Zealand in 700 CE, was accomplished by island hopping. Pacific islanders think of themselves as occupying a great sea of islands they consider not at all remote or peripheral. Atlantic voyaging came much later but was accomplished in a similar manner. The Vikings island-hopped, and, had Columbus not imagined the sea to be filled with islands (most of them legendary), he would never have set out westward. He was

so convinced he had reached the offshore islands of India, that he misnamed the Caribbean Islands the West Indies. Until the early nineteenth century, searches for a sea route to India were inspired by the idea that North America was archipelagic and therefore passable by water.

From the earliest times, islands have been coveted as colonies. The Phoenicians and Greeks used them as access points to hinterlands. The European seaborne empires of the sixteenth and seventeenth centuries all used islands extensively. They served as fishing stations and fur trading posts. Sugar planting was transferred from the isles of the Mediterranean to the Madeiras and Canaries, and then to the Caribbean. Trading for slaves from the islands off the west coast of Africa made it unnecessary for Europeans to risk their health in the tropical interior. As European empires spread to the Indian and Pacific oceans, islands were vital as entrepôts (intermediary centers of trade and transshipment), victualing stops, and naval bases. For the next years, they were the most fought over properties in the world, at the very center of commercial, capitalist development. By the eighteenth century, the Atlantic had become its own sea of islands, brought close together by advances in navigation and a shared cosmopolitan culture. Until the nineteenth century, continents—not islands—were truly insular.

A self does not amount to much, but no self is an island; each exists in a fabric of relations that is now more complex and mobile than ever before. • Jean-Francois Lyotard (1924–1998)

Cultural Significance

Islands have played an exceptionally large role in Western minds. They have long been the object of spiritual quests, both pagan and Christian. They have frequently been identified with paradise, but also with hell (as in the case of the Galapagos Islands as described by Herman Melville). Thomas More used a fictional island to envision the first great utopia. William Shakespeare chose an island as the setting for his play, *The Tempest*, while Daniel Defoe's famous novel, *Robinson Crusoe*, is about a sailor shipwrecked on an island. Anthropology got its start on islands that served as laboratories for the naturalists Charles Darwin and Alfred Russel Wallace, founders of the science of evolution. Fascination with islands, sometimes referred to as *islomania*, continues to be a major theme in Western culture, and is a cornerstone of the modern tourist industry.

But even as the cultural significance of islands increased, their economic and political centrality declined. In the nineteenth century, the shift from commercial to industrial capitalism coincided with the rise of continents at the expense of islands. The new industrial cities were located on mainlands. The end of slavery in the nineteenth century produced a labor crisis in many island plantation systems. With the rise of steam power and the spread of railroads, the age-old advantage of water transport was much diminished. The value of islands as entrepôts, victualing stops, and fishing stations declined. In the twentieth century, islands all around the world lost population. Politics as well as economies of scale put islands at a disadvantage. In the wave of decolonization that followed World War II, many islands became politically independent only to find that they were still economically tied to their old imperial masters. In the postwar era, islands came to be seen as peripheral, isolated, and backward.

Island Challenges

Islands today find themselves challenged in a number of ways. Of all Earth's land forms, they are most

affected by rising sea levels and the frequency of storms caused by global warming. They continue to lose population to mainlands. Islanders constitute one of the world's largest diaspora populations, and many islanders left behind by relatives striking out for new lands are dependent on private remittances for survival. (Cuba's economy, for instance, has long depended on remittances, many of which are sent from Cuban Americans; the U.S. government placed further caps, in 2004 and again in 2009, on the amount allowed, and tightened standards so that remittances can be sent only to immediate family members.) On the other hand, islands have seen an in-migration of tourists and mainlanders looking for holiday homes. Assisted by bridge and tunnel building, this influx has led to the gentrification of islands nearest to mainland population centers. While the new arrivals come seeking the "island way of life," older residents fear the disappearance of *their* way of life.

Connectivity

In earlier phases of globalization, islands were often the facilitators of international trade and economic development. Today, they continue to play this role, though in a different manner. The world's largest single industry—tourism—is heavily dependent on them. Their offshore locations make them ideal headquarters not only for legitimate multinational businesses but also for drug smugglers, pirates, and spy operations. As so much of the world's commerce is carried by ship, their importance as naval and air bases is again growing. Because of their small size, many islands have proved exceptionally nimble in adopting new technologies. But, as the experience of Iceland has shown, when islands become models of interconnectivity they can become vulnerable to world economic crises. Iceland's economic boom, low unemployment, and relatively equal distribution of wealth—a result of the rapid global expansion of its financial sector in the early 2000s—proved unsustainable; exposure to the world market resulted in the sharp depreciation of the krona and the subsequent failure of Iceland's three largest banks in 2008.

Today, few islands are truly remote, peripheral, or insular. Islands certainly do not exist in stasis. It no longer makes sense to distinguish islands and continents or to stereotype them or their inhabitants. The Earth is itself can be seen as an island in a larger universe. Its inhabitants occupy a sea of islands, some large, some small, but all intensely interconnected and interdependent. The future of both mainlands and islands depends on how well that fact can be reconciled. Only by viewing islands in the proper context of world history can their agency and significance be appreciated.

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See also Migrarion—Overview; Oceania; Tourism; Trading Patterns, Indian Ocean; Trading Patterns, Mediterranean

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Jainism

The cosmology of Jainism, originating in India as early as the sixth century BCE, asserts that karmic particles adhere to the soul and obstruct its true nature. Through acts of benevolence, and by adopting a strict moral code of nonviolence (*ahimsa*), some 4 to 6 million practitioners of Jainism today—mainly in India, eastern Africa, Britain, and North America—seek to shed their karmic burden.

The Jaina tradition arose in India more than 2,500 years ago. The great Jaina teacher Mahavira Vardhamana (c. 500 BCE) was a contemporary of the Buddha, and both taught a doctrine grounded in renunciation of worldly concerns. Starting around 300 BCE, two strands of Jainism arose: the Digambara group, found mainly in south and central India, and the Svetambara group, found mainly in western and northern India. The Digambara require total nudity for their most advanced monks and claim that women must be reborn as men to achieve liberation (*kevala*). The Svetambara allow their monks and nuns to remain clothed in white and allow for the possibility of women's ascent to the highest spiritual realms. Most Jaina follow a lay life and have excelled in business, particularly in publishing, pharmaceuticals, the diamond trade, marble, and textiles. Although many Jaina self-identify with the larger Hindu tradition, census figures place the Jaina population at between 4 and 6 million.

Jainism emphasizes the teaching of nonviolence (*ahimsa*). According to the tradition, karmic particles adhere to the soul, obscuring its true nature. By the progressive application of five ethical vows, one is able to diminish and eventually expel the influence of karma, resulting in spiritual liberation. Twenty-four

great teachers (*tirthankara*) are said to have attained this goal and set an example for others through their teachings; the first is known as Adinath, or Rishibha, who is said to have established agriculture, kingship, marriage, and the spiritual path. Mahavira is the most recent; his immediate predecessor was Parshvanatha (c. 800 BCE).

The earliest extant Jaina text is the *Acaranga Sutra* (c. 400 BCE), written in the Prakriti language and revered by the Svetambara community. It provides detailed instructions on how to practice the five great vows: nonviolence (*ahimsa*), truthfulness (*satya*), not stealing (*asteya*), celibacy (*brahmacharya*), and nonpossession (*aparigraha*). Both traditions agree on the intricate Jain theory of karma and cosmology outlined by the scholar Umasvati in his *Tattvartha Sutra*, a Sanskrit text written in the fifth century BCE.

Umasvati's *Tattvartha Sutra* proclaims that countless individual life forces (*jiva*) have existed since the beginning of time. They take many interchangeable forms and are found in the four elements of earth, water, fire, and air, as well as in microorganisms (*nigodha*), plants, and animals. At the point of death, the life force moves from one body to the next, depending on its karmic constitution. The goal of Jainism entails an elevation of consciousness about one's karma, leading to birth in a human body, and the adoption of a nonviolent lifestyle that will ultimately free a person from all karmic entanglements. At this final stage of blessedness, one ascends to the realm of perfection (*siddha-loka*) wherein one dwells eternally observing the machinations of the world but never again succumbing to its allurements. All twenty-four great teachers of Jainism are said to have attained this state, along with an undetermined number of saints.

I adore so greatly the principles of the Jain religion that I would like to be reborn in a Jain community. • **George Bernard Shaw (1856–1960)**

Umasvati categorized forms of life hierarchically according to the number of senses they possess. The lowest realm, Earth organisms and microorganisms, as well as plants, possess only the sense of touch. Earthworms and mollusks have as well the senses of taste and touch. Crawling insects have, in addition, a fourth sense: smell. Moths, bees, and flies add a fifth: sight. The Jaina place animals that can hear—and those that can hear and think, including reptiles, birds, and mammals—at the highest realm. As such, these life forms develop moral agency, and can make clear decisions about their behavior. Jaina cosmology imbues all aspects of the world that surrounds us with feelings and consciousness. The earth we tread upon, the water we drink, the air we inhale, the chair that supports us, the light that illumines our day—all these entities feel us through the sense of touch, though we might seldom acknowledge their presence. Humans, as living, sensate, sentient beings, have been given the special task and responsibility of growing in awareness and appreciation of these other life forms, and acting accordingly. Humans have the opportunity to cultivate ethical behavior that engenders respect toward the living, breathing, conscious beings that suffuse the universe. Consequently, the Jaina community maintains thousands of animal shelters (*pinjrapole*), particularly in western India.

The Jaina tradition emphasizes in great detail the perils of karma and urges people to avoid all forms of harm. A traditional tale warns against the wanton destruction of trees, while simultaneously explaining the mechanics of karma:

A hungry person with the most negative black *lesya* karma uproots and kills an entire tree to obtain a few mangoes. The person of blue karma fells the tree by chopping the trunk, again merely to gain a handful of fruits. Fraught with gray karma, a third person spares the trunk but cuts off the major limbs of the tree. The one with orangish-red karma carelessly and needlessly lops off several branches to reach the mangoes. The fifth, exhibiting white or virtuous karma, “merely picks up ripe fruit that has dropped to the foot of the tree.” (Jaini 1916, 47)

Trees were not to be regarded covetously for their fruits, but like all life forms were to be given respect and treated without inflicting harm. This ethic of care was to be extended to the entire biotic community, engendering awareness of and sensitivity to the precious nature of life.

During the period of the Islamic incursion into India, the Jaina community was often in retreat, with some of its temples taken over and converted into mosques. Some Jaina monks, however, helped exert nonviolent influence within the Islamic world. In 1591, Jinacandrasuri II (1531–1613), a leader of the Khartar Gacch of the Svetambaras, traveled to Lahore, where he greatly influenced the Mughal emperor Akbar the Great. He gained protection for Jaina pilgrimage sites, as well as legal protection ensuring that Jain ceremonies would not be hindered. He even lent support to Jaina advocacy for animals, and forbade the slaughter of animals for one week each year.

Mohandas Gandhi (1869–1948), who liberated India from British colonialism through the enactment of nonviolent principles, was deeply influenced by the Jaina tradition. He eschewed all forms of violence and even titled his lengthy autobiography after the second Jaina vow: *Satyagraha or My Experiments with Truth*. He learned of Jainism during his childhood in Gujarat, an Indian state with a large Jaina presence, and from Raichandra, a prominent Jaina lay-teacher.

Another modern-day example of Jaina activism can be found in the work of Acharya Tulsi (1914–1997) and his successor, Acarya Mahaprajna, both leaders of the Svetambara Therpanthi movement. In June of 1945, deeply disturbed by World War II, he issued a nine-point declaration of the basic principles of non-violence including guidelines for both individuals and governments.

The Jaina community remained almost exclusively within India until the twentieth century, when many Jaina migrated to eastern Africa, Britain, and North America. Today, this diaspora community tends to identify readily with values centered on environmental protection. The classics and religion professor Anne Vallely notes that “rather than through the idiom of



self-realization or the purification of the soul, ethics are being expressed through a discourse of environmentalism and animal rights” (2000, 193). These values are expressed through such journals as *Resurgence*, edited by the former Jaina monk Satish Kumar, and *Jain Spirit: Sharing Jain Values Globally*, edited by a Jaina lay-scholar, Atul Shah. Extensive websites buttress the new global reach of the Jaina community, which continues to espouse vegetarianism and animal activism as key components of its ethical expression.

Jaina cosmology asserts that the world consists of myriad souls all seeking their own way. Through mistakes of karma, their karma becomes thick and entrenched. Through acts of benevolence, their karmic burden becomes lighter. By the adoption of a strict moral code grounded in nonviolence, the Jaina seek to shed their karmic cloak. This practice requires a clear understanding of what constitutes life, and how one can cultivate care and concern in one’s encounters with all forms of life. By careful dietary observance and restriction of acquisitiveness, the soul gradually detaches itself from the clutches of karma. This process also benefits others, in that through the abatement of one’s greed, others can live more

freely. As age-old problems of human conflict and more contemporary problems of environmental mismanagement become more pressing, the abstemious lifestyle offered by the Jaina may become increasingly instructive to those seeking peace and environmental protection.

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See also Mahavira

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Japanese Empire

In response to European and American domination in Asia in the late nineteenth century, Japan developed an industrial economy and a strong military to build its own empire, which grew to incorporate much of East Asia, Southeast Asia, and the South Pacific. Japan's defeat in World War II resulted in the loss of its overseas territories, the destruction of much of its homeland, and occupation by a foreign power.

When Emperor Meiji ascended Japan's imperial throne in 1868, Europeans and Americans were conquering, buying, co-opting, or otherwise dominating many areas of Asia. In order to protect their country from the threat posed by these Western imperial powers, Japan's leaders established and consolidated their national boundaries in the 1870s by incorporating the large northern island of Hokkaido (home of the Ainu people), Okinawa and the Ryukyu Islands to the south, and the smaller Bonin Islands to the southeast within Japan's long-established territorial space of Honshu, Shikoku, and Kyushu islands. They also encouraged an emergent sense of imperial nationalism, and the government adopted the slogan "rich nation, strong army" (*fukoku kyohei*) while developing an industrial economy and creating a strong military based on Western strategy and Western weapons. Japan's newly refurbished military forces were initially used against internal rebellions, but its first real test was on the Asian continent.

Korea and the First Sino-Japanese War

Japan's leaders had long considered the Korean peninsula a strategic area needing diplomatic attention

and possibly military control. Korea's geographic proximity made it both vulnerable and potentially threatening. In 1274 and 1281 Mongol ruler Kublai Khan (1215–1294) attempted invasions of Japan from Korea, and in the 1590s the Japanese warlord Toyotomi Hideyoshi (1536/7–1598) launched two invasions of Korea, causing massive death and destruction.

Nominally led by the native Yi imperial family, Korea had a tributary relationship with China that allowed Qing imperial rulers in Beijing to control Korea's foreign affairs. Russia was interested in Korea as a Pacific Ocean terminus for its mammoth Trans-Siberian Railroad. Japan forced a commercial treaty and then a political treaty on Korea (with China's reluctant acquiescence) in 1876 and 1884. Nevertheless, the much larger countries of China and Russia remained potential threats to Japan's strategic interests in Korea. When the internal Tonghak Rebellion grew too large for the Korean government to handle in 1894, they called in Chinese troops. Alarmed, the Japanese army immediately landed its own troops on the Korean peninsula, and war soon broke out between China and Japan. The Chinese and Korean forces were no match for Japan's modern troops and weapons.

The Treaty of Shimonoseki and the Triple Intervention

As a result of the Treaty of Shimonoseki (1895) that ended the war, China paid Japan a hefty indemnity, Korea was declared independent of Chinese control (and thus easier for Japan to influence), and Formosa (present-day Taiwan) and the Liaodong Peninsula,



The Yasukuni Shrine in Tokyo, founded in 1869 by the Meiji emperor, is dedicated to the spirits of those who lost their lives serving imperial Japan, especially during wartimes. GNU GPL License.

in northeastern China across the Korea Bay from Korea, were ceded to Japan. But the treaty's terms upset Russia, Germany, and France, who did not want Japan firmly entrenched on the strategically important peninsula close to their own treaty areas in China. They demanded that Japan return the Liaodong Peninsula or face war against the three of them. Russia, the driving force behind this "triple intervention," also did not want to allow Japan more territory bordering its interests in Manchuria. Unable to gain support from the British or Americans to counter the triple intervention, Japan grudgingly gave in.

Nevertheless, this first successful overseas test of Japan's newly modernized military, followed by its participation in suppressing China's anti-foreign Boxer Rebellion of 1900–1901, demonstrated to Japan's political and military leaders the weakness and disarray of the once mighty China—vulnerabilities that Japan would later exploit more fully.

The Russo-Japanese War of 1904–1905

Still smoldering over the triple intervention and subsequent occupation of the Liaodong Peninsula by Russian troops, Japan launched a surprise attack against Russia on 8 February 1904, sinking most of Russia's Asian fleet at Port Arthur on Liaodong. Two days later, Japan declared war. Japanese and

Russian ground troops fought difficult, bloody battles, with Japan finally taking the important junction of Mukden (Shenyang), directly north of the Liaodong Peninsula, in March 1905. In May 1905, Russian naval forces sent from the Baltic were devastated by the Japanese navy, led by Admiral Togo Heihachiro (1848–1934), at the Tsushima Straits. Defeated on land and especially at sea, and having to deal with anti-Czarist revolution at home, the Russian imperial government agreed to peace negotiations with Japan. The Russo-Japan War, concluded by the Portsmouth Treaty of 1905, and mediated by U.S. president Theodore Roosevelt, was a tremendous victory for Japan. Japan regained the Liaodong Peninsula, Russian interests in southern Manchuria were transferred to Japan, the southern portion of Sakhalin Island was ceded to Japan, and Korea was recognized as under Japan's political and economic control. Japan declared Korea a protectorate territory in 1905 and formally annexed the peninsula in 1910. A nonwhite country militarily defeating a major Western and largely white country was disturbing for Westerners, with their entrenched notions of racial superiority. In Japan, by contrast, the war led to a dramatic upsurge of nationalist sentiment, and across East Asia Tokyo was regarded as a mecca for young, energetic Asians who wanted to learn how to build an economy and military that could stand up to the West.



The bowing Chinese indicate they've given up the battle at the end of the First Sino-Japanese War.

Japan's Empire During World War I

Japan entered World War I (1914–1918) on the side of the Allies (Britain, France, Russia, the United States, and Italy) because of the Anglo-Japanese Alliance of 1902. Japan supplied the Allies with armaments and nonmilitary supplies, but took no active part in the war in Europe. Japan did use its military forces, however, to occupy German-controlled islands in the South Pacific and occupied the Shandong territory in China previously controlled by Germany. Japan also issued the “Twenty-One Demands,” a set of political, economic, and military concessions it demanded from China. China received little outside help from the Allies, who were preoccupied with the war in Europe, and was forced to agree to a slightly reduced set of Japanese demands.

Immediately after King Kojong (1852–1919), the last Korean emperor, died, many Koreans planned a peaceful demonstration against Japanese rule to coincide with the funeral ceremonies on 1 March 1919. Japanese colonial authorities in Korea, drawn primarily from military forces, brutally crushed the largely peaceful demonstrations. Approximately seven thousand Koreans were killed and tens of thousands were injured. Barely two months later, on 4 May, anti-Japanese sentiment exploded in China

when the Paris Peace Conference announced that Japan would maintain control of Shandong. Chinese university students, workers, shopkeepers, writers, and artists participated in marches, demonstrations, and anti-Japanese boycotts in Beijing and throughout many of China's cities for several days before order was restored. These two events became important nationalist symbols for generations of Koreans and Chinese, respectively.

The Washington Conference and the 1920s

In order to deal with territorial, economic, and military disarmament issues that the Paris Peace Conference bypassed, some of the Allied powers met in Washington, D.C., from December 1921 to February 1922 to hammer out a series of agreements. The United States, Britain, France, and Japan first agreed to a “Four Power Pact” confirming the status quo regarding one another's Pacific territories. Next, the United States, Britain, Japan, France, and Italy agreed on a “Five Power Treaty” limiting the construction of naval capital ships—battleships and cruisers. Japan reluctantly agreed to this naval limitation treaty after receiving assurances it could substitute newer ships in the planning stages for older ships slated for decommissioning. Participants also agreed to a “Nine



Power Treaty” guaranteeing the territorial integrity of China and establishing an “open door” policy that granted all signatories equal economic opportunities in China.

The agreements of the Washington Conference were substantial and limited military construction and military confrontations among the major powers for a decade or more. Nevertheless, many nationalists in Japan believed the treaties adversely affected Japan’s imperial interests and claimed their representatives to the conference did not adequately consult the military—even though one of the three Japanese representatives was the highly decorated Admiral Kato Tomosaburo (1861–1923). At the London Naval Conference in 1930, the naval limitations treaty was renewed despite strenuous opposition from the Japanese navy. Hamaguchi Osachi (1870–1931), the prime minister who forced Japan’s parliament (the Diet) to accept the treaty, was assassinated by a civilian ultranationalist.

Meanwhile, the U.S. Congress approved the Oriental Exclusion Act as part of its 1924 Immigration Bill. As a result of the new law, Japanese immigrants were excluded from the United States and its territories, including Hawaii. Both the Japanese ambassador to Washington and the U.S. ambassador to Tokyo resigned in protest. The Oriental Exclusion Act raised nationalism in Japan to a dangerous level, and significantly damaged United States-Japan relations for many years.

Manchuria-Manchukuo

Japan had long been interested in Manchuria for its raw materials (especially mineral resources), agricultural goods, as a destination for Japanese immigrants, and as a strategic buffer between Japan’s Korean colony and China and Russia. Despite attempts by Japan’s foreign minister Kijuro Shidehara (1872–1951) to promote Japan’s interests on the Asian continent through conciliatory means, ideological and military hardliners used the rising tide of nationalism and the economic problems of the 1920s to agitate for more direct intervention. In June

1928, members of the Japanese army stationed on the Liaodong Peninsula assassinated Zhang Zuolin (1873–1928), the Chinese warlord controlling most of Manchuria. Then in September 1931, Japanese soldiers blew up a section of the South Manchurian Railway near Mukden. Claiming the explosion was set by Chinese troops, Japanese troops took Mukden, and with reinforcements sent from Korea fought and occupied most of the important cities and areas along the South Manchurian Railway. Japanese troops in the field ignored orders from superiors in Tokyo to cease fighting, continuing until most of Manchuria was occupied.

The Japanese government in Tokyo reluctantly accepted this *fait accompli* and declared Manchuria the “independent” nation of Manchukuo in early 1932. The League of Nations refused to accept Manchukuo as an independent nation and condemned Japan’s actions in Manchuria. In response, Japan quit the League of Nations.

Manchukuo was ostensibly led by Pu Yi (1906–1967), the last emperor of China, who had abdicated in 1912. However, the administration of the country was controlled by Japanese military and civilian officials, with Japanese forces in charge of security. The South Manchurian Railway Company and the Manchurian Heavy Industries Corporation led economic development efforts in the region and promoted Japanese immigration to Manchuria. Manchukuo was seen by many Japanese officials as “the jewel in the crown” of their empire.

Assassinations and Military Control

Japan’s increasing nationalism, coupled with the severe economic problems caused by the worldwide depression following the October 1929 stock market crash on Wall Street and the controversy over Manchuria, led to assassinations of prominent business and political leaders and military domination of the Japanese government. In early 1932, the head of the Mitsui conglomerate was assassinated, as was the former governor of the Bank of Japan (then serving as finance minister), both by a civilian ultranationalist



This lithograph depicts the first battle of the Russo-Japanese War (1904–1905). Library of Congress.

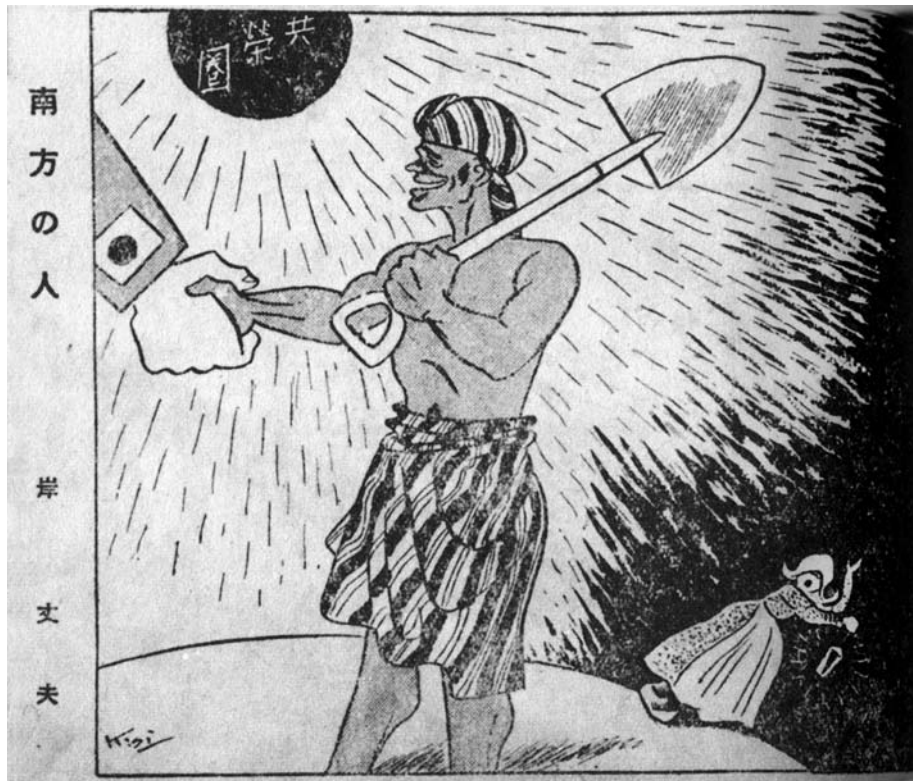
group. Those killings were followed by the assassination of Prime Minister Inukai Tsuyoshi (1855–1932), whom young army and navy officers killed because he had voiced opposition to the army's actions in Manchuria.

On 26 February 1936, young Japanese army officers who wanted to restore rule to the emperor led more than a thousand soldiers in an attempted coup of the Japanese government. They assassinated four top officials, including the finance minister, and only narrowly missed the prime minister. The attempted coup was stopped after four days when Emperor Hirohito (1901–1989; reigned 1926–1989) made clear that he was opposed to what coup leaders were doing in his name. The overall effect of the assassinations of the 1930s, however, was to stifle civilian complaints about the military in general and especially political dissent concerning the military's expanding operations on the Asian continent.

The Second Sino-Japanese War, 1937–1945

On 7 July 1937, a shooting incident between Japanese army troops and Chinese troops near the Marco Polo Bridge outside of Beijing soon led to full-scale war in China. By the fall, Japanese troops were fighting Chinese Nationalist (Guomindang) troops in Shanghai, where they killed thousands of Chinese civilians.

After capturing Nanjing, the Nationalist capital, in early December 1937 Japanese troops went on a rampage of slaughter and rape. Chinese troops were summarily executed after surrendering. But the vast majority of those killed were civilians—old men, women, and children. The number killed by Japanese troops in the area of Nanjing from December 1937 to February 1938 is still a matter of considerable controversy. Based on eyewitness reports from



In this cartoon from *Osaka Puck* (December 1942), Japan shakes hands with a dark-skinned native of Indonesia while the frightened woman, representing Dutch colonialism, runs away.

surviving Chinese, Western missionaries, and even from Japanese soldiers who participated in the massacre, the Tokyo War Crimes Trials following World War II calculated the number of Chinese deaths at Nanjing to be more than 200,000—one of the worst atrocities of the twentieth century.

By the end of 1938, the Japanese military controlled most of the eastern region of China and began running the area as an informal colony. The Japanese convinced former Nationalist leader Wang Jingwei (1883–1944) to head the puppet government there. Meanwhile, the Chinese Nationalist leader Chiang Kai-shek (1887–1975) and his forces set up their wartime government and military headquarters at Chongqing, a city deep in China's heartland and protected from large-scale Japanese attacks by wide rivers and mountains. The Chinese Communists, led by Mao Zedong (1893–1976), became increasingly effective with guerrilla-style attacks against Japanese forces.

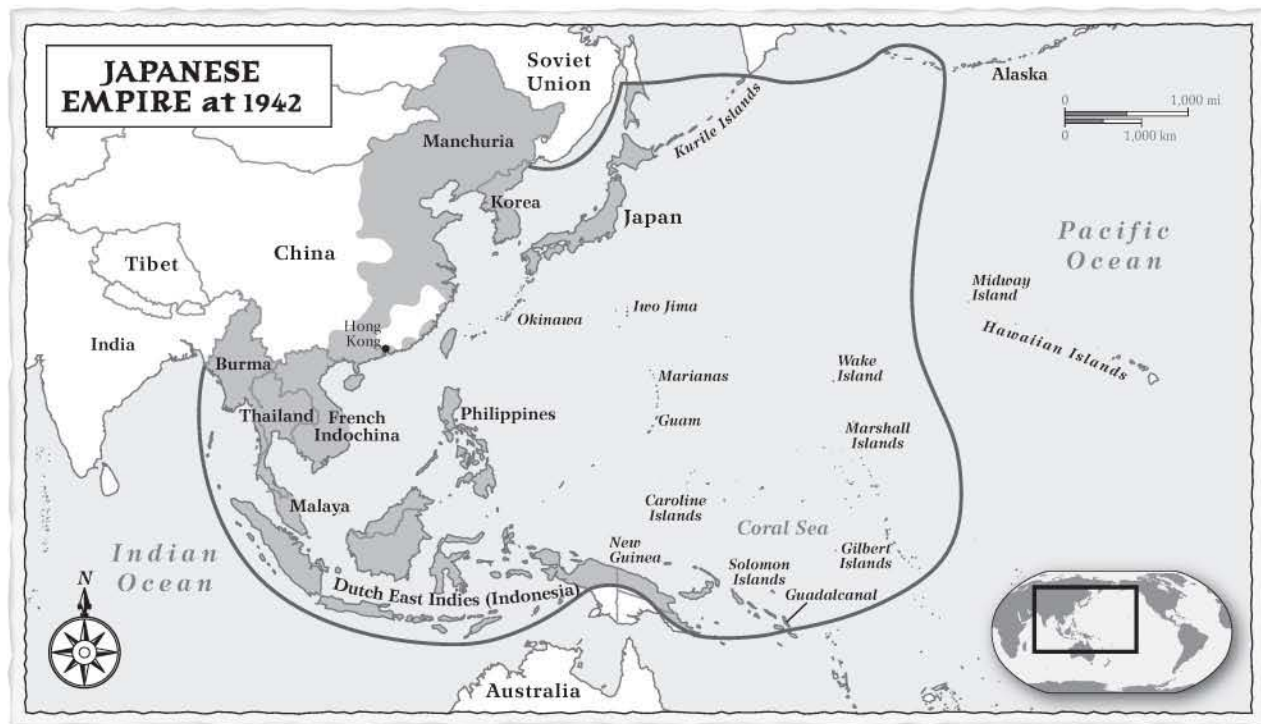
By 1941, it was clear that despite Japan's military superiority, the vast geographic area of China and its enormous population united against the Japanese made the prospects of Japanese victory dim. In China and Manchuria, Japanese military operations were consuming ever larger amounts of oil, steel, rubber,

and food. In 1939 Japanese forces tried to gain access to more raw materials by pushing north into Soviet-controlled Mongolia but suffered heavy losses at Nomonhan before reaching a cease-fire agreement. Military and political leaders in Tokyo then made a fateful decision to advance into Southeast Asia.

The Pacific War, 1941–1945

In response to Japanese military actions in China, the U.S. government prevented first Japanese purchases of scrap metal, then aviation fuel, then all oil, and in the summer of 1941 froze all Japanese financial assets in the United States.

To gain raw materials to sustain their military operations in China and to maintain Manchukuo, Japan's leaders decided to advance south into Indochina (Vietnam, Cambodia, and Laos) and especially to the resource-rich Dutch East Indies (present-day Indonesia). Following two unsuccessful rounds of negotiations with the United States, planes from Imperial Japanese Navy carriers attacked battleships, aircraft, and other military facilities at the U.S. Pacific Fleet Headquarters at Pearl Harbor, Hawaii, on 7 December 1941. Japanese armed forces simultaneously



attacked Hong Kong, Malaya, the Philippines, Guam, and Wake Island. Japan's war in China was now combined with a Pacific war against the Americans and their Western allies.

Japanese military forces scored one victory after another for several months and controlled much of Southeast Asia by the spring of 1942. At this point, the Japanese Empire was at its largest dimension and formally combined into a pan-Asian organization called the Greater East Asia Co-Prosperity Sphere. Despite slogans of brotherhood such as "Asia for Asians," the reality for people living in the Great East Asia Co-Prosperity Sphere was one of Japan as a demanding, harsh imperialist power.

Japanese leaders hoped the Americans, having their hands full trying to stop Hitler in Europe, would quickly come to an agreement that would allow Japan to maintain its presence on the Asian continent. The surprise attack on Pearl Harbor, however, plus the surrender and Bataan Death March of American and Filipino forces in the Philippines, infuriated Americans so much that they would settle for nothing less than unconditional surrender from Japan. Starting with sea battles at Coral Sea and Midway in June and July 1942, the tide began to turn against the Japanese. In October 1944, when the Battle of Leyte Gulf destroyed what

then remained of the Japanese Imperial Navy, it was clear Japan would lose the Pacific War. The only question was when.

Tragically, Japanese military and political leaders refused to surrender even after large-scale U.S. bombing of major Japanese cities began in late 1944. They resorted instead to using young, inexperienced pilots for *kamikaze* suicide attacks. Even the terrible destruction and loss of 100,000 civilian lives in the Tokyo firebomb raid of March 1945 and the larger loss of Japanese military and civilian lives on Okinawa shortly thereafter failed to convince Japan's leaders to surrender. After the early August atomic bombings of Hiroshima and Nagasaki and the Soviet invasion of Manchuria, Emperor Hirohito finally surrendered, with an announcement broadcast throughout the Japanese Empire on 15 August 1945.

Legacy of the Japanese Empire

Starting with the acquisition of Taiwan following its victory in the Sino-Japanese War of 1894–1895, Japan's empire grew to incorporate much of East Asia, Southeast Asia, and an extensive area of the South Pacific. Motivated to varying degrees by strategic and economic considerations as well as by a nationalist



desire for international glory that sometimes included a mystical sense of destiny and racial superiority, Japan's empire building during the first half of the twentieth century was not unlike that of several Western countries during the nineteenth century. Ultimately, however, the expansion and brutality of the Japanese Empire provoked a devastating war. After its defeat, Japan lost all the overseas territories it had gained since 1895, suffered the destruction of much of its homeland, and was occupied by a foreign power for the first time in its history. Even some sixty years later, Japan continues to encounter hostility from the peoples and nations it conquered during its era of imperialism.

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See also Imperialism; Shinto; World War I

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Jefferson, Thomas

(1743–1826)

THIRD U.S. PRESIDENT

Thomas Jefferson, the main author of the American Declaration of Independence, drew upon French and English Enlightenment political philosophy, and especially the work of the Englishman John Locke, to urge colonists to fight for a government based on popular consent—a government that could secure the right to life, liberty, and the pursuit of happiness. Jefferson became the third U.S. president in March 1801.

Thomas Jefferson was the main author of the American Declaration of Independence, issued in 1776, which inspired the American Revolution and many anti-colonial movements across the globe. Jefferson also became the third president of the United States in 1801 and purchased land known as the Louisiana Territory from the French in 1803, doubling the size of the new nation and setting the stage for the growth of the U.S. as the dominant power in the Americas.

Jefferson was born on 13 April 1743 in the British colony of Virginia in North America. His parents were tobacco planters and part of the colonial elite. In 1760 he enrolled in the College of William and Mary in Williamsburg, Virginia. Upon graduation, he earned a living as both a lawyer and a farmer, living on his plantation, Monticello, in Virginia. In 1772 he married Martha Wayles Skelton, a widow, who died ten years later. Jefferson served as a member of the House of Burgesses, the lower house of Virginia's legislature, from 1769 to 1775 and became a leader of the developing opposition to British policies.

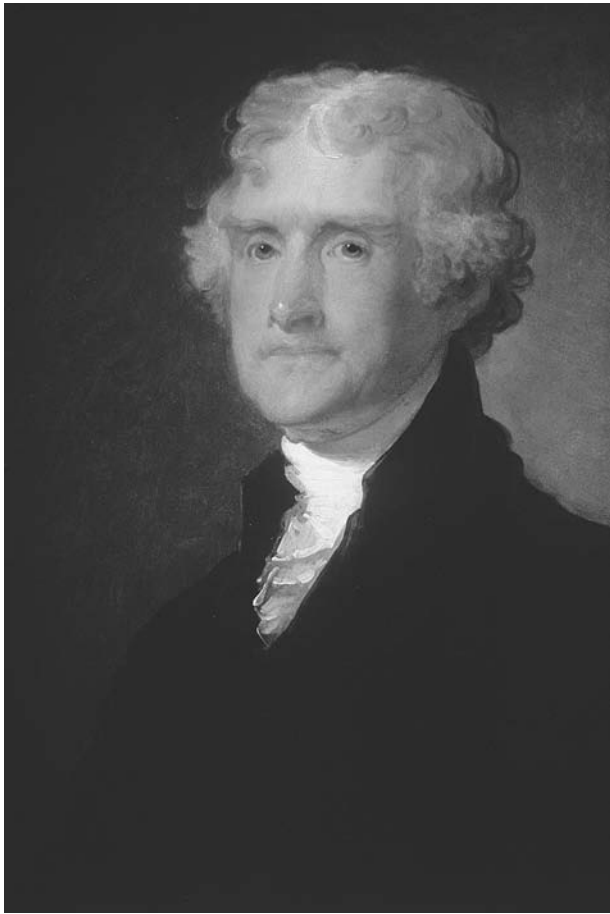
In 1776 the members of the Second Continental Congress selected a committee to draft a declaration of independence and Jefferson became the principal

author. The Declaration, adopted by Congress on 4 July, announced the birth of a new nation, listed specific grievances against the British king George III, and set forth a philosophy of natural rights. Drawing upon French and English Enlightenment political philosophy, and particularly the work of Englishman John Locke, Jefferson urged the colonists to fight for a government based on popular consent that could secure the right to life, liberty, and the pursuit of happiness. The Declaration, and the American Revolution it inspired, generated a wave of revolutionary sentiment throughout Latin America and Western Europe in the nineteenth century and were even used to justify anti-colonial struggles in Asia and Africa in the twentieth century.

Nevertheless, Jefferson, and the new nation he helped to create, did not live up to the ideals annunciated in the Declaration of Independence. He favored government run by prosperous white men and saw those without property, women, Native Americans, and African American slaves as incapable of governing and undeserving of equal rights. Jefferson owned a number of slaves and probably fathered some with one of his slaves. The words of Jefferson, however, would later be used by the excluded to demand political equality in American society.

Jefferson went on to play a major role in the development of the United States. He drafted the bill that established religious freedom and the separation of church and state in Virginia. He served as Virginia governor from 1779 to 1781 and worked as U.S. minister to France from 1785 to 1789. Upon Jefferson's return home in 1789, President George Washington selected him to become the first secretary of state. Jefferson became a strong advocate for a

In matters of style, swim with the current; in matters of principle, stand like a rock. • **Thomas Jefferson (1743–1826)**



Gilbert Stuart, *Thomas Jefferson* (c. 1821). Oil on canvas.

weak central government and an economy based on agriculture. The secretary of the treasury, Alexander Hamilton, favored a strong federal government and an industrialized economy. Jefferson's hopes for the new nation resulted in the creation of the Democratic-Republicans in Congress, and Hamilton's vision in the formation of the Federalists—the first political parties in U.S. history. After Jefferson's term as secretary of state ended in December 1794, and Hamilton resigned from public office and returned to his legal practice in New York in 1795, these two parties continued to dominate political thought for the next thirty years. After Washington refused a third term as president in 1796, Jefferson stood for election against John Adams. Adams won and became the second

president of the U.S., and Jefferson came in second and became the vice president.

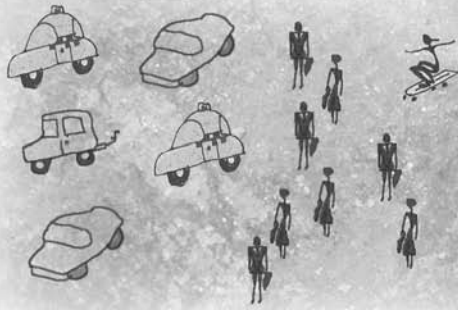
In the 1800 presidential contest Jefferson tied with fellow Republican Aaron Burr in the electoral college, but the House of Representatives settled the tie in favor of Jefferson and he became president and Burr vice president of the United States. Jefferson took office in March 1801 and served as president for two terms. As president, Jefferson's major accomplishment was the acquisition of the Louisiana Territory from France in 1803. The Louisiana Purchase, which extended from the Mississippi River to the Rocky Mountains and from the Gulf of Mexico to Canada, roughly doubled the size of the United States and set the nation on a path of westward expansion. Jefferson died on 4 July 1826, the fiftieth anniversary of the signing of the Declaration of Independence, leaving behind a lasting political tradition that still influences America and the rest of the world.

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See also Democracy; Religious Freedom; Revolution—United States; United States of America

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Jesus

(c. 6 BCE–c. 30 CE)

RELIGIOUS LEADER AND FOUNDER OF CHRISTIANITY

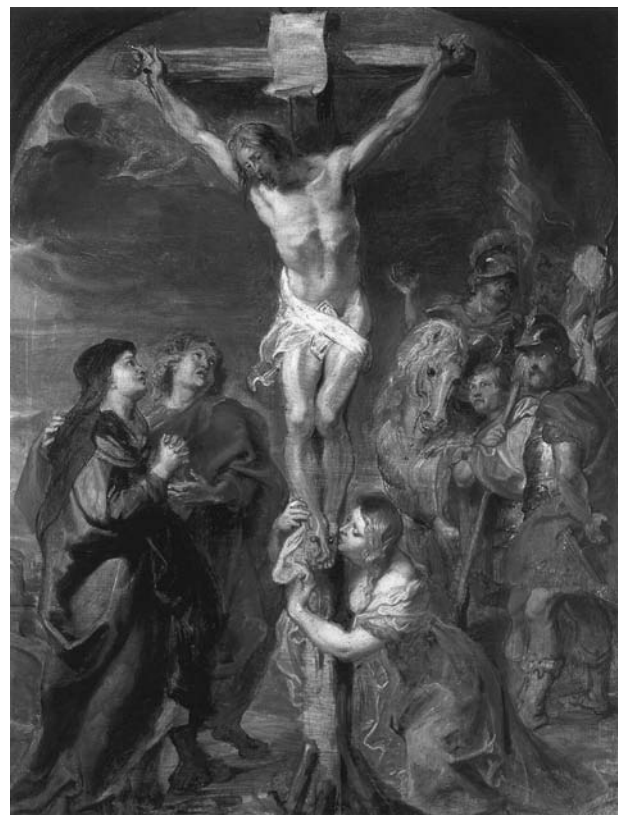
Jesus, who began his ministry in small towns around Galilee, was a Jew. After the Romans crucified him as rebel, his followers deemed him the Son of God, believing he would soon return to end wickedness in the world and judge the living and the dead. Most Jews rejected this idea, but missionaries made converts among pagans, founding a church that eventually divided into the rival Christian churches of today.

Although Jesus (of Nazareth) is one of the most important historical figures who ever lived, very little historical information is actually known about him. The principal sources for his life and ministry are the four canonical gospels of the Christian Bible: Matthew, Mark, Luke, and John. While these documents contain actual sayings of Jesus, they are products of a developed tradition and themselves use established sources. Alongside information of undoubted historical value, then, there are later stories and sayings inserted for their theological value.

Jesus was born into a milieu of vigorous political activism and religious speculation. Within the context of first-century Judaism, these were interlinked as a result of widespread apocalyptic speculation. In the years when Judaea had been ruled by Hellenistic kings, many of its people began to concentrate their hopes for political change upon a direct intervention by God. The apocalyptic literature, most famously, for example, the Book Of Daniel, that they developed expressed the view that God would act by sending a leader to free the people (“Messiah”) and restore the cult based in the Temple at Jerusalem to its proper function. At the time of Jesus’ birth, the long rule of the region by the Roman client-king Herod the

Great had come to an end. His immediate successors were proving inadequate and so the Romans were undertaking a more direct role in administration and policing.

Jesus came from Nazareth, a village in the hills of Galilee, under the direct authority of one of Herod’s sons, Herod Antipas. Galilee itself was geographically and intellectually peripheral to the Temple cult operating in Jerusalem. Instead, the central religious



Peter Paul Rubens, *Christ on the Cross* (1627). Oil on panel. Rockox House, Antwerp.



Franz von Rohden, *Geburt Christi* [*The Nativity*] (1853). Oil on canvas. In this biblical scene three wise men bear gifts.

institution in Galilean life was the synagogue. The religious community of the synagogue met weekly to be led in formal devotions by a teacher (rabbi). The focus of the synagogue was upon the reading and interpretation of Scripture, and it was in this context that religious reform groups like the Pharisees, who placed particular emphasis upon personal religious devotion, flourished.

Jesus' public ministry, when it began, was mostly amongst the small villages and towns of Galilee. Although there were several cities nearby (Scythopolis [Bet She'an], Tiberias, and Sepphoris [Zippori]—itself only a few kilometers from Nazareth), the gospel accounts make it clear that he preferred to concentrate his activities within the small fishing communities of

the Galilee region, and Capernaum in particular. He seems to have followed on from the earlier ministry of his cousin, John the Baptist. John, an ascetic and itinerant preacher, had demanded a revival of personal piety, to be expressed through a ritual cleansing in water (baptism). At the beginning of his own ministry, Jesus had been baptized by John and, while he did not himself baptize, many of his followers baptized in his name.

Jesus' principal message was an assertion of the need for a personal piety as a response to the love of God. He stressed the need for personal compassion, and many of the miracles associated with him are miracles of healing, which emphasize Jesus' own compassion. In focusing upon personal integrity as

I believe there is no one deeper, lovelier, more sympathetic and more perfect than Jesus—not only is there no one else like him, there never could be anyone like him. • **Fyodor Dostoevsky (1821–1881)**

a measure of piety, Jesus came into conflict with another religious reform movement, the Pharisees, who also laid heavy emphasis upon religious authenticity, although through devoted obedience to Jewish religious law. Jesus' most colorful language was reserved for Pharisees, whom he depicted as liars and hypocrites who were slavishly devoted to the letter of the law.

Jesus' principal notoriety was not so much for his words, however, as for his deeds. He swiftly gained a reputation as a miracle worker through miraculous healings, exorcisms, and even the restoration of life.

When Jesus sought to remove his ministry to Jerusalem, he immediately came into conflict with Temple authorities, whom he accused of profiteering. They in turn sought help from the Roman administrators. Depicting Jesus as a revolutionary and a messianic troublemaker, they secured his conviction and execution by the Romans as a rebel. It is certainly clear that his visit was accompanied by considerable speculation that he would proclaim himself as the Messiah and lead a revolt. While he encouraged this speculation by his entry into Jerusalem in deliberate fulfillment of a messianic prophecy, he stopped short of ever actually claiming to be the Messiah.

Within weeks of his death, a significant number of his followers began to claim that he had risen from the dead. That belief in Jesus' resurrection empowered communities of his followers to survive and grow, forming the kernel of the Christian church. This community expected his imminent return from heaven to complete his messianic task. When that did not occur, Jesus' words and deeds, along with stories about him, were written down as gospels and other documents. Jesus himself wrote nothing except, once when asked to judge a woman caught in adultery, he scribbled some words in the dust (John 8:1–6).

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See also Christian Orthodoxy; Paul, Saint; Pentecostalism; Protestantism; Roman Catholicism

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Because of her involvement in conflicts between kings of England and France during the Hundred Years War, which led to her being burnt at the stake as a heretic in 1431, Joan of Arc became a symbol for love of country, feminine independence, and Christian sanctity.

Whether considered as a French national heroine, a prototype of feminism, a political prisoner confronting established institutions, or a saint of the Roman Catholic Church, Joan of Arc is one of the most fascinating and enigmatic women of all time. Considerable controversy surrounds her brief if extraordinary career of one year on the battlefield and one year in prison.

Joan's role in history was shaped by the Hundred Years War (1337–1453), which was essentially a dynastic conflict between the kings of France and England for the control of France. The duke of Burgundy, the most powerful of the French vassals, was allied with England. By the early fifteenth century, large areas of France had been devastated by rapacious mercenary armies employed by the rulers of both countries. In 1428 only central and southern France remained loyal to the Valois king, Charles VII (1422–1461), and the English were besieging Orleans, the key to southern France. It was at this low point in French fortunes that Joan made her appearance.

Joan was born about 1412 in Domremy, on the frontier between Champagne and Lorraine. She referred to herself as Jeanne la Pucelle—"la pucelle" meaning "the maiden" or "the virgin"—out of the pride she took in her virginity. One of the four children of Jacques Darc, a peasant of modest means, she had a normal childhood, although she was unusually

prayerful. At about thirteen, she began to hear voices, which first instructed her to lead a good life and then directed her to obtain Charles VII's coronation in the cathedral of Reims, traditional site of royal coronations, and the expulsion of the English from French soil.

In February 1429, wearing male clothes (she claimed she found them comfortable), Joan visited Charles at his Chinon quarters. After some initial suspicion, Charles agreed to Joan's campaign against the English and supplied her with men, money, male clothing, and a suit of white armor. With an army of about four thousand, Joan began the Orleans campaign on 29 April 1429 and by 8 May 1429 she had succeeded in lifting the siege. Whether this victory actually resulted from her brilliant military strategy and whether it really determined the eventual outcome of the Hundred Years War are debatable questions. What is clear is that Joan restored French morale; her victory was seen as a miracle. By 17 July 1429 she was able to attend Charles's coronation in the cathedral of Reims in a ceremony that gave legitimacy to his kingship. Her fame spread rapidly, not only in France but also in many parts of Europe.

After many victories in the Loire valley, Joan wished to conquer enemy-held Paris. Contrary to the wishes of Charles and his advisers, she attacked Paris in September 1429, but strong resistance forced her to retreat and the king ordered her to abandon the campaign. Thereafter her fortunes declined precipitously. But despite the difficulty of raising money and troops as a freelance general, she continued the assault against the Anglo-Burgundian forces until she was captured at Compiègne by a Burgundian army on 23 May 1430.



Dante Gabriel Rossetti, *Joan of Arc* (1882). This dramatic portrait, found on Rossetti's easel when he died, portrays the heroine with masses of fiery red hair and an opulent robe. Collection of the Fitzwilliam Museum at the University of Cambridge.

The Burgundians sold her to the English, who were convinced that she was a witch. Charles VII made no attempt to rescue her and she was sent to English-held Rouen in Normandy. Between 21 February and 30 May 1431 a tribunal of the Inquisition in Rouen tried her for witchcraft and heresy. Led by Pierre Cauchon, former rector of the University of Paris and the chief judge, the theologians and lawyers who questioned her concentrated on two issues: her claim that she had been guided by the voices of St. Michael, St. Catherine (of Alexandria), and St. Margaret (of Antioch), and her use of male clothing.

The trial judges concluded that she could not have heard voices independently, that is, without the Church Militant, the official church, and that her male clothing symbolized her defiance of the Church. Twelve Articles approved by the University of Paris condemned her as “a liar, an apostate, and a heretic.” On 24 May 1431, exhausted from the long ordeal, Joan signed an abjuration. She promised never to bear arms again, never to use male clothing, and to

renounce her voices. Whether she understood the paper she was signing is arguable. She was then sentenced to life imprisonment.

A few days later Joan resumed wearing male clothes, claiming that her women's clothing had been removed, and stating the God, speaking through her voices, had been saddened by her abjuration. Her conduct and words now made her a relapsed heretic, and she was therefore burnt at the stake on 30 May 1431.

After the Hundred Years War came to an end with France having regained most of its land, Charles asked the Pope, Calixtus III (1455–1458), to authorize a new trial for Joan. The pope agreed, and a nullification trial was held in 1456. The court nullified the verdict of 1431 on the following grounds: judicial procedures had been violated in the previous trial; Joan had been given no facilities to defend herself; and the English had exerted pressure on the court.

Despite the rehabilitation of Joan in 1456, her fame grew slowly, and it was not until the nineteenth century that her image as a national heroine and saint

You, O English, who have no right to this kingdom of France, the King of Heaven orders and commands you through me, Joan the Maid, to leave your fortresses and return to your country, and if you do not so I shall make a [Battle of] Hatay uproar that will be perpetually remembered. • **Joan of Arc (c. 1412–1431)**

took hold on the French mind. She was beatified in 1909 and canonized in 1920. She became a role model for love of country, feminine independence, and Christian sanctity. There are more literary, artistic, dramatic, and musical works on Joan of Arc than on any other woman in history.

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See also French Empire

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Judaism

Judaism's greatest legacy to world history is its success as the earliest entire community to adopt monotheism. The religion's impact on world history is therefore both direct and felt through its relationships with the conquering religious civilizations that followed it, first Christianity and then Islam.

Starting from the Hellenistic period, when outside observers first attempted to write about the “other” in a dispassionate manner, Greek writers observed the unique monotheism of Judaism, noting how this aspect of their religion singled out Jews from all other peoples that the Greeks had encountered. The reports that reached philosophers such as Theophrastus and Megasthenes (c. 300 BCE) led them to consider the Jews a nation of philosophers. The Jews, they wrote, were stubborn believers in a singular god who was both the god of Israel and the god of the world. Other writers noted that the Jews insisted on certain practices that were strange to the Greeks: circumcision, abhorrence at consuming pork, and a kind of insular culture that was at odds with what the Greeks believed to be their own open-mindedness. Such traits were considered by some observers as both peculiar and the reason for what they called—perhaps unconsciously describing their own elitism—Jewish misanthropy, lack of patriotism (toward Greek culture), and general disregard for humankind outside of their own nation.

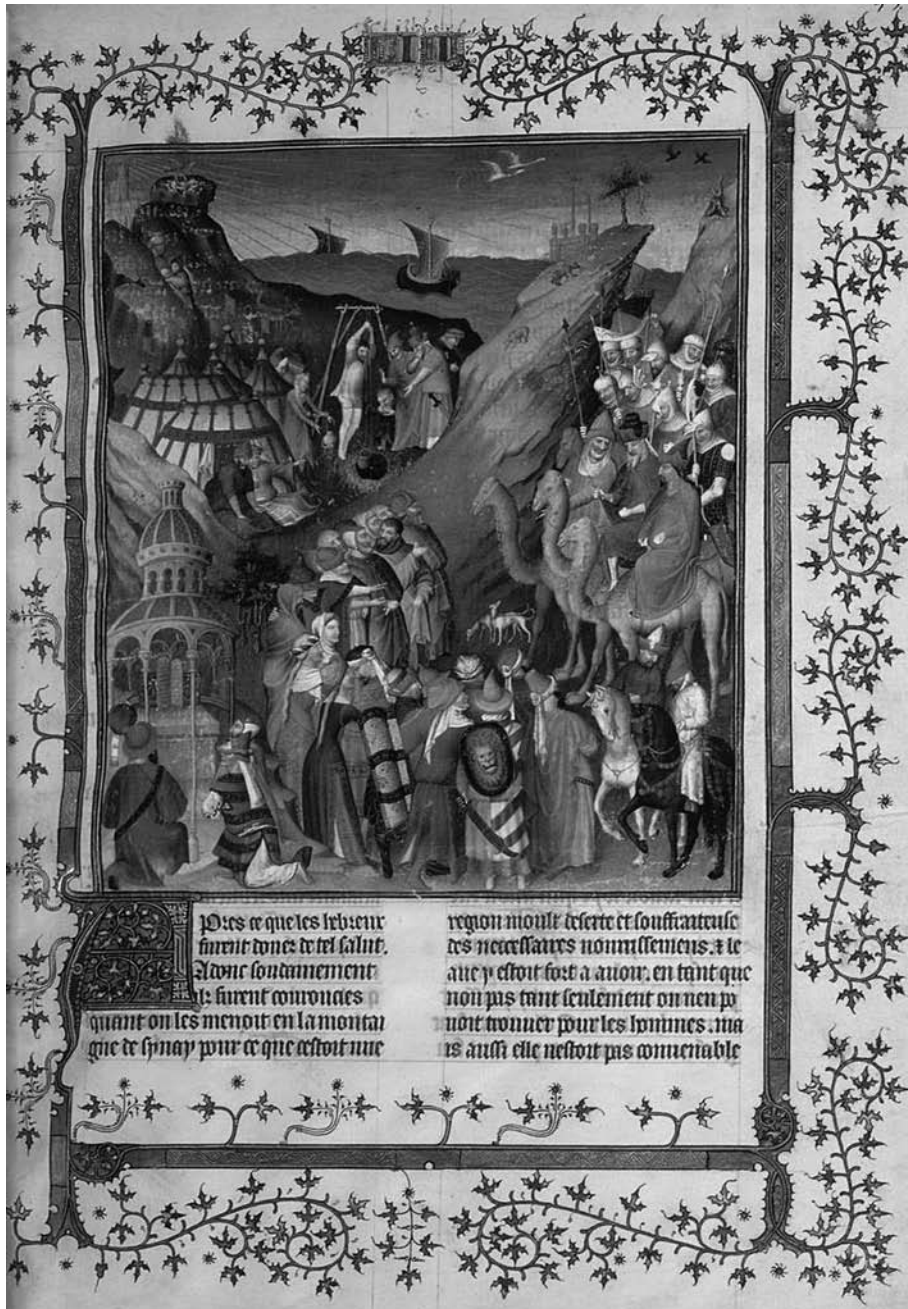
The Greeks thus articulated both a kind of attraction and repulsion toward Judaism. Despite such ambivalence, however, many Romans (to the dismay of their ruling classes) were fascinated by this religious civilization. Large numbers either converted

or “Judaized,” meaning that they adopted Jewish customs such as holiday observance and food habits without enduring the circumcision that was required for full conversion. Roman writers noted that Judaism's popularity was based on its great antiquity, its written scriptures, its deep sense of morality, and its monotheism. Judaism's engagement with Western civilization was thus deep and enduring but not without controversy.

Judaism had an overwhelming influence on the premodern history of the world west of the Indus River, and an enduring impact on the entire world in the modern period. The impact of Judaism on world history is both direct and felt through its relationships with the conquering religious civilizations that followed, first Christianity and then Islam.

Impact of Origins

Judaism emerged out of a religious civilization based on what is often referred to by scholars as “biblical” or “Israelite” religion. As such, what we today call Judaism must be distinguished from its older forms. In fact, Judaism is only one of the heirs of biblical religion, as are all the faiths in the family of religions referred to as Christianity. Biblical religion itself is multifaceted, since it evolved for centuries during the historical period represented in the Hebrew Bible (Old Testament). It has become evident to scholars that biblical religion was not always purely monotheistic, for it reflects periods of tension between those who would allow rituals associated with figurines representing other powers or deities and those who would accept nothing other than the one god, the God of Israel (1 Sam. 26:19, 1 Kings 11, 2 Kings 23).



An illustration by Jean Fouquet from *Jewish Antiquities*, a manuscript written by Flavius Josephus (38?–100?) that recounts Jewish history from the Creation to the revolt against the Romans in 66 CE. The text was read by early Christians and remained popular with both Christians and Jews. This manuscript, copied and illustrated in the fifteenth century, belonged to French royalty. National Library of France.

It is clear, however, that the people that called itself Israel (the name derives from the biblical figure Jacob, who was also called Israel—Gen. 32:29) was the first community to take on the doctrine of monotheism successfully. It is likely that the concept of monotheism existed among individuals before the emergence of the people of Israel. Even powerful and influential individuals such as the pharaoh Akhenaton (mid-fourteenth century BCE) may have been monotheists or proto-monotheists, but no entire community succeeded in adopting monotheism

prior to ancient Judaism. This is perhaps Judaism's greatest legacy to world history. It established a theological paradigm that would have a profound impact on the nature of all subsequent religions, whether monotheistic or not.

Election

Ancient Israel saw itself as a small and beleaguered monotheistic people living in a world of countless foreign nations, all sharing the temptation of



worshipping multiple deities (Deut. 7:7). Out of this awkward and precarious social and political situation, coupled with a feeling of obvious theological uniqueness, emerged an impression, and then a doctrine, of election, of being chosen by the one and only true god to represent and worship him unreservedly and unconditionally (Deut. 7:6–8). Throughout the Hebrew Bible we find the message that all the nations of the Earth worship their sets of gods, but only Israel worships the One God, the God of the entire world. Election, therefore, became deeply ingrained into the Israelite consciousness. Ironically, despite or perhaps because of Israel's beleaguered position in relation to the mighty idolatrous nations and empires of the ancient world, its unique community commitment to monotheism engendered the feeling that only it was uniquely elected to carry out the will of the true God. Israel was God's royal nation (Exod. 19:5, Deut. 7:6, 14:2, 26:18), and a holy nation (Exod. 19:6, Deut. 14:2, 21). Israel was God's chosen people (Deut. 7:6, Isa. 43:20, 45:4, Pss. 33:12, 132:13, 135:4).

Covenant

The special relationship of election is symbolized by an institution called "covenant" (*b'rit* in Hebrew). The term actually refers to a host of formal or legal relationships in the Hebrew Bible ranging from agreements between two individuals (Gen. 21:22–33, 1 Sam. 18:3) to pacts between nations (1 Kings 5:26, 20:34). But one special type of biblical covenant agreement came to define the relationship between the only community of monotheists and the only true God. Forged between God and Israel, this is the "covenant par excellence," an institution found throughout the Hebrew Bible and a unique contribution of Israelite religion. The covenant was first rendered between God and Abraham's family (Gen. 17). It was reaffirmed with the biblical patriarchs (Gen. 26:23–24, 28:10–15) and then at Mount Sinai (Exod. 19, 24) between God and all the extended families and clans of Israel that were redeemed from Egyptian bondage. This divine covenant was extended also to non-Israelite peoples

who escaped along with Israel in the redemption from Egypt (Exod. 12:38).

The concepts of election and covenantal relationship with God originated with ancient Israel and its religion, but these traits became intimately associated with monotheism in general. Election and covenant, therefore, are not only essential to Judaism, but are intimately associated with Christianity and Islam. Early Christians came to articulate their religion as representing a "new covenant" between God and a "new Israel," namely, those who accept the particular self-definition of Christianity. Christians, therefore, become the new "chosen," with only those who had chosen Christ as savior able to achieve their own salvation (1 Cor. 11:23–32, Heb. 8–9). Although less prominent in Islam, covenant (*'ahd* or *mithaq*) also defines the relationship between God and a newer community of believers. But Islam is less exclusionary in that it accepts, in theory, the salvation of prior communities of righteous believers (Qur'an 2:62, 5:72). Nevertheless, Muslims are defined in the Qur'an as a kind of elect, the most moderate or a "middle community," chosen to be witnesses (Qur'an 2:143), and "the best community brought forth for humankind" (Qur'an 3:110).

Election and covenant, closely associated with Israel and Judaism (and an integral part of all expressions of monotheism), can be viewed as divisive traits. The legacy of Israelite religion is not, however, all exclusion and division. The inclusive and compassionate aspects of the universal religious imperative in Western religions also seem to have originated in ancient Israel.

Compassion For the "Other" and Repairing the World

The exclusivist aspects of monotheism in Israelite religion were always in tension with inclusionism, as defined by care for the stranger and a sense of responsibility toward others. Thus, although Israelites may have considered themselves to be the only people in the ancient world that truly respected the one God of the universe, God was nevertheless the God of all, including those who did not recognize him. Israelite

monotheism thus required care and concern even for those outside of Israel, and this responsibility was articulated through the concept of *imitateo dei*, emulating God, because the creator of all the world must be good: “For the Lord your God is God supreme, who shows no favor and takes no bribe, but upholds the cause of the fatherless and the widow, and befriends the stranger, providing him with food and clothing. You too must befriend the stranger, for you were strangers in the land of Egypt” (Jewish Publication Society, Deut. 10:17–19).

Social Justice

Codes or lists of formalized social precedents (customs) and formulaic duties existed before the emergence of ancient Judaism. These are similar to what today would be called law (obligations to state, society, and private individuals). The ancient Mesopotamian “codes” of Ur-Nammu (twenty-first century BCE), Eshnunna (c. 1800 BCE), and Hammurabi (mid-eighteenth century BCE) existed long before the legal and social requirements enumerated in the biblical parallel, the Book of the Covenant (Exod. 20–23). This pre-Israelite material was as closely associated with a sense of societal justice as that found in the Hebrew Bible. That is, offences would be termed criminal when they were considered inimical to the well-being of society as a whole, and sanctions were imposed by the public authority rather than the injured party or a powerful private individual (the latter might be termed “family justice” and was not law).

On the other hand, the prebiblical codes maintained a sharp tripartite division of society into an upper level of free men, a class of state dependents, and a slave caste. There was no expectation of social mobility between these classes, and the rights, responsibilities, and sanctions in the codes reflected this rigid division. In contrast to the previous systems, the biblical codes extend the rights of the elites to all layers of society: “You shall appoint magistrates and officials for your tribes, in all the settlements that the Lord your God is giving you, and they shall govern the people with due justice. You shall not judge

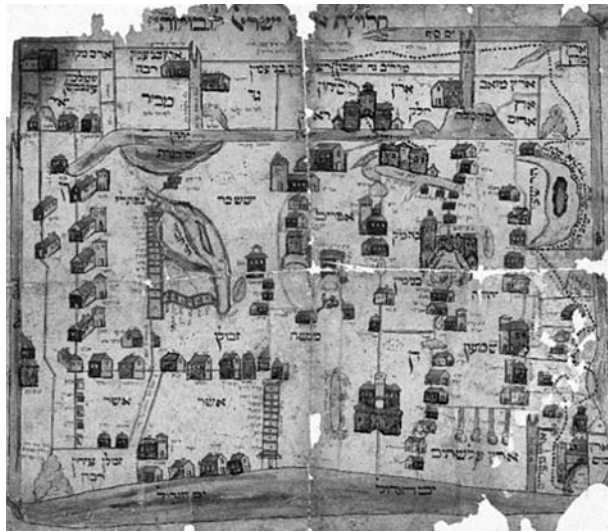
unfairly: you shall show no partiality; you shall not take bribes, for bribes blind the eyes of the discerning and upset the plea of the just. Justice, justice shall you pursue, that you may thrive and occupy the land that the Lord your God is giving you (Deut. 16:18–20)” and “You shall have one standard for the stranger and citizen alike: for I the Lord am your God” (Lev. 24:22).

Civic Duty and Responsible Behavior

Another of Judaism’s most important legacies, found not only in its sister expressions of monotheism but also in democracies and all forms of responsible government, is the idea that people are responsible to one another. Individuals are accountable, not only for themselves but also for others. This is represented by the term, and the concept, *Torah* (meaning “teaching”), which has sometimes been misunderstood as a rigid code of Israelite law. It should be likened more to a set of behavioral expectations for ritual and social behavior, centered around the idea that the individual is responsible to the group and the group to the individual. That the entire nation is punished by God for the misbehavior of the few is a foundation of Israelite law and referenced throughout the Hebrew Bible. One is accountable for both the behavior and the welfare of one’s fellow. All the people were witnesses at the giving of the Torah at Mount Sinai, and all are therefore responsible to ensure that the Torah teaching is upheld. This is the essence of the Israelite system, which is based upon a balance between individual and community and between freedom and responsibility (Deut. 29–30).

From Israelites to Jews

The true origin of the Israelites remains uncertain. While some have suggested that it lies in Mesopotamia or Egypt, recent scholarship places it within Canaanite society, suggesting that Israel symbolizes a monotheistic trend in Canaanite culture originating perhaps as early as the second millennium BCE that eventuated in an independent identity. The danger of assimilation back into the old and familiar idolatrous



This drawing, which shows the division of Israel among the twelve tribes, is a copy of a work by Rabbi Elijah ben Shlomo Zalman (1720–1797), better known as the Vilna Gaon or Elijah of Vilna (Vilnius, in present-day Lithuania).

ways of local Canaanite culture is a constant theme of biblical literature, and the nations “here at hand” (Deut. 20:15) in the land of Canaan always represent the most dangerous threat to Israel’s distinctive identity and existence.

But the tribes of Israel were not always purely monotheistic, and the journey into the kind of theology we would recognize today as monotheism did not end until the exilic or post-exilic periods after the destruction of the first Temple in Jerusalem in 586 BCE. Prior to that time, such seminal statements as “Who is like you among the gods” (Exod. 15:11) suggest that while ancient Israelite theology required unconditional obedience to the God of Israel, it did not deny the possibility of other gods existing as well. It may have been the realization that the God of Israel could be worshipped even in Babylonian exile that solidified the tendency toward monotheism and convinced the exilic community that there was one God who created the universe, and that the same one God maintained it.

Israel had divided into two separate nations with independent monarchies and centers of worship shortly after the reigns of kings David and Solomon (c. 900 BCE). The northern kingdom, composed of ten of the twelve tribes of Israel, was destroyed by the Assyrian empire in 721 BCE and never recovered. The southern kingdom, formally made up of the

large tribe of Judah and the small tribe of Benjamin (but including parts of other tribes and peoples as well), was destroyed a century and a half later by the Babylonian empire. But the Babylonians were soon overtaken by the Persians, who were friendly to the exiles from the tribal areas of Judah and Benjamin. The Persians invited the exiles to return from their banishment to the east and reestablish themselves in the ancient land. The overwhelming majority of survivors were from the large tribe of Judah, so the returnees joined with those who remained and were soon known as Judeans, or Jews (biblical books of Ezra and Nehemiah), though Jews throughout history have also referred to themselves as Israel, Israelites, or the people or nation of Israel (Hebrew: *b’ney yisra’el* or *‘am yisra’el*).

The Judean community, like its parent, the intertribal community of Israel, remained small in numbers relative to the great empires of Mesopotamia and Egypt. But as a result of the conquests by the Mesopotamian powers and the dispersion of the Israelite tribes, Jewish communities began to establish themselves in many parts of the Mediterranean basin. The largest communities remained in Mesopotamia and Judea, but significant communities grew up also in Egypt, Anatolia, Greece, and North Africa.

These communities did not look like Jewish communities of today, for they practiced a kind of ancient Judaism that was still oriented toward temple worship with sacrifices and burnt offerings. In some places such as Elephantine, an Egyptian island community in the Nile, they established their own temples independent of the Temple in Jerusalem. In others closer in proximity to Jerusalem, the communities joined in the annual pilgrimage festivals to the Jerusalem Temple and worshipped according to the systems described in the Bible.

The Hebrew Bible conveys the message that monotheism always survived precariously and, aside from the Persians, was resented by the nations of the world. The Assyrians, Babylonians, Egyptians, Canaanites, Midianites, and Aramaeans—all opposed the Israelites’ stubborn worship of one god only. The reason for Israel’s isolation in this regard appears quite simple. When traveling, for example, it was a common

Our Jewish experience leads us to be more aware of dangers than of opportunities. This tendency has to be transcended if we are to emerge into a future different from the recent past. • **Abba Eban (1915–2002)**

practice among polytheists to make offerings to the gods of the local area or people. It was considered a common courtesy and expected polite behavior, and to peoples who worshipped multiple deities, it created no theological problem to make a token offering to foreign gods. Not so Israel, which was commanded to worship only the one God of Israel, the God of the universe. The Hebrew Bible indicates that it was quite expected that other peoples worship their national gods or even other people's gods (Judg. 11:23–24), but Israel was allowed to worship only the one God (Jer. 44:1–10).

This situation continued into the Hellenistic period that began with the invasion of Alexander in the 330s BCE, and into the Roman occupation of Judea that began three centuries later. The Judeans remained a small community and largely without power aside from a few generations under the rule of the Jewish Hasmonean dynasty of kings. Finally, in 70 CE, after a major Judean revolt against Roman imperial rule, the Jerusalem Temple was destroyed a second and final time, never to be rebuilt.

By this time, Jews had been dispersed throughout the Mediterranean and Middle Eastern worlds and brought their religion with them. Monotheism, the theological core of ancient Judaism, survived the vicissitudes of history, but the religious rituals and worship that articulated that basic theology evolved and changed over the centuries. The repeated destructions of the Jerusalem Temple put an end to the sacrificial system, but the core idea of a singular god endured. However, the geographical dispersion, influence of multiple cultures, and internal cultural change brought new ideas into biblical Judaism. This eventuated in a synthesis that gave birth to factions or parties, sects, and eventually new religious movements. One of these was the Jesus Movement that began in Judaism and became the starting point out of which the family of Christian religions emerged.

Judaism of the Rabbis

Another was a movement that emerged around a core group of leaders steeped in an oral tradition of Judaism that existed parallel to the sacrificial

system and written scripture of the Bible. Those leaders we know of were almost all men, though it is clear that women were also instrumental in the transmission of oral lore. They could be described as traditionists, and included the Pharisees as well as others. Later, they were known as rabbis. When the long process of recording the oral tradition ended in the sixth century CE, it became known as the Talmud.

This form of Judaism is called Rabbinic Judaism, and all expressions of Judaism today, aside from one tiny group known as Kara'ites, derive from the Judaism of the rabbis and their great source of authority, the Talmud. This Judaism existed in exile for close to two millennia, even in the core land of Judea, which was governed by non-Jews. Rabbinic Judaism always represented the stranger in the lands of others. It is quietist and highly intellectual, relying more on the survivability of its adherents and the wits of its leaders than directly on the biblical God acting in history. Unlike Christianity, Rabbinic Judaism requires little dogmatic theological belief beyond that in the unity of God, and salvation is presumed for all who live a pious life of good deeds.

One of Rabbinic Judaism's great contributions to world history has been its unique ability to adapt to multiple environments within a world hardly tolerant of diversity, religious or otherwise. Its stubborn existence in both Christian and Muslim worlds required all religious leaders, thinkers, and politicians to consider and respond to the Jews, the quintessential "other" in their midst. This required repeated reevaluation of the meaning of self in relation to the other of Judaism, and resulted in the growth of theologies, laws, and various religious and secular sciences in both Jewish and non-Jewish civilizations.

At the same time, the Jews' lack of political power throughout this period required that their religion consider a larger range of possible doctrine than the religions of political powers who could enforce their will by the sword. Judaism therefore contains many ideas but little absolute dogma. The customary argumentation found in Jewish literatures rarely arrives at any final conclusions. Every



Gravestones broken during the Holocaust were set into a wall in the Jewish cemetery in Worms, Germany, where the Jewish community dates back more than a thousand years.

issue and point can and should be revisited and reexamined, and new meanings are always possible. The huge written compendium of the Talmud and its interpretation contain complex discussion and argument over topics that range from folk medicine to legal theory, property law, family law, business ethics, and theologies. The literatures that epitomize Rabbinic Judaism stress the need for a deep and universal intellectual engagement with the divine word in Bible and Talmud, and this foundation of Judaism encouraged a very high per capita involvement in reading and education.

In the Modern World

In the modern period, when Jews were eventually released from their restricted status in the West and were allowed to enter the universities and engage in the professions and sciences, their religious culture provided the intellectual training that would result in contributions far above their per capita

representation. To provide one striking example, Jews make up less than one-hundredth of 1 percent of the world population, yet they account for some 18 percent of the Nobel Prizes awarded in the twentieth century. There is no need to list the many contributions of Jews to the arts, science, literature, and music. Some of the ideas that were incubated in premodern Judaism have come to the fore in contemporary postmodern thought. These include aspects of literary deconstruction and concepts of exile, both of which have had a major impact on current intellectual discourse.

Judaism, like all religions, encompasses more than a theological system of beliefs. It is best described as a religious civilization, and this civilization has had a foundational influence on world civilizations west of the Indus River for two millennia. Its influence comes not only from its own direct contribution, but also through the contribution of the religious civilizations that emerged from or associated themselves with it. Monotheism, the belief in the universality and unity of the divinity, is the very core of Judaism,

and religions that preach monotheistic theologies have not only encompassed the Western and Mediterranean worlds, but now reach deeply beyond into Africa and Eastern Asia. Although representing a tiny fraction of the human population, Jewish religious civilization has remained of great significance in world history.

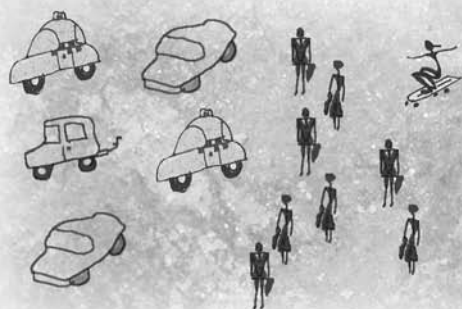
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See also Abraham; Genocide; Holocaust; Moses; Zionism

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Justinian I

(483 CE–565 CE)

BYZANTINE ROMAN EMPEROR

As emperor of Rome from 527 to 565 CE, Justinian I engaged the best legal minds to collect all Roman law into a single series of volumes. Justinian's *Codex* replaced all earlier Roman law and was the source of all subsequent Roman law; it remains a key legal text. Justinian sponsored the rebuilding of the Hagia Sophia into the great domed cathedral that survives to this day.

Born Flavius Petrus Sabbatius, Justinian ruled the Roman Empire from 527 until 565 CE. From a Thracian peasant family, he was adopted by Justin, his uncle by marriage, thus taking the name Justinian. Justin, a professional soldier, oversaw the education and promoted the military career of his adopted son. In 518, the elderly emperor Anastasius died without a designated successor and Justin emerged as the successful claimant. Justinian became Justin's principal minister and colleague. It was during this time that Justinian met Theodora, a former actress. Marriages were legally forbidden between men of Justinian's class and women of Theodora's profession, but in 524, Justinian arranged for this law to be changed so that they could marry, and in due course the two wed, commencing a long and extraordinary partnership. In April 527, Justin proclaimed Justinian co-emperor. When Justin died, four months later, Justinian succeeded him without challenge.

Justinian inherited a smoldering conflict with Persia that continued for much of his reign, punctuated only by a brief "Everlasting Peace" signed in 532. The respite this treaty brought nevertheless freed resources for Justinian's great military project: the reconquest of the Western Roman Empire.

He appointed Belisarius, a young and highly gifted general, to this project. In 533, with a small force, Belisarius attacked the Vandal kingdom of Africa. He was swiftly successful and in 535 followed this up with an invasion of Sicily and Ostrogothic Italy. Much of the south fell easily to his forces, although he then had to sustain a counterattack from the Ostrogoths. In 540 he took the Gothic capital of Ravenna, although this did not bring the war to an end. The long conflict was continued by his able successor, the Persarmenian eunuch Narses, who rebuilt a durable imperial presence in Italy.

Both Belisarius and Narses had previously distinguished themselves in a serious disturbance that broke out in Constantinople. One feature of the city's civic life was chariot racing, and there were two particularly prominent chariot-racing teams (or factions): the Blues and Greens. Justinian and Theodora were both known as partisans of the Blues. Early in 532, discontent in Constantinople resulted in violence between the two dominant factions. During the course of a race meeting on 13 January, they suddenly made an alliance, burst out of the Hippodrome, and, chanting the slogan *nika* (conquer), stormed through the city, setting fire to public buildings. For some days, confusion reigned. A reluctant rival to Justinian was proclaimed: Hypatius, nephew of the former emperor Anastasius. Justinian contemplated flight, but the situation was saved by the resolute action of Narses, Belisarius, and others. The Hippodrome was stormed; the rioters were massacred; Hypatius and his brother were executed.

Law was one of Justinian's passions. Once he became emperor, he engaged the empire's best legal



Raphael, *Justinian Presenting the Pandects to Tribonianus* (1511). Fresco. Stanza della Segnatura, Palazzi Pontifici, Vatican.

minds in the collection of all Roman law into a single series of volumes. Justinian's *Codex* replaced all earlier Roman law codes. This was only the beginning. He also set up a commission, under the direction of the quaestor (legal official) Tribonian, to summarize Roman legal authorities in a great reference book (*The Pandects*). The scale of Justinian's legal achievement cannot be overstated. The texts produced through his authority and at his order were the source of all subsequent Roman law, remaining key legal texts to this day.

Justinian sought to interfere directly in the religious controversies of his time. He believed that as emperor he had a divine commission to determine the affairs of the Christian church (caesaropapism). The church itself was bitterly divided in a dispute over the nature

of Christ (the Monophysite controversy). Many in his court, including Theodora, favored the Monophysite view, but Justinian sought to promote a more extreme position (aphthartodocetism).

Justinian was an intelligent and cultured man, an able diplomat, and a good judge of subordinates. A tireless emperor, he sought both to reassert Roman military power and to adorn his empire with great buildings. After the Nika riots, he rebuilt the cathedral church of Hagia Sophia into the great domed structure that survives to this day. He was generous to communities in distress, repairing earthquake damage, and succoring those affected by a major epidemic that raged across the Mediterranean after 541. He outlived most of his subordinates, still troubled by conflict with Persia and his failure to impose a settlement upon the raging religious controversies of the time. At his death in 565, he was succeeded by his nephew Justin II.

Our principal source for Justinian's reign is the prolific writer Procopius, who wrote official literature praising the emperor, as well as a private work (the *Anecdota*) that is critical, even scurrilous. Other sources include the vast legal collection assembled at Justinian's command and the work of the poet Paul the Silentiary.

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See also Byzantine Empire

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King Kamehameha of Hawaii was a skilled leader whose military prowess enabled him to defeat his enemies and, by 1810, unify the major islands of Hawaii that were under his control. Also responsive to the needs of the weak and helpless, he enacted various public safety measures for benefit of all.

Arguably the greatest of all indigenous warrior leaders in Fawaiian history, Kamehameha was Hawaii's political bridge to the outside world. He came to power at a time when the islands were still relatively new as a stopover point between the northwest coast of America and its fur trade and the potential riches of Asia via Guangzhou (Canton), China. Domestically, Kamehameha achieved unprecedented success by unifying the major islands under his autocratic control in 1810. Yet as successful as he was, possibly even more notable for that time were the details of how he accomplished what he did. Kamehameha used a wise combination of skills and strategies to both defeat his enemies on the battlefield and thereafter efficiently institute policies to assure peaceful governance. A multifaceted individual, he adhered to the religious system but was also capable of innovating when necessary. He could be as dynamic as any warrior in terms of fighting prowess, but his personal *kapu* (spiritually determined character or destiny) mandated that he also care for the weak and helpless by establishing various edicts to benefit all regarding public safety.

Kamehameha was literally born into greatness, as it is said: a comet blazed across the night sky announcing his birth. Some predicted his would be a life both successful and unprecedented in achievements. So

disturbing were the predictions that the paramount chief of the island of Hawaii ordered the newborn to be put to death, fearing he would one day rise up and usurp the power of the hereditary lineage. Thus Kamehameha was secreted away at birth to be raised out of reach of those who would do him harm. This was a long-standing custom for individuals born of significant chiefly lineage. His formative years were spent training as any young chief would, and eventually his death order was rescinded when it was seen firsthand how very dedicated he was and eager to be of service to his superiors.

The ruler who wanted Kamehameha put to death lost his own life when Kamehameha was a young man. The eventual successor was an uncle of Kamehameha's. As a young man in service to his uncle, Kamehameha was one of the first Hawaiian chiefs to board the ships of James Cook in 1778. The loyal nephew was so able in the performance of his duties, British navigator James Cook mentions Kamehameha by name in his journals as intelligent and inquisitive when reporting the actions of the first party to visit aboard ship. The famed British navigator recognized what an attentive young man Kamehameha was, noting how he took in everything he saw, with his uncle relying on his observations of the foreigners and their ways for much of the visit. When this uncle died, he left control of the island of Hawaii to his son. The war god, though, was placed in the care of Kamehameha, the presumption being if any usurpations of authority were to take place the able young chief would be given every advantage. When the traditional redistribution of land dictated a new balance of power, Kamehameha was shown a total lack of respect given his status in the assembly of Hawaiian nobles. He dedicated the



The statue of Hawaii's first king, Kamehameha I, stands prominently in front of Hawaii's Supreme Court. Library of Congress.

war god and a newly built temple and proceeded to successfully wage battle after battle on the island of Hawaii until he gained complete dominance. Some of the innovations he employed at this time included the placement of heavy artillery on double canoes, use of Western warships, and the largest mobile force of warriors ever organized. Two British subjects in Kamehameha's service were important in his campaigns from the mid-1780s through 1795. John Young and Isaac Davis helped Kamehameha initially in the area of armaments for warfare, modifying traditional fighting forces by teaching some warriors the use of muskets. Cannon that both Young and Davis could operate were mounted on double canoes at the center

deck. They also served as advisers and interpreters regarding foreign ideas, strategies, and influences.

The next objective was to secure the rest of the Hawaiian Islands. He took Maui and its tributaries and then proceeded to Oahu, where his strongest rival was in residence. This opponent was no match for Kamehameha. He was the successor and son of a great Maui warrior, Kahekili, who had taken Oahu in earlier years. The son, however, was not the warrior his father had been. By vanquishing this foe Kamehameha took control of all the islands except Kauai, which was ceded to him in 1810 without major bloodshed.

Kamehameha appointed governors for each of the major islands. He instituted an era of peace that lasted for nearly the entire nineteenth century until the United States violated international law with an initial invasion of the Hawaiian kingdom followed by a military occupation in 1898, further violating Hawaii's neutrality as an independent nation-state. Were it not for Kamehameha I and his dedicated successors, the Hawaiian Islands would surely have fallen under the sway of a major power long before 1898.

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See also American Empire

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Kanem-Bornu

From roughly the eighth to the nineteenth century the Kanem-Bornu state system of northern Africa was strategically located at the crossroads of a trade and cultural network in the Lake Chad basin. As a major center of Islamic learning and scholarship it was instrumental in the spread of Islam to the west, south, and east. Commercially it was a leading source of salt (alum) and slaves to the Mediterranean lands of Christendom.

For a period of nearly a thousand years, Kanem-Bornu was a major political and economic power in northern Africa. Archaeological evidence indicates that its development on the semi-arid plains of the Lake Chad basin occurred in the first half of the first millennium CE among a Kanuri-speaking population of peasant cultivators and livestock herders. Already in the first millennium BCE, the basin was a crossroads for trade and cultural and technological interactions, primarily along a west-east axis, but also along a north-south axis. These networks were factors in the development of the Kanem-Bornu state system.

The earliest known dynasty, the Banu Dugu, or Zaghawa, held sway from the eighth to the late eleventh century, with its capital at Manan. The Saifawa, or Sefuwa, dynasty succeeded it in the second half of the eleventh century and reigned until the mid-nineteenth century. Until the early fourteenth century, Saifawa rule was based in Kanem, northeast of Lake Chad, with its capital at Njimi (from the twelfth to the fourteenth century). In the middle decades of the fourteenth century civil war forced the dynasty to move to the province of Bornu, west of the lake, where a new capital, Ngazargamu, was created.

The Kanem State

With a royal ideology of divine kingship, the Banu Dugu dynasty of the eighth and ninth centuries ruled a rural population of peasants and herders and an urban population of traders and artisans. In this period the growth of a long-distance trade in salt and slaves, wars of expansion toward the Nile Valley and into the southern Sahara, and the arrival from North Africa of merchants and clerics of the Ibadi branch of the Kharijites marked its history. Merchants and some of the Kanem elite converted to Ibadi Islam in the ninth and tenth centuries. Surplus from the countryside and tribute from the large, salt-producing oasis of Kawar to the north were principal sources of revenue.

Rise of the Saifawa Dynasty

A commercial economic system (a salt-slave circuit) extended from the plains east of Lake Chad to the Tibesti Mountains in the central Sahara, via the Kawar oasis, to Zawila, a principal trading center in the northern Saharan oasis known as the Fezzan (in present-day Libya). In the course of the tenth and eleventh centuries an expanding trans-savanna gold trade route that ran from the Middle Niger Valley eastward to the port of Zeila in the Horn of Africa and the port of Aden on the southern Arabian Peninsula passed through Kanem. The relative decline of the salt-slave circuit and the expansion of the trans-savanna gold trade contributed to the fall of the Banu Dugu dynasty and the rise of the Saifawa. The rural-based Banu Dagu lost the support of the Kanem merchant class, which shifted its allegiance to the urban-based Saifawa, a distant branch of the royal dynasty. This



A caravan approaches Kanem-Bornu, circa 1700, a time of political consolidation, prosperity, population growth, and peace.

class and its North African associates became less interested in salt and slaves and more interested in a share of the growing gold trade, which extended to the Nile Valley (Egypt and Nubia) and the Indian Ocean trading system.

The new dynasty established a different stream of Islam, Sunni Maliki Islam, as the state religion, but it was not until the thirteenth century that the religion spread among the general population. A number of Kanemi sultans went on pilgrimage to Mecca. Mosques were built, schools were set up, clerics were brought into the state organization, and autonomous clerical communities were founded. Sultan al-hajj Dunama Dibalami (reigned 1210–1248) performed the pilgrimage and in 1242 established a hostel in Cairo for other pilgrims and students from Kanem. From the twelfth to the fourteenth century, Kanemi sultans conducted military campaigns in all directions, especially toward Hausaland in the west, the Fezzan, and the Nile Valley. Newly conquered lands were granted as fiefs to military commanders. At the heart of the political system was a confederacy of aristocratic clans linked to the ruling dynasty. Senior office holders were drawn from the ranks of the great fief holders, the royal princes and princesses, and Muslim clerics and officers. Local functionaries and tributary rulers occupied the lower ranks of the political system. Imperial expansion enabled the capital and the Kanem heartland to flourish and to achieve recognition beyond the Islamic world. Among medieval European cartographers, Kanem was known under the names Occitan and Organa.

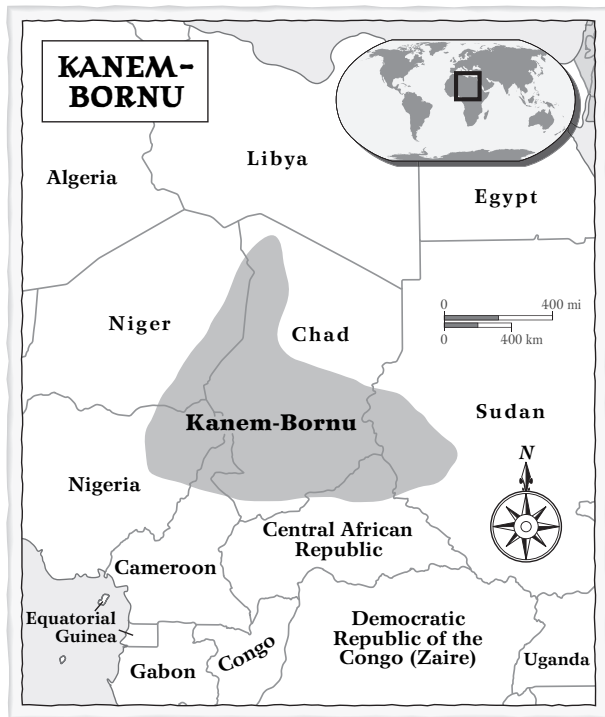
The Karimi Merchants

Kanem's role in international trade can be gleaned from the activities of the wealthy and influential Karimi (or Karim) merchants, who were the preeminent traders in the Islamic world from the twelfth to the fifteenth century. Some scholars believe that the term *Karimi* derives from Kanem, the merchants' place of origin, and that they rose to prominence in Kanem in the period from 950 to 1050 and in Egypt and Aden in the eleventh century. By the thirteenth century they all but monopolized the trade with Byzantium, the Middle East, India, Southeast Asia, and China as well as the Red Sea ports, and their commercial activities carried them to Ethiopia, Nubia (present-day northern Sudan and southern Egypt), and Mali and Ghana (Wagadu) in West Africa. Among the wealthiest merchant groups in the Islamic world, they maintained a profitable and vibrant commercial traffic between Asia and Africa.

The revolts and civil wars that plagued fourteenth-century Kanem had several causes, including ambitious estate holders' desire for autonomy, rival and aspiring claimants to the kingship, and a discontented and rebellious peasantry. Njimi was destroyed, probably toward the end of the century, and the Saifawa were forced out of Kanem.

The Bornu State

The founding, in about 1480, of a new Saifawa capital, Ngazargamu, by Sultan Ali ibn Dunama (reigned 1470–1503) signaled a new chapter in the imperial history of the Lake Chad basin. During the sultan's pilgrimage to Mecca in about 1484, a claimant to the throne of the Islamic Abbasid dynasty (749/750–1258) invested him as the caliph of Takrur (that is, Islamic West Africa). From this time onward, Bornu rulers regarded themselves as caliphs, a claim that was widely accepted. Ali ibn Dunama and his successors ended the civil wars, reconquered Kanem, and launched military conquests across vast territories, such that in the seventeenth and eighteenth centuries Bornu was one of the largest states in Africa. It



dominated Hausaland, the trade routes leading to Tripoli on the North African coast, and the sultanates up to the Nile Valley.

The seventeenth and eighteenth centuries were times of political consolidation, economic expansion and prosperity, population growth, and peace. Towns and villages increased in number, as a result, for example, of the spread of clerical communities. Local trade, based on geographical specializations within a regional economy, expanded substantially. Bornu merchant caravans transported a wide variety of goods to and from distant markets—the Nile Valley, the Middle East, North Africa, and many parts of West Africa.

Bornu Innovations

The Bornu caliphate differed significantly from the Kanem sultanate. In Kanem there was a close association between the state and religious learning, while in Bornu there was a close association between trade and religious learning. In Kanem the sultan ruled as the first among the great landed elite. In Bornu the caliph headed a centralized bureaucracy consisting of slaves, including eunuchs, and persons of servile descent. Bornu was divided into landed estates (or fiefs) held by the new slave aristocracy (slaves to the

ruling sovereign), courtiers or servants of the king, and military commanders. Unlike their Kanem predecessors, all of the senior officials lived in the capital and not on their estates. They toured their districts only to collect taxes and during times of unrest. In contrast to the old aristocracy, the new ruling class was entirely Muslim. The traditional estate holders and aristocratic clans had titles but little or no power. Rulers relied on slave troops and mercenaries and were thus militarily independent of village communities. Islamic law replaced customary law, the ruler appointed Muslim judges throughout the land, mosques were built in the rural areas, and a hostel was founded in Mecca for Bornu pilgrims.

There were numerous units within the state that were not included in the dominant administrative structure. Semiautonomous territories, clerical towns, social-occupational groups (such as camel and cattle pastoralists), and families in possession of rights of privilege were directly responsible to the ruler and not to any fief holder. This political arrangement reflected old traditions and practices from Kanem.

In 1808 the capital Ngazagamu was sacked by followers of Uthman dan Fodio (1754–1817) and in 1812 completely abandoned. Several western provinces were occupied and permanently lost. A religious movement (1804–1810) in Hausaland—the jihad of Uthman dan Fodio—resulted in a new political order, the Sokoto caliphate, which successfully challenged the dominance of Bornu and the authority of the Saifawa. Bornu entered a period of decline, and the prestige and power of the Saifawa dynasty waned.

The al-Kanemi Dynasty

To meet the military and political threats of the jihad and Sokoto, Caliph Dunama Lefami (reigned 1808–1817) called upon the influential scholar Shaykh al-hajj Muhammad al-Amin al-Kanemi (d. 1837) to defend Bornu and the Saifawa. Al-Kanemi, who was to found a new dynasty, defeated the jihad forces, and for this and other services he was appointed a semi-autonomous official and was awarded two enormous fiefs. The latter became his power base. By absorbing



semiautonomous territories and communities and frontier territories and by maintaining a standing army, he was able to achieve military and political preeminence. In 1814 he founded Kukuwa as his capital. He became the de facto ruler of Bornu, with the caliph having power only over the royal court. Shaykh 'Umar al-Kanemi (reigned 1837–1881), al-Kanemi's son and successor, ended the reign of the Saifawa in 1846.

The administrative structure of Bornu under the al-Kanemi dynasty combined features associated with the Saifawa period with innovations that Muhammad al-Kanemi developed. Among his reforms were the reorganization of the Bornu Council of State and the creation of a standing royal slave army. The slave component in the administration was more powerful than under the Saifawa, but advancement within the political system for both free and slave was through clientage within a hierarchy of patron-client relations headed by the Shaykh. The entire state revenue was recognized as the Shaykh's personal property, which he could dispose of at will. Bornu's role as a major trade center declined after the mid-nineteenth century. It was increasingly drawn into the more dynamic economy of the Sokoto caliphate as a supplier of raw materials and a consumer of luxuries.

The rule of the al-Kanemi dynasty ended in 1893 when Rabih Zubeir (d. 1900), coming from the Nile Valley, invaded and defeated an internally divided Bornu. Kukuwa was sacked and Rabih established himself in Dikwa, his new capital, as the sovereign of Bornu. However, his rule was cut short in 1900 by advancing European armies, which colonized the area.

Regional and Supraregional Impact

Throughout much of its history Kanem-Bornu, centrally located at the Chad basin crossroads, was economically and politically oriented to the Sahara to the north and the Nile Valley to the east. When this orientation was effectively blocked in the second half of the nineteenth century, the society experienced severe internal divisions and fell into inevitable decline.

The historical significance of Kanem-Bornu can be understood in terms of its regional and supraregional significance. At both a regional and supraregional level it was instrumental in the spread of Islam over an extensive territory westward to Hausaland, southward to the lands below the Lake Chad basin, and eastward to the lands between Lake Chad and the Middle Nile Valley. Regionally, it was a major center of Islamic learning and scholarship. The political institutions of the principal polities in this vast region, as well as the confederations and town governments in the central and eastern Sahara, derive in large part from Kanem-Bornu and in near and distant lands state-building strategies followed Kanem-Bornu examples.

Commercially, Kanem-Bornu was equally significant. It was a leading source of salt (alum) and slaves to the Mediterranean lands of Christendom and Islam. Salt/alum was an essential ingredient needed by textile producers in the West and in Egypt and North Africa. Kanem-Bornu was also indispensable to the development of royal military forces in North Africa polities where the main military units depended upon (adult male) slave imports from Kanem-Bornu. These units were employed in invasions of southern Europe and wars against the Crusaders. In addition, the Karami merchants who have been linked with Kanem were specialists in the Indian Ocean trade and established the traffic in gold and other goods between Asia and Africa.

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Kangxi Emperor

(1654–1722)

SECOND EMPEROR OF CHINA'S QING DYNASTY

During Emperor Kangxi's sixty-year reign, the borders of the Qing dynasty (1644–1911/12) were strengthened, Manchu rule in China was solidified, and China's economy, culture, and population prospered.

The sixty-year reign of Kangxi, from 1662 to 1722, was one of the longest and most successful in Chinese history. Along with solidifying Manchu rule in China and countering Russian and Mongol threats along the empire's borders, Kangxi also proved himself to be a cultured and able administrator who skillfully bridged the divide between his nomadic Manchu heritage and the agrarian civilization of his Han Chinese subjects.

In the winter of 1661 Emperor Shunzhi, the first emperor of the Qing dynasty (1644–1911/12), contracted smallpox, and on his deathbed he named his third son, Xuan Ye, his heir, possibly because the youth had survived a battle with the disease that shortly was to claim his father, and it was believed that this was a sign that the child would have a long life. Twelve days after his father's death, Xuan Ye was proclaimed emperor and took the reign name Kangxi. As the young emperor was only seven years old, a council of four regents was appointed to rule while the child was in his minority. After an abortive first attempt to assert his authority, Kangxi managed at age fifteen, with the help of his mother's uncle and a group of loyal Manchu officers, to take control of the empire, thus beginning a reign that would last for the next six decades and make him one of the most respected rulers in all of Chinese history.

One of the greatest problems facing the young emperor was the need to unify all of the empire under

Manchu rule. To this end, Kangxi ordered that a military campaign be conducted against the three Chinese generals who had directed the conquest of south and southwest China in the 1650s. These generals, Shang Kexi, Geng Jimao, and Wu Sangui, had earlier been named princes and had their sons married to the daughters of Manchu nobles as recognition of their loyalty to the Qing cause. By the early 1670s, however, Kangxi desired to remove these generals, who were referred to as the "Three Feudatories" due to the high degree of independence they wielded over southern China. The campaign against these former allies was bitter and bloody, but after eight years of fighting Kangxi subdued the last of the Chinese resistance in the south. The emperor then turned his attention to conquering the island of Taiwan, where a large army under the command of the Zheng family had established itself in 1659. A fleet of three hundred ships, under the command of Admiral Shi Lang, whose father and brothers had been killed in the 1650s by the rebel leader Zheng Chenggong (Koxinga), was assembled to capture the island. In the summer of 1683, Admiral Shi's fleet dealt the rebels a fatal blow off the coast of Taiwan and the last remnants of Chinese resistance surrendered.

Kangxi also worked to protect his empire's northern and western borders against foreign threats. By the late seventeenth century, the Russians had conquered most of Siberia and were exerting pressure along the Amur River in northern Manchuria. Kangxi attempted to remove this threat by laying siege to the Russian military presence at Fort Albazin in the mid 1680s. In 1689, with the assistance of Jesuit missionaries who served as translators, representatives of the Qing and Russian empires met at the town of



Emperor Kangxi, renowned as a cultured and able administrator, poses in court dress. This portrait hangs at the Palace Museum, Beijing.

Nerchinsk and signed a peace treaty, the first diplomatic treaty between China and a European nation. In the years that followed, Russian embassies travelled to the Qing court at Beijing and the two nations enjoyed cordial commercial and diplomatic relations.

The emperor Kangxi had been anxious to solve his problems with Russia in order to focus his efforts on the greater threat posed by the Eleuth king Galdan in western Mongolia. In 1699 Galdan's armies invaded the territory of the Khalkhas, a nomadic people who lived in eastern Mongolia. The Khalkhas sought refuge in Inner Mongolia, and in 1691 their princes pledged alliance to Kangxi and accepted Qing suzerainty. Five years later Galdan's armies again invaded Khalkha

territory, and this time Kangxi himself headed an expedition to end this threat along his northern frontier. In 1697 Galdan's forces were defeated and the Eleuth king was forced to commit suicide. The northern border of the Qing Empire was now stabilized, and all of the peoples of Outer Mongolia were placed firmly under Manchu control. In 1720, Qing armies also established control over Tibet.

Domestically Kangxi proved to be a conscientious ruler, and under his administration the empire prospered. He insured that public works, such as maintenance of the dikes along the Huang (Yellow) River and the navigability of the Grand Canal, were completed. He personally conducted six tours of the empire during his reign, during which he inspected conservancy projects and the work of his officials. While in Beijing he continued to keep a close watch on the work of the empire's bureaucracy by reading secret reports compiled by teams of censors who were routinely sent to inspect the work of the officialdom. Having mastered classical Chinese, Kangxi was a great patron of Chinese culture and scholarship, and during his rule he sponsored court painters, academies of learning, imperial porcelain factories, and the compilation of works of literature and philosophy. In an effort to retain the traditions of his nomadic heritage, Kangxi also enjoyed periodic hunting trips with members of the Manchu aristocracy.

Emperor Kangxi was a ruler who exhibited great intellectual curiosity, and this was demonstrated by his use of Jesuit advisers. Not only were the missionaries used as translators during the negotiations with the Russians at Nerchinsk, but they were also employed as cartographers and charged with running the Imperial Board of Astronomy because of their demonstrated mathematical knowledge and ability to correct the Chinese calendar.

Kangxi had twenty sons and eight daughters who lived to adult age, but only one of these, the prince Yinreng, was born to the first empress. The young prince was named heir apparent at a young age and was left to serve as acting ruler when his father was absent from the capital during the military campaign against Galdan and the inspection tours of

If you want children to keep their feet on the ground, put some responsibility on their shoulders. • **Abigail Van Buren, nee Pauline Esther Friedman (1918–2002)**

the south. Yinren, however, proved to have a cruel personality, and after years of reading secret reports and memorials documenting the prince's abusive behavior, Kangxi finally revoked Yinren's status as heir-apparent in 1708 and ordered him arrested. When Kangxi died in December 1722 he had failed to fulfill an important responsibility by not publicly naming an heir, and, in the power struggle that followed his death, his fourth son took the throne under the reign name Yongzheng. Despite his failure to name an heir, Kangxi is recognized, along with Qianlong (reigned 1736–1799), as one of two greatest emperors of the Qing period. The empire's borders were strengthened through his military campaigns, and China's economy, culture and population prospered due to the new stability.

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See also China

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Kenyatta, Jomo

(1891?–1978)

FIRST PRIME MINISTER AND PRESIDENT OF INDEPENDENT KENYA

Jomo Kenyatta became the first president of the Republic of Kenya in 1962. He is important in word history for his campaign against neocolonialism. Unlike more socialist-inclined African leaders, he advocated pro-Western policies of economic development, but he became a role model of younger African leaders for asserting the rights of African countries in the modern world.

Born in the Kikuyu highlands of East Africa, Jomo Kenyatta rose to become an international spokesman for African nationalism and an elder statesman for the moderate wing of the nonaligned movement of developing nations that wanted to avoid placing themselves in either the U.S.-led or the Soviet-led camps during the Cold War. As a boy he received a traditional Kikuyu education, moving through childhood with other members of his age group and thereby finding his place in Kikuyu society. About 1909 he joined the Church of Scotland and attended a mission elementary school; he was baptized John Peter Kamau in 1914. Employed by a government contractor, he was exempted from otherwise compulsory military labor service during World War I. Later, as Johnstone Kenyatta, he worked for the Nairobi municipal authority; in Nairobi he joined the East Africa Association of similarly educated Africans and then in 1924 the newly formed Kikuyu Central Association (KCA). He was soon editing the Association's publication *Muigwithania* ("Reconciler" in Kikuyu), which attracted the attention of British colonial authorities since it was the territory's first vernacular publication and actively opposed land alienation (policies by which British interests disposed Kenyans off

their land in favor of colonial settlers). Kenyatta was elected general secretary of the KCA in 1928, and the following year he represented the Association's views before the British Colonial Office in London.

In 1931 he returned to Kenya to give evidence before the Kenya Land Commission on the matter of Kikuyu land alienation, but he was back in England the next year studying at Selly Oak College in Birmingham. He also traveled widely in Europe, attending several conferences of African and other colonial peoples sponsored by progressive and socialist agencies, and he spent a year at the Comintern Institute in Moscow. He later studied anthropology with the famous anthropologist Bronislaw Malinowski (1884–1942) at the London School of Economics, completing his book *Facing Mount Kenya*, an extraordinary account of a way of life that was also a plea for its preservation. Thereafter he was known as Jomo Kenyatta.

Kenyatta brought those same concerns to the 1948 Pan Africa Congress in Manchester, England, for which he served on the organizing committee as assistant secretary. He joined Kwame Nkrumah (the future prime minister of independent Ghana), Hastings Banda (the future president of independent Malawi), and other African delegates in calling for an end to the colonialism that still dominated their continent. The conference, along with other gatherings of Africans in London, created the intellectual environment that later manifested itself in the Organization of African Unity. Kenyatta returned to British East Africa in 1946 and the next year became president of the Kenya Africa Union (KAU), which had been formed in 1944 as a primarily Kikuyu cultural association. As president of the KAU, Kenyatta supported calls for the preservation of Kikuyu ways in the face of

Our children may learn about the heroes of the past. Our task is to make ourselves the architects of the future. • **Jomo Kenyatta (1894–1978)**

continued British domination of the economic and political life of his country, but as the only African political leader in Kenya capable of uniting Africans throughout the territory, Kenyatta worked steadfastly to broaden the base of the KAU into a national movement. He accomplished this by specifically including other groups, such as the Kamba and Meru, in its anticolonial activities.

Despite these public stands, he was unsuccessful in tempering the most militant Kikuyu protests, which gave rise to the Mau Mau guerrilla movement. After a number of incidents—in which, ironically, more Africans accused of collaboration were killed than Europeans—the British declared a state of emergency, increased their police and military presence, banned the KAU, and arrested Kenyatta and other leaders of the association. Kenyatta was accused of being the mastermind of the Mau Mau movement, and in 1952 he and other KAU officials were tried. Despite continuing denials of his involvement, and based on likely perjured testimony, Kenyatta was convicted and imprisoned for a term of seven years.

The British military continued to campaign against the Mau Mau insurgents, finally gaining the upper hand in 1959, when the state of emergency was lifted. The next year a new political party, the Kenya African National Union (KANU), proclaimed Kenyatta its president and campaigned for his release from prison, which came in 1961. But colonial leaders insisted that Kenyatta should not hold public office, so when KANU won a majority of seats in elections for internal self-government in 1962, the party refused to form a government. Only after a second electoral victory in 1962 was Kenyatta permitted to assume the position of prime minister. He continued in that position upon Kenya's independence in 1963, and in

the following year he became the first president of the Republic of Kenya.

Under his leadership Kenya worked to follow his personal slogan, “Harambee” (meaning “let’s all pull together” in Swahili), with policies that invited British settlers and their descendents to be full citizens of the country.

On the international scene, Kenyatta drew much attention as an elder statesman for the nonaligned movement, in particular in its campaign against what he and others described as neocolonialism. But he also advocated pro-Western policies of economic development, a stance that sometimes separated him from other, more socialist-inclined, African leaders. Nonetheless, his long insistence on the viability of African societies and steadfast assertion of their rights in the modern world continued to impress younger African leaders as a model assertive leadership. He died in 1978 while still president of Kenya.

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See also Africa, Colonial; Africa, Postcolonial

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Khmer Kingdom

The Khmer acquired and maintained their substantial kingdom by a skillful combination of warfare, diplomacy, and pragmatism. At its height in the twelfth and thirteenth centuries, the Khmer-established Angkor Empire controlled much of present-day Cambodia, Laos, Thailand, and southern Vietnam. After 1431, the Khmer became pawns perched uneasily between the expanding Vietnamese and Thai states.

The Khmer people established some of the earliest Southeast Asian states as well as the great Angkor Empire. Angkor dominated much of mainland Southeast Asia for half a millennium beginning in the ninth century, flourishing as one of Eurasia's most creative societies.

Early Khmer States and Indian Influences

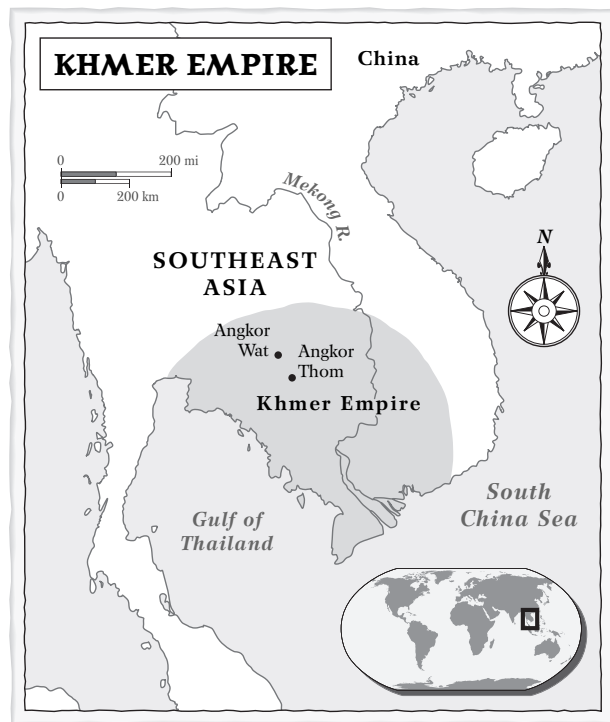
Just prior to the common era India began exercising a strong influence in Southeast Asia. The process by which Indian ideas spread into and influenced many Southeast Asians, often termed "Indianization," mixed Indian ideas with local ideas. This occurred at about the same time as classical Greco-Roman civilization was spreading around the Mediterranean. Indian traders and priests began regularly traveling the oceanic trade routes to mainland Southeast Asia, which they termed the "land of gold," settling in some of the states and marrying into or becoming advisers to influential families. They brought with them Indian concepts of religion, government, and the arts, as well as writing systems. Mahayana Buddhism and

Hinduism became important in the region, especially among the upper classes.

The first great Khmer state, Funan, thrived from around 60 to 540 CE. Centered in the fertile Mekong River delta of southern Vietnam, Funan was in regular contact with China, had adopted many Indian practices, valued literacy, and built masterful canal systems linking its major cities. At times Funan may have dominated much of what is today Cambodia and southern Thailand. With its access to major land and sea trade routes, Funan was part of large trading networks. Trade goods from as far as Rome, Arabia, Central Asia, and perhaps East Africa have been found in its ruins. Merchants from various countries, including India and China, lived in the major port city, exporting forest products such as ivory, rhinoceros horn, and wild spices. Another Khmer kingdom or grouping of city-states, called by the Chinese Zhenla, emerged inland in the Mekong River basin around the fifth century and gradually outshone Funan. Zhenla played a dominant regional role until the seventh century, when it was destroyed by a civil war.

The Angkor Empire and Government

The greatest Khmer state was the Indianized kingdom of Angkor, established by a visionary king, Jayavarman II (c. 770–850; reigned c. 790–850), in 802. The name *Angkor* derives from the Sanskrit term for holy city, and Jayavarman identified himself with the Hindu god Siva. Hindu priests probably brought the Indian idea of god kings to Khmer rulers. His successors extended and consolidated the kingdom. At its



height in the twelfth and thirteenth centuries Angkor had a loosely integrated empire controlling much of present day Cambodia, Laos, Thailand, and southern Vietnam. The Khmer acquired and maintained their substantial empire by a skillful combination of warfare, diplomacy, and pragmatism.

This vigorous imperial system compares favorably with the fragmented states of medieval Europe, bearing some resemblance to the Carolingian state founded by Charlemagne in northwestern Europe around the same time. The well-financed Angkor government supported substantial public services, including a system of hospitals, schools, and libraries. Some kings were noted as avid patrons of the arts. Theater, art, and dance reflected Hindu values. For example, at festivals troupes of dancers enacted scenes from Hindu holy books.

Monuments, Canals, and Urbanization

Many magnificent stone temple mountains were built as sanctuaries and mausoleums, designed to represent the Hindu conception of the cosmos. These temples also provided vivid and concrete symbols of a monarch's earthly power, since the construction involved advanced engineering skills and massive amounts of drafted labor. The most famous temple complex is

Angkor Wat, the largest religious building in the pre-modern world. It dwarfed the magnificent cathedrals of Europe and grand mosques of Baghdad or Cairo. The reliefs carved into stone at Angkor Wat and other temples provide glimpses of daily life, showing fishing boats, midwives attending a childbirth, merchant stalls, jugglers and dancers at a festival, peasants bringing goods to market, the crowd at a cockfight, and men playing chess.

Drafted workers also constructed an extensive hydraulic network of canals and reservoirs for efficient water distribution, demonstrating some of the most advanced civil engineering in the premodern world. The Khmer were successful farmers, obtaining astonishing productivity from what was originally only a moderately fertile region. The Khmer may have had the most productive agriculture in premodern history, producing three to four crops a year. Only a few pre-modern peoples could match Khmer farming capabilities, which depended on an ingenious water storage system and the unusual geography of central Cambodia, including a large seasonal lake which renewed the soil. But historians still debate whether Angkor wet-rice farming was based chiefly on rainfall and flooding or irrigation, or perhaps a combination of both.

By the twelfth century the bustling capital city, Angkor Thom, and its immediate environs had a substantial population, perhaps as many as one million people, much larger than any medieval European city and comparable to all but the largest Chinese and Arab cities of that era. The magnificent temples still standing today and the remnants of the remarkable water control network testify to the prosperity and organization of the society. While the source of some speculation, the evidence is unclear whether neighboring or subsequent states imitated or adapted the Khmer water control network.

Angkor Society

The rigid Khmer social structure resembled that of medieval Europe in some respects. Each class had its appointed role, bound by many rules. Priestly families led a cult for the popular worship of the kings,



who claimed godlike powers. Below the priests were the trade guilds. The vast majority of people were essentially serfs tied to the soil they plowed, to the temples they served, and to the king's army. In exchange for considerable material security, Khmer commoners tolerated a highly unequal distribution of wealth as well as substantial labor demands. No India-style caste system existed despite the strong Hindu influence. Like many premodern societies, there were many slaves and people in some form of temporary or permanent involuntary servitude.

Khmer women played a much more important role in society and politics than in most other places in the world at that time, due in part to a matrilineal tradition. Women dominated the palace staff, and some were even gladiators and warriors. They also operated most of the retail stalls. Chinese visitors were shocked at their liberated behavior. Women were also active in philanthropy, scholarship, and the arts, including the national passion for poetry. Unfortunately all the manuscripts, written on palm leaves, deteriorated over the centuries.

The Heritage of Angkor

Eventually Angkor declined from varied causes. Military expansion overstretched resources. Increased temple building resulted in higher tax levies and forced labor, antagonizing much of the population into rebellion. There is some evidence that there may have been a breakdown of the irrigation system. Outside forces also played a role. Amidst the growing disruption, Theravada Buddhism spread into Angkor in the mid-thirteenth century from Sri Lanka, and gradually became the dominant religion, promoting nonviolence and undermining god-kings. By the thirteenth century the ancestors of the Thai and Lao peoples had migrated from southwest China and set up states in northern Thailand and the Mekong River valley. They repeatedly sacked Angkor and seized much of the empire's territory. The Angkor capital was abandoned in 1431, and the imperial structure disintegrated by 1440. But Angkor left an enduring legacy as the Thai

peoples gradually adopted many aspects of Khmer government, culture, and religion.

The ensuing centuries proved difficult. The Khmer became pawns perched uneasily between the expanding Vietnamese and Thai states. Both their neighbors periodically attempted, often successfully, to control or dominate the demoralized remnants of the once splendid Angkor civilization. Beginning in 1863 the French controlled Cambodia, a colonization that only ended in 1953. Terrible conflict and genocide devastated Cambodia from 1970 until the mid-1990s. Yet, even today, the image and spirit of long abandoned Angkor continues to inspire the Khmer people.

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King, Martin Luther, Jr.

(1929–1968)

U.S. CIVIL RIGHTS LEADER

Martin Luther King Jr.'s leadership, from the mid-1950s until his death in 1968, was critical to the civil rights movement's success in ending the legal segregation of African Americans in the South and other parts of the United States.

As one of the most prominent civil rights leaders of the mid-twentieth-century United States, Martin Luther King Jr. used nonviolent tactics borrowed from Mohandas Gandhi in seeking to overturn segregation, a decision that contributed to King's earning the Nobel Peace Prize in 1964.

King (original name Michael Luther King Jr.) was the son and maternal grandson of Baptist preachers, both of whom served at the prestigious Ebenezer Baptist Church in Atlanta, Georgia. His parents' comfortable middle-class lifestyle afforded young Martin a solid education and opportunities not available to all black Americans at the height of segregation. His secure upbringing, however, did not shield him from the prejudices then common throughout the South.

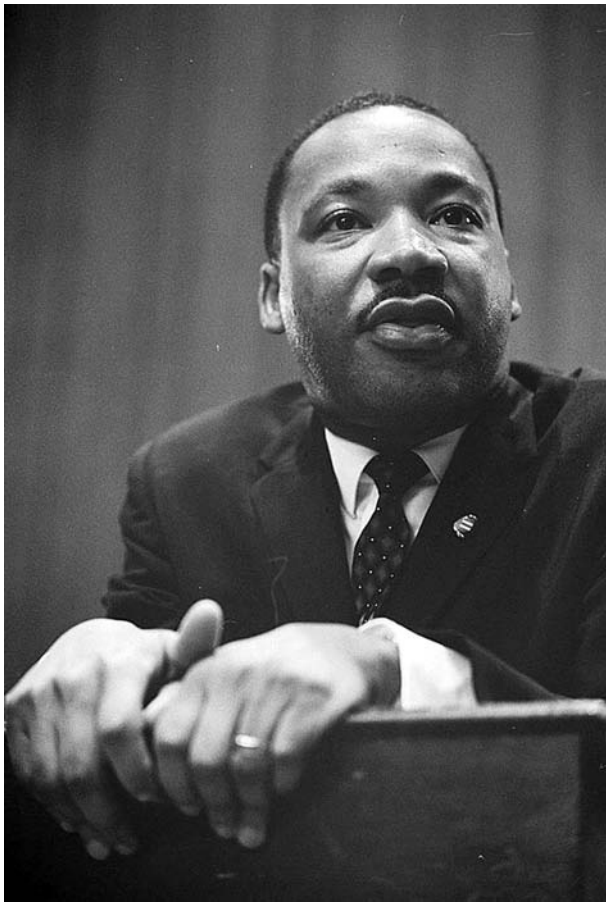
King entered Morehouse College at age fifteen under a special wartime program intended to boost enrollment. He graduated in 1948 after entering the ministry, and he spent the next three years at Crozier Theological Seminary in Chester, Pennsylvania, where he studied Gandhi's philosophy of nonviolence as well as the works of contemporary Protestant theologians. After earning a bachelor of divinity degree, King moved on to Boston University to earn a doctorate. There he met Coretta Scott, a native Alabamian who was studying at the New England Conservatory of Music. They were married in 1953 and had four children. King received his doctoral degree in

1955, a year after he accepted a position as pastor of the Dexter Avenue Baptist Church in Montgomery, Alabama.

Montgomery's civil rights advocates decided in 1955 to contest racial segregation on that city's public transportation system. When Rosa Parks, an African-American woman, refused to give up her bus seat to a white passenger and police arrested her for violating the city's segregation law, the activists formed the Montgomery Improvement Association to boycott the transportation system. They chose King as their leader. He quickly showed his commitment to the cause through his inspiring rhetoric and public fearlessness after his family home had been bombed. Just over one year after the start of the boycott, the city integrated the bus system.

Wanting to capitalize on the success of the Montgomery boycott, King organized the Southern Christian Leadership Conference (SCLC) in hopes of creating a national movement. He lectured on race-related issues around the country and abroad. A meeting with Indian Prime Minister Jawaharlal Nehru helped cement his belief in using nonviolent resistance. He also drew inspiration from the struggles of Africans trying to overthrow colonialism and establish independent nations.

In 1960, King became co-pastor at Ebenezer Baptist Church with his father. The position allowed him to devote much of his time to the SCLC and civil rights. Sensing the time had come to launch a concentrated attack against segregation, he supported sit-in demonstrations staged by local black college students. His arrest and imprisonment for violating his probation on a minor traffic offense received national attention, especially after Democratic presidential



Martin Luther King Jr. at a press conference. Photo by Marion S. Tricosko. Library of Congress.

candidate John F. Kennedy interceded on his behalf. The move garnered so much publicity that it most likely contributed to Kennedy's narrow victory eight days later.

The next five years found King's influence at its peak. He did not shy away from using the news media—especially television, then in its infancy—to bring national and international attention to the civil rights struggle. Images of women and children offering no resistance while being beaten by police or attacked by police dogs stunned the American public, and brought pressure on the administrations of Kennedy and Lyndon B. Johnson to enact and enforce federal civil rights legislation.

Not everyone in the black community supported King's tactics. In the spring of 1963, he wrote his famous "Letter from Birmingham Jail" defending the use of nonviolent tactics instead of the simple negotiation supported by many black clergy of Birmingham. King argued that nonviolent direct action

would bring about such a crisis that the white community would have no choice but to negotiate. Later that summer, to bring about further pressure on federal legislators, King participated in the historic March on Washington. Nearly 200,000 attended the peaceful rally to demand equal justice under the law. There, he gave his famous "I Have a Dream" speech, in which he emphasized his belief that one day, all men would be brothers, regardless of racial or cultural distinctions. The following year saw the passage of the Civil Rights Act of 1964, authorizing the federal government to desegregate public accommodations and outlawing discrimination in publicly owned facilities and in employment. The high watermark of the civil rights movement, and perhaps of King's life, came in December when he received the Nobel Prize for Peace.

The Selma, Alabama, demonstrations of March 1965 revealed the first opposition to King's tactics within the civil rights movement. When King opted not to confront armed state troopers and instead turn back, the decision cost him the support of many young radicals who were already criticizing him for being too cautious. Though the march influenced the passage of the Voting Rights Act of 1965, King appeared to be growing out of touch with radical activists who faced poverty and other problems in addition to segregation in urban centers and the North. Their public derision of King and the seeming failure of nonviolent demonstrations to bring about further change led him to change his focus and move beyond concerns of race. In 1967, he firmly came out in opposition to the Vietnam War, a decision that cost him further support in parts of the black community and in Washington. His attempt to widen his base by organizing a coalition of the poor of all races did not gain him great support in any segment of the population.

Undeterred, King began planning a Poor People's March to Washington in the spring of 1968. He interrupted his planning efforts to go to Memphis, Tennessee, to lend his support to a strike by that city's sanitation workers. A sniper killed him while he stood on the second-story balcony of the

I submit that an individual who breaks a law that conscience tells him is unjust, and who willingly accepts the penalty of imprisonment in order to arouse the conscience of the community over its injustice, is in reality expressing the highest respect for the law. • **Martin Luther King Jr. (1929–1968)**



President Lyndon Johnson signs the Voting Rights Act on the Capitol Rotunda, Washington, D.C., as Martin Luther King Jr. and other civil rights leaders look on (6 August 1965).
National Archives.

Lorraine Motel. His death touched off rioting in over one hundred cities across the country. More importantly, it hastened the shift of the civil rights movement toward violent confrontation, followed by its splintering in the 1970s and slowing in the face of backlash against affirmative action beginning in the 1980s. Part of this is attributable to King's elevation over the years to martyr status. Some scholars and social activists have argued that this deification has caused the civil rights movement to lose sight of the grassroots efforts necessary to effect social change, and has diluted King's own message of economic justice. Nonetheless, that his legacy can still spark such debate decades later testifies to his continued social and political relevance.

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See also African American and Caribbean Religions; Civil Disobedience; Human Rights; Race and Racism

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Kinship

Sociologists who study kinship patterns examine how different cultures and societies define and value kinship, whether through blood ties (procreation and marriage) or through bonds among groups who hold reciprocal interests in nurturing and sustaining themselves. Debates about what are misleadingly considered “tribal” forms of kinship spark modern discussions about the roles of mothers and fathers in modern society.

In the most basic sense the word *kinship* refers to the connections people have through family—by blood (procreation) and marriage. Thus defined, *kinship* is reducible to parent-child, sibling-sibling, and spouse-spouse relationships, and it extends to include other family members—grandparents, aunts, uncles, cousins, and in-laws. But people often claim or evoke kinship with others through a community of shared or common interests, especially regarding nurturing and sustenance. Sociologists who study kinship presume differing views on how kinship can be perceived and valued in a particular culture or society, while data from anthropologists contributes input to current discussions about modern-day family structure.

Constructionism

Constructionists—sometimes called “cultural constructionists” or “social constructionists”—posit or assume that people create their conceptual worlds with minimal influence from outside other than through power relations. They hold that the procreative basis of kinship is an ethnocentric illusion. They point out that kinship ties in various parts of the world are created by non-procreative means. Foremost among

these means are co-residence, food sharing, and food giving, with nurturance through adoption being perhaps a special case of the first and third means. Thus, in many Inuit (Eskimo) communities adoptive parents are referred to as (the English equivalent of) step-parent or foster parent. In Papua New Guinea genealogies are frequently adjusted to transform non-kin into kin when they become co-residents. In parts of east Africa a man in his travels may befriend another man, with whom he may perform a ceremony wherein each drinks the blood of the other. By this act the two men are said to be “brothers.” Constructionists rightly emphasize the importance of sharing in such cases. Thus, in the Inuit example of adoption the adoptive mother’s breast milk will go to the child if he or she is still an infant, and the mother supplies other foods if the child is older. In the Papua New Guinea example the sharing of food is likely to be more evenly balanced. In the east African example food is also shared, most conspicuously in the form of blood.

Focality

Constructionists almost entirely ignore, by contrast, the issue of focality. Consider the Inuit example. The terms assigned to Inuit adoptive parents are, as noted, based on parent terms, much like the expressions *foster parent* and *step-parent*: all refer back to procreative parents, who provide the focal points for these latter expressions. We can say much the same for genealogy manipulation in Papua New Guinea: non-kin are thus regarded as procreative kin, such that these latter people serve as the bases or foci from which kin classes are extended. In east Africa two men who drink each



other's blood are imitating postnatally what is true—and is thought to be true—of real brothers natally—that is, sharing blood. In all these cases—and many others—non-procreative kinship notions are modeled on procreative ones.

Ethnoembryologies

Constructionists and non-constructionists alike will insist that the term *procreative parents* be understood to refer to parents according to a local culture's appreciations of human reproduction or "ethnoembryologies." They are likely to point out that, even in Western civilization, the modern scientific finding that both parents contribute equally to the fetus is only about a century old, before which time it was maintained—although not unequivocally—that the father's sperm contained a miniature person, who was merely incubated in the mother. This notion, in fact, is a common ideology outside the West as well. Other variations exist. Probably the two most common of these are (1) that the mother supplies the soft parts of the body, the father the bones and (2) that the mother supplies the entire body, whereas the father either supplies the spirit or acts as an intermediary between the carnal world and the spiritual world. Thus in parts of Aboriginal Australia the father is said to "find" the spirit of his yet-to-be-born child in a dream and to direct it from there to the mother's womb. From this example it might seem misleading to refer to this role with the term *father*; the reasons why it is not misleading in the next section. Here three points need to be made.

First, the carnal-spiritual dichotomy is often violated by the special treatment accorded the bones, which, although of the body, decay only gradually and thus are likely to evoke notions of durability and permanence, like the spirit. Thus, in Aboriginal Australia the corpse is buried soon after death and disinterred after a year or so, at which time the flesh that remains is removed and discarded. The bones, by contrast, are retained: they are placed in a hollowed-out log decorated with emblems signifying the deceased's spiritual heritage, and the log-cum-bones is carefully hidden on the same tract of land

on which his or her father first encountered his child's spirit. The attention given to the bones of relatives and saints in the great religions of the East and West provides more familiar examples of much the same kind of thinking.

Second and even more important, two or more ethnoembryologies may exist in the same community. Among Aboriginal Australian men with whom researchers have talked, some argued for variation (1) noted earlier, others for variation (2), still others for both on different occasions. Statements that imply that all persons in a community believe the same thing fail to appreciate the richness of human experience and variation.

In fact—and this is the third and most important point—we may question whether the term *belief* helps us to achieve this appreciation. Older Aboriginal men in the Western Desert of Australia stress the "finding" experience noted earlier, whereas women and younger men make it plain that sexual intercourse is necessary for conception. Moreover, the younger men are quieted on this subject by the older men, who control the most important religious knowledge and who refuse to discuss sexual matters, insisting on the importance of "finding." An unwillingness to mix carnal and spiritual discourse, an overriding of tacit knowledge by dogma, seems to be involved here. However, tacit knowledge implies a presence, not an absence.

Ignorance of Physical Paternity

Failure to recognize this caused the first anthropologists who worked with Aboriginal Australians to conclude that these people are, as it was once phrased, "ignorant of physical paternity." This mistake was not innocent. It fed Victorian typologies (classifications based on types or categories) about "primitive society" and, later, racist ideologies concerning the alleged intellectual inferiority of Aboriginal Australians. Its early twentieth-century equivalent was a comparable claim for the Trobriand Islanders, off the northeast coast of Papua New Guinea. Subsequent research in the Trobriands has shown that this "ignorance" is, in fact, part of a dogma wherein groups of a certain kind create the illusion that they are self-perpetuating,

Relations are simply a tedious pack of people who haven't got the remotest knowledge of how to live, nor the smallest instinct about when to die. • Oscar Wilde (1854–1900)

that the spirits of the dead of these groups enter their women and are reincarnated through them in their children. In order to achieve this reincarnation, however, sexual intercourse with a nongroup member is nonetheless posited as necessary.

Matriliny and Patriliney

Victorian and early twentieth-century anthropologists who promulgated the “ignorance of physical paternity” idea linked it with the reckoning of kinship through women only—what has come to be called “matriliny” or “matrilineality.” After all, if paternity were unknown, the reckoning of kinship through men could not occur. Moreover, they associated matriliny with “matriarchy” or rule by women. Within anthropology these ideas were dispelled by 1930, largely by research in the “matrilineal” Trobriands by the Polish anthropologist Bronislaw Malinowski (1884–1942). More recently, however, certain feminist thinkers have resurrected them. So it is useful to revisit some of what Malinowski and his cohorts discovered.

First, kinship everywhere is reckoned through both parents—that is, bilaterally—according to one or another theory noted in the discussion of ethnoembryologies. Where kinship reckoned solely through women applies, it does so for certain purposes only, and these purposes vary considerably from one such community to another. Where matrilineal groups exist, they may or may not have great importance in everyday life, but even if they do, the expression *matrilineal society* oversimplifies and misleads.

Second, it can be argued that matriarchies do not exist. Men tend to dominate women everywhere, although great variation exists in the extent to which—and the circumstances under which—they do so. The “goddess” imagery espoused by some feminists is not consistent with the status of flesh-and-blood women. If anything, age—not gender—is the more important criterion cross culturally for assuming authority: the world tends to be run by relatively healthy people older than forty.

Today, some feminists also have taken over the Victorian narrative of the “evolution” of patriliney—or

patrilineality—from matriliny, and again “ignorance of physical paternity” is key. When men (so the narrative goes) somehow finally realized that they, too, have a role in conception, patrilineal kin reckoning became possible, and it replaced matriliny and matriarchy with patriliney and patriarchy. But the following factors must be considered.

First, in communities with patrilineal groups, as in all others, kinship is reckoned through women as well as men.

Second, although the position of women is generally higher in communities with matrilineal groups than it is among those with patrilineality, the latter are at least as varied as the former.

Third, probably the most radical of these variations is that between groups with lengthy patrilineal genealogies and those with minimal genealogical reckoning, such that being the child of one’s father is sufficient to attain membership, and the unity of the group is expressed nongenealogically, or through genealogical metaphor. Researchers in a part of Aboriginal Australia, for example, found that some Aboriginal people were said to be reincarnations of parts of a Primeval Rock Python, others of parts of a Primeval Crayfish, still others of parts of a Primeval Duck. The father—but not the mother—of each such individual was also said to be Rock Python, Crayfish, or Duck, as the case may be, but the genealogical relationship among (for example) Rock Python people was largely unknown and for most purposes irrelevant. Such groups have matrilineal analogues in other parts of the world.

Fourth, at the other extreme are notions of patriliney that assume the entire ethnic unit—indeed, in some cases the entire world—is composed of the descendants of a single primeval creator or a set of brothers. The Bible, for example, stipulates that everyone on Earth is descended from one or another of Noah’s three sons, and ideologies of this sort are common in the Muslim Middle East of today and in adjoining parts of sub-Saharan Africa. With large populations, of course, no attempt to relate everyone by detailed patrilineal links is possible. No matrilineal analogues exist.

Fifth, in communities with patrilineal groups, as in those with matrilineal groups and in those, like

most in the West, with no such groups, social life is most penetratingly seen as involving human beings acting in various recognized capacities. Thus a title, such as “professor of anthropology,” is relevant when one is in academic settings but not when one rides the New York City subway. “Tribal” communities do not have subways, gyms, and stamp dealers, but they have more than just patrilineal or matrilineal groups. In fact, the term *groups* is probably more than a little misleading: it suggests a boundedness and a permanence that are, literally, out of this world. Nowadays most anthropologists have abandoned the heavy reliance of their predecessors on what one critic has dubbed “groupology,” but it survives in feminism and other influences on modern life.

Kinship and Modern Life

Forms of kinship, like everything else, have histories. Of particular importance to present-day kinship studies—and modern life more generally—are the new reproductive technologies that, among other things, allow women to bear children without male parental behavior other than insemination. Such technologies may suit some women, but what is their impact on the raising of children? Considerable research suggests it is not entirely positive. People in the Western world have a long record of looking to anthropological data from the “tribal” world to suggest alternative modes of living, the range of human possibility. But advocates of fatherlessness (in the noninseminatory sense) will find little if any relief in such data. In approximately 85 percent of “tribal” communities both parents co-reside with their dependent children, and in virtually all of the remaining 15 percent, in which fathers are not present, close male kin of the mothers are. The media slogan “Families come in all shapes and sizes” is not much supported by these data.

Moreover, in many biparental communities, a pattern exists that has been termed “aloof fatherhood.” In these communities there are elaborate ideologies about the alleged destructive and/or polluting powers of women; these ideologies lead men to distance

themselves from their wives spatially (usually in designated “men’s houses”) and emotionally. Some people have suggested that this aloofness of the husbands encourages women to turn to their young sons for emotional warmth, but this quest is not an entirely welcome one. Growing boys are likely to experience it as an attempt to annihilate their emerging male selves, to retain an unconscious sense of female gender identity, and to reproduce their fathers’ fantasies and behavior concerning women. Indeed, “men’s house” rituals nearly always involve the imitation by men and boys of some aspect of female reproductive behavior, most commonly a sort of “pseudo-menstruation” effected by letting blood. Unsurprising, too, is a recurrent myth-pattern, wherein a primeval age is posited in which current gender roles are largely reversed. This myth-pattern, incidentally, has fueled modern “matriarchy” theory, but we probably more accurately can see it as a projection onto local notions of “history” of the power relations that boys experience with their mothers under “aloof fatherhood.” Finally, a part of this complex is an exaggerated belligerence that some scholars have called “protest masculinity.”

This last characteristic most importantly connects “aloof fatherhood” in the “tribal” world to the growing incidence of fatherlessness in modern households—what some scholars have called our most urgent social problem. Adolescent boys raised without fathers are far more likely to commit violent crimes than are other boys, even if one controls for other factors (e.g., race, household income). Among these crimes are the physical and sexual abuse of women and children. Moreover, such boys are also much less likely later on to commit themselves to relatively permanent reproductive relationships with women. Many thoughtful people—of both genders and all positions on the political spectrum—are concerned about such modern-day trends.

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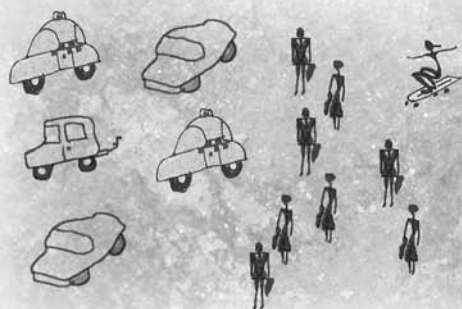
See also Bands, Tribes, Chiefdoms, and States; Matriarchy and Patriarchy; Women’s and Gender History

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Knowledge Economy

One of the most fundamental properties of human social existence is distributed knowledge. While knowledge resides, in the final analysis, only in the human brain, it needs to be shared with others and distributed in order to be effective. This process embodies what is known as a knowledge economy.

Put simply, no one can know everything, and so cooperation among people consists of sharing necessary knowledge. Historically, one of the main characteristics of commercially and technologically sophisticated societies has been the fine degree to which knowledge is divided; the degree to which labor is divided is to a large extent derived from the division of knowledge. A knowledge economy is thus based on creating, evaluating, and trading of knowledge.

There are many ways to cut and classify the kinds of knowledge people need to possess and exchange. One appealing way is to divide the information up into those parts that deal with social matters and human affairs and those that concern the external environment. These roughly correspond to the spheres of *exchange* and *production*. While the sphere of exchange contains *allocative knowledge* such as “where do I hire a pipe fitter,” “what is the price of bread,” or “how do I purchase the stock of Microsoft,” the sphere of production contains mostly statements about the physical and biological environments in which people operate.

Technology concerns the latter sphere: it consists of information that regards natural phenomena and the rules and regularities we can formulate about them. It includes statements like “the Mississippi flows from north to south” and “it snows in the winter in

Michigan” as well as Schrödinger’s wave equations. Science is a small subset of this set of knowledge, which can be termed *propositional knowledge*, but the hallmark of the modern age is that its relative importance in the knowledge economy has risen steadily.

Allocative Knowledge

The ways society has used information to allocate resources and reproduce itself involve some of the central questions of economic history. Information about exchange is summarized effectively in market economies by the price mechanism. In a classic article published in 1945, the economist F. A. Hayek pointed out that in market economies a mind-boggling amount of information is summarized and processed by the price mechanism. The typical consumer of a meal of sushi in Evanston does not have to know where the fish was caught, how it was processed and shipped to Illinois, and how it was cooked: by paying the price of a meal, all this information is summarized and processed by people the consumer does not know and does not have to know. On the other hand, the Japanese wholesalers processing the tuna do not have to know or care who precisely wants to eat what.

Free decentralized markets are neither tools of exploitation nor miracle cures for all of society’s ills; they are above all information-cost-saving devices. Once markets are disrupted or abolished, as happened in Marxist command economies, this information has to be processed consciously by officials, who set prices by decree rather than through competitive processes. The results have been devastating.

Money played a unique role in increasing the informational efficiency of societies, since money served

Information is religion's greatest enemy, and in an age when information is just a few keyboard strokes away from anyone with a computer, this is going to pose a greater threat to Christianity than anything it has yet 'survived.' • **Farrell Till (b. 1933)**

as a unique unit of account and thus made exchange easier. Without a means of exchange, trade would require a double coincidence of wants, which is informationally more cumbersome. Money also provides a measure of value, thus providing different goods with a common denominator, which lubricates the exchange process. It is now widely recognized that decentralized and unregulated markets are the most efficient information-processing social tools in our arsenal. Even when they misfire and create inefficient outcomes, the remedies are often worse than the maladies.

The degree to which societies allocate resources through markets rather than through central planning or another allocation mechanism (such as intra-tribal allocation by the whim of the leader) and the way allocative knowledge is processed and distributed determine to a great degree the social and economic development of a society. Market economies on the Eurasian continent developed, by and large, to a greater degree than those in Africa, Oceania, and pre-1492 America. In western Europe market allocations were highly developed in Roman times but for a variety of reasons declined in the second half of the first millennium, whereas the Islamic Middle East and China were in that sense far more developed.

Parts of western Europe recovered during the Middle Ages, and markets became increasingly important in processing allocative information, with prices of both locally and internationally traded goods increasingly effective in indicating both information about the scarcity (supply) and desirability (demand) of commodities. Moreover, the same kind of decentralized market processes began to control the allocation of labor and land, extending the coordinating role of markets to the factors of production.

In the nineteenth century, even capital markets became increasingly competitive, although in those markets the processing of information was often problematic and inefficient because of informational asymmetries between lender and borrower, and the performance of different economies was often influenced by the functioning of their capital markets.

Allocational information is of course constrained by how well it can flow over communication channels. People wrote letters, and while the postal system was far from perfect, all information societies have found ways of communicating over long distances. Information is the lightest of all cargoes, but it still needs to be moved. Short of unusual forms of optical communication—like smoke signals, the Chappe semaphore telegraph introduced in the late eighteenth century, and the use of (expensive) homing pigeons—information moved with people. Until the nineteenth century, then, the speed of information flows was only as fast as a horse or a ship could travel. This limited the effectiveness of the price mechanism for many goods and services, and before 1800 or so most prices did not converge between regions, a telltale sign of less-than-perfect information flows.

With the introduction of railroads in the early 1830s and the telegraph a decade later, the age of informational globalization truly began. Interest rates and wheat prices quickly converged across the Atlantic after the transatlantic telegraph cable was laid. Despite disruptions due to political upheavals in the twentieth century, the trend toward globalized allocational information has continued. Securities and commodities markets demand that traders and investors have access to highly specific data more or less instantaneously.

The telegraph was a huge step forward, possibly the greatest discontinuity in information transmission in relative terms, but it was gradually displaced by the telephone, by teletexts of various kinds, and eventually by a vast electronic network of information that guarantees the effective operation of markets. This does not mean that these markets deliver the most efficient of all possible worlds, only that arbitrage opportunities do not persist.

Propositional Knowledge

Propositional knowledge was in many ways equally fundamental to the economic performance of society. Whereas commercial exchange societies demand a great deal of information about availability and



A fragment of the Codex, a collection of bark books used in prequest Mesoamerica to classify and organize information. Photo by Chris Howell.

desirability (summarized in prices), this information is not truly indispensable. On the other hand, figuring out the regularity of seasons and plant and animal life was already a knowledge requirement for hunter and gatherer societies. In some sense all modes of production—whether agriculture, manufacturing, or service (such as medical services and transportation)—involve the manipulation of natural phenomena and regularities. And effective manipulation depends on information. Every production technique involves a set of instructions on how to grow potatoes or operate a nuclear power plant. Such instructions require some prior knowledge of the phenomena on which they are based.

Much of economic history can be viewed as the slow evolution of information toward increasing specialization and a finer *division of knowledge*. Engineers, chemists, mechanics, and physicians controlled specialized knowledge, and as the body of knowledge expanded—at an exponential rate during and after the Industrial Revolution—finer and finer specialization was necessary. This implied that individuals needed to have better access to knowledge that was already known to someone in their society. The access to this knowledge depended historically on the technology of knowledge reproduction as well as on cultural factors.

The great discontinuity here was the printing press, which created a bridge between “town and gown” (the non-academic and the academic), but the effectiveness of the printing press as a means of disseminating

information depended on the degree of literacy as well as on the nature of the books printed. As long as most books were concerned with religious issues or were romance novels, their impact on economic development was of course marginal. But in the sixteenth century a technical literature concerned with placing existing information at the disposal of those who needed it at a minimum cost started to evolve.

In other forms, too, the Enlightenment in the West was an information revolution that changed many of the parameters of information flow. Specialization had its costs: from classical times on, philosophers and scientists had moved in different spheres than people like farmers and artisans who produced useful things. As a result, economically productive people were rarely aware of best-practice science, and scientists were rarely interested in the day-to-day problems of production and did not apply their intellects to the resolution of these problems. For China, so rich in scientific knowledge, this was especially true, but it also held for classical antiquity where brilliant scientists and mathematicians such as Archimedes and Hipparchus did not bother with issues dealing with agriculture or manufacturing. This started to change in the medieval Occident, when monks often became leading scientists and technological innovators.

The gap between the two narrowed further after the European voyages, and historians date the closer communications between the two to the middle of the sixteenth century. The use of printed books to disseminate technical information coupled with rising literacy rates and the wider use of paper facilitated these bridges between people who knew things and those active in actual production. Thus, for instance, the celebrated book published by Georgius Agricola, *De Re Metallica* (1556), which summarized what was known at the time in mining engineering, and Jacques Besson’s *Theatrum Instrumentarum et Machinarum*, published in Latin and French in 1569, went through three translations and seven editions in the following thirty-five years. While these precedents were important, the true information revolution came in the eighteenth century with the Enlightenment, which eventually changed the entire process of



technological progress and culminated in the Industrial Revolution.

The Industrial Enlightenment

The informational aspects of the Enlightenment are a central element of the economic and social changes triggered by technological progress. In the eighteenth century, a movement we can term the Industrial Enlightenment, led to a three-pronged change that had far-reaching economic results. First, the sheer number of serious scholars engaging in scientific research in the West increased steadily after the triumphs of Galileo and Newton, whose insights vastly augmented the social prestige of natural philosophers. Second, the research agenda of these scientists increasingly included topics that might benefit the “useful arts” such as chemistry, botany, optics, hydraulics, and mineralogy. In many of these fields, to be sure, science was too little advanced to be of much immediate benefit, but many of the promissory notes issued in the eighteenth century by scientists committed to the Baconian program of controlling nature through understanding it were honored in a later age.

Third, a central goal of the Industrial Enlightenment was to diffuse knowledge. It did so by publishing accessible and user-friendly compilations of knowledge, from books of a general nature like encyclopedias and technical dictionaries to specialized technical manuals and textbooks. The age also saw a meteoric rise in the publication of scientific periodicals, reviews, and abstracts of important work, and there is ample evidence that these periodicals were read by contemporary engineers and inventors. The paradigmatic document of the Industrial Enlightenment was no-doubt the *Grande Encyclopédie*, which was filled with technological information on such mundane subjects as glass-blowing and masonry, accompanied by highly detailed and informative diagrams. The need for “search engines” was felt acutely, and increasingly ingenious engines were developed.

Knowledge was also distributed through informal networks and personal contacts, to a degree

we can only guess at, since most of those contacts have left few records. One such organization about which a lot is known is the Lunar Society, a private club in Birmingham, England, in which some of the best scientists of the age discussed useful knowledge with leading entrepreneurs and engineers. Hundreds of learned societies were established in Europe in the eighteenth century, and while not all could boast the quality of the minds that attended the Lunar Society or the inappropriately named Manchester Literary and Philosophical Society, they all reflected a profound change in the attitudes toward, and organization of, useful knowledge in the West.

Moreover, in this age markets for expertise and technological knowledge also emerge. Much of the work of the great engineers of the time, from John Smeaton and James Watt, consisted of what we would now call consulting. The exact impact of these changes on economic progress is still a matter of some dispute, but its coincidence with the economic takeoff in the West in the nineteenth century can hardly be happenstance.

The Explosion of Access Technologies

In the past two centuries, the role of useful knowledge in society that the Enlightenment pioneered has exploded, to the point where science can be said to have replaced religion in many areas as the central intellectual force determining social development. Modern science and the technological progress it spawned became dynamic elements in world history in the twentieth century. What is notable is not just the vast growth of knowledge of natural phenomena but also the appearance of many new social and technical means for its dissemination: the technical handbooks and dictionaries of the late eighteenth century grew enormously. Historians estimate that in 1800 only about one hundred scientific journals were published—this has grown into a gigantic mass of about twenty thousand scientific journals, not including journals in engineering and other applied sciences. Huge compilations of detailed and highly

specialized information, including catalogs and databases too gigantic for any individual even to comprehend, have been put together with the help of powerful computers.

Access to this information is relatively cheap and sophisticated means exist to select the wheat from the chaff. What made this possible is a combination of changes in the organization of knowledge and the sociology of science, coupled with radical changes in the access technology. Scientists have become a self-policing community, which through complex processes of persuasion and proof establish consensus, always challenging and at times replacing them. Markets for information have become increasingly efficient and widespread, with consultants of all kinds becoming an integral part of the “knowledge society.” In this kind of world, access to what is known by others is essential. But this world also raises many issues of verifiability, reliability, and authority.

Among the many changes in access technology, the Internet, which consists of increasingly sophisticated libraries, more specialized textbooks, summaries of scientific papers, and popularizations of scholarly textbooks, is the crashing climax of two centuries of improving access technology. Early computerized databases evolved into the search engines of today, in which mammoth amounts of knowledge can be accessed by anyone, essentially at zero cost, through such databases such as Medline and Econlit.

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See also Enlightenment, The; Dictionaries and Encyclopedias; Information Storage and Recovery; Libraries; Mass Media; Technology—Computer; Writing Systems and Materials

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Kongo

Portuguese interest in the central African kingdom of Kongo began in 1493 with copper, and soon turned to slave trade. The Kongo achieved wealth and power by participating in this rising global economy, but declining local communities were exposed to French and Belgian colonization in the late 1800s. Sudden decolonization in 1960 and an unusual wealth of natural resources have resulted in the long-term destabilization of the region.

Comparatively little is known of the history of the kingdom of Kongo in central Africa before contact with the Portuguese in 1483. Sometime between the ninth and fourteenth centuries political centralization began, based on the control of intersecting regional trade routes and commodities such as salt, iron, and copper, as well as *nzimbu* shells, which served locally as currency. Taxation provided the necessary revenue for state building, and the redistribution of resources and performance of a royal cult generated loyalty to the king.

With the arrival of the Portuguese, the region's history became inextricably linked with the trans-Atlantic slave trade. The Kongo kingdom rose to unprecedented wealth and power through its participation in the newly arising global economy. But it was this overseas connection that devastated local communities, and, in the second half of the seventeenth century, caused its decline, fragmentation, and eventual replacement by trade networks that operated through localized power centers.

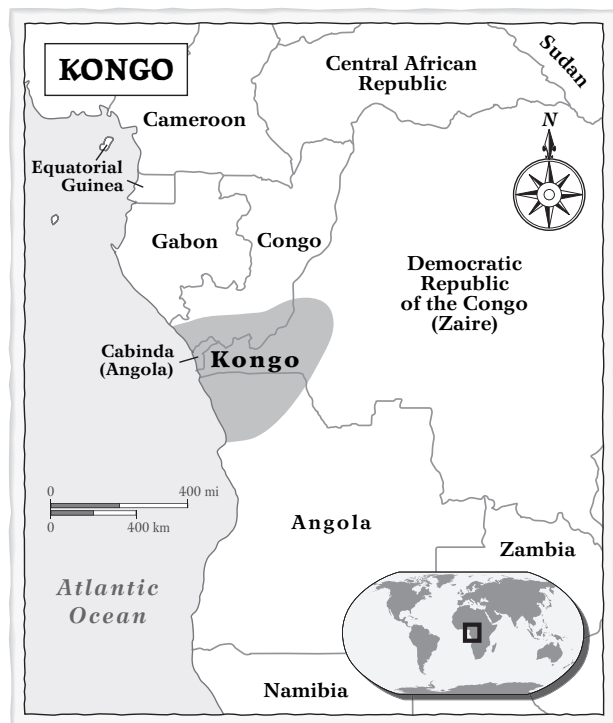
Kongo is a name derived from the local language Kikongo after which the capital city of the kingdom, Mbanza Kongo, located above the banks of the largest

river in the region, the Congo River, was named. When the Belgian king acquired a colony in the region in 1879, it was called the Congo Free State and, from 1908, the Belgian Congo. With political independence in 1960, the former Belgian colony and the neighboring French territory both named themselves after the kingdom.

The Kingdom of Kongo and the Portuguese

In the second half of the fifteenth century, the Portuguese explored the African coast mainly in order to find a sea route to Asia. They also hoped to gain direct access to the gold imported to Europe from Africa, a trade at the time under Italian hegemony. With limited knowledge of central Africa, the Portuguese identified the Kingdom of Kongo as a potential region of gold deposits and avidly pursued this mistaken notion throughout the sixteenth century.

The first contact was made in 1483, when a Portuguese ship's crew kidnapped Africans and brought them to Europe to gain the information that might facilitate their interaction with the kingdom. Two years later, a second expedition was sent to central Africa. This time the Portuguese ventured to offer the king of Kongo what they considered to represent civilization: a shipload of cloth, clothes, tools, horses, Portuguese men engaged in professions ranging from priests to craftsmen, and Portuguese women who were intended to teach the Kongolese the virtues of Christian housekeeping. The king, when presented with the gifts, recognized in these visitors an opportunity to advance his own power and that of his political elite. He carefully weighed the means of furthering



this ambition and settled on Western-style education and Christianity in addition to the import of luxury goods in exchange for copper and, beginning in the sixteenth century, slaves. From this point an ambiguous relationship between Portugal and Kongo began to unfold.

Kongolese society was socially organized in three strata: the court, the villagers, and the slaves. The court was centered on the king, who ruled by delegating power to provincial governors. The latter were responsible for local administration, which involved taxation, the capture of slaves, and mobilizing a standing army that in the sixteenth century consisted of sixteen thousand to twenty thousand slaves. A royal council, with both men and women as members, assisted the king. Once the Portuguese had established their presence in the kingdom, they frequently became members of Kongolese society through marrying women of the nobility or serving as mercenaries. There is even a case, that of Duarte Lopez, in which a Portuguese man became a gentleman of the court and eventually the king's ambassador to Europe.

Initially, the Portuguese focused on the trade in copper, but the trafficking in human beings played an ever more important role. First slaves were exported to the Atlantic sugar islands of São Tomé and Príncipe just off the African coast. Then, from the early sixteenth century, they were taken to the Caribbean and the Americas. By 1530 Kongo annually exported four thousand to five thousand slaves. The increase in numbers contributed to an expanding cycle of violence, with more and more random trade interactions and military raiding campaigns. This was only aggravated when the Portuguese attempted to bypass royal control of the slave trade. They intended to increase their profit margin in part by avoiding paying trade taxes.

Decline

Several factors contributed to the decline of Kongo. The king had exercised a monopoly on the import of luxury goods, which he redistributed to the elite in order to ensure loyalty. But Portuguese traders began to deal directly with local communities, something about which the Kongolese king Afonso I (reigned 1506–1543) complained bitterly in letters to the Portuguese monarch as early as 1526. In this early period of the trans-Atlantic slave trade many of the women, men, and children were enslaved within the kingdom, but the Portuguese indiscriminately bought and branded slaves who were followers of the king and often stood under his protection. By the 1560s the slave trade was causing such severe tension within the kingdom that in 1568 Kongolese villagers joined warriors, probably from the south-east of the kingdom, known as Jaga, who, it appears, initially invaded the kingdom in order to raid for slaves and food, but who proceeded to attempt to destroy the kingdom and to control the slave trade. The king and his followers finally defeated the Jaga with Portuguese assistance in 1569. After that war, in 1575, the Portuguese founded the colony of Angola just south of Kongo, which deprived the kingdom of its regional hegemony over the trade routes. Although

*"And this also," said Marlow suddenly [referring to England, as he began to tell the story of his journey up the Kongo River], "has been one of the dark places of the earth." • From *Heart of Darkness* by Joseph Conrad (1857–1924)*

it did recover politically for a short time, the arrival of Capuchin missionaries in the second half of the seventeenth century undermined another source of royal power when the king lost control over Christianity as a royal cult. Power gradually shifted from the kingdom's administration and political structure to local trading houses. In 1665 Angolan military forces defeated the kingdom militarily. After the death of King António I that same year, a series of succession struggles ensued.

An unlikely figure mounted a final attempt to politically unify the kingdom: a young Kongolesse woman, Doña Beatrice (1684–1706), who in 1704 had a vision of Saint Anthony. Afterward, as a prophetess, she founded an independent church and political movement with an emphasis on Africanization and political unification. Doña Beatrice assembled thousands of followers in the ruins of the former capital city. After she gave birth to a son, the result, she claimed, of immaculate conception, political opponents and the Catholic Church pursued her. In 1706 the latter burnt her at the stake as a heretic.

Implications

The Congo region provides both a historical example of African state building and of the devastating results of African societies' involvement in the trans-Atlantic slave trade. The long-lasting effects of political decentralization and fragmentation in the entire region in the seventeenth century are partly responsible for the lack of resistance to Belgian and French colonization efforts in the late nineteenth century. The outstanding brutality especially of early Belgian colonialism and the suddenness of decolonization in 1960, together with an unusual wealth of environmental resources—including uranium, diamonds, and copper—have re-

sulted in the long-term destabilization of the region, sadly continuing into the twenty-first century.

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See also Africa—Colonial; Decolonization; Portuguese Empire; Slave Trades

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Korea

The Korean peninsula is located at the eastern edge of the Asian continent, with the Yellow Sea on one side and the East Sea on the other. Although scholars have subsumed Korea's history into discussions of East Asia (primarily China), Korean kingdoms and dynasties interacted with foreign powers long before modernization in the late nineteenth century. Today the peninsula is divided into two Koreas, North and South.

Evidence for the existence of human beings in the Korean peninsula can be traced back to about 700,000 years ago, to the foraging (Paleolithic) era. The Neolithic period, in which sedentary life began, started from almost 10,000 BCE. The first state established in Korean peninsula was Old Choson (Joseon); its mythical founding year is said to be about 4,300 years ago, and historical records confirm that it existed around the seventh–eighth century BCE. Since then, the Korean peninsula has experienced the rise and decline (during the Three Kingdoms era) of the states of Koguryo (37 BCE–668 CE), Paekche (18 BCE–660 CE), and Shilla (Silla, 57 BCE–935 CE), whose rule overlapped; the Unified Shilla (668–935 CE); the Balhae (698–926 CE); the Koryo kingdom (918–1392); and the Choson dynasty (1392–1910).

Until the nineteenth century, scholars traditionally discussed the history of the Korean peninsula in the context of the international order of East Asia, primarily the Chinese tributary system, a basic mechanism for forming diplomatic relations with neighboring countries. As a result, it was widely assumed that Korea engaged with the world as a whole only after

its opening and modernization in the late nineteenth century.

But Korean history demonstrates that Korea constantly interacted with other Asian countries and other parts of the world even before the modern period. Korea imported Buddhism and many aspects of material culture from India and Central Asia and also interacted with Arabic countries. Western culture was introduced during the Choson dynasty. Indeed, diverse exchanges with the outside world were indispensable for the development of Korean traditional culture.

Encountering the World: Prehistory–1392

The contact zone of Korea with the rest of the world during the Neolithic and Bronze Age reached as far





An anonymous artist painted this bird's-eye view of a small village near Korea's northern border, circa 1800.

as Siberian steppe culture, China, and Japan. The comb-pattern pottery used by Neolithic people in Korea seems to have been brought into the peninsula by Asian people from the Siberian steppe region. Bronze Age remains of more than 30,000 dolmen (single-chamber megalithic tombs) in the Korean peninsula are similar to the ones found in Liaoning in northeastern China and Kyushu in western Japan. This confirms that exchanges between these regions formed a common cultural sphere.

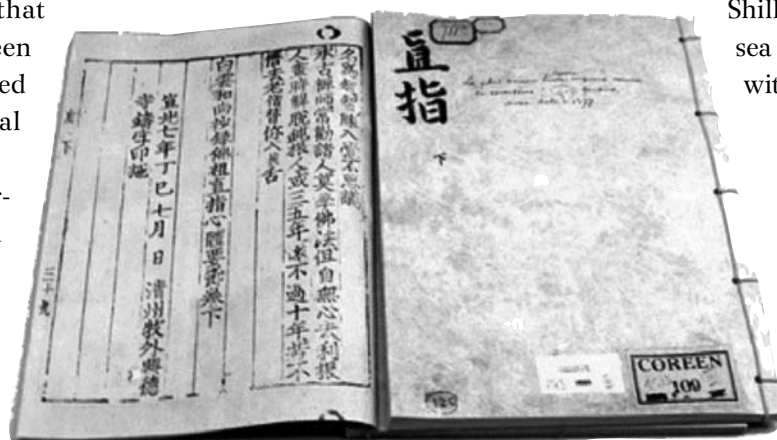
Cultural interaction expanded after the Iron Age during the Three Kingdoms era. The Three Kingdoms of

Koguryo, Paekche, and Shilla adopted Buddhism circa the fourth century. Before that, belief systems were mainly shamanistic. Buddhism seems to have been introduced by Chinese or Indian monks via China. In the era of Unified Shilla, Korean monks such as Haecho went on pilgrimages as far as India and Arabic countries.

It is noteworthy that historical records from the period of the Three Kingdoms and the era of Unified Shilla refer to various glass products and imports from Persia and Southeast Asia. Samguk sagi (The History of the Three Kingdoms) mentions wool carpets and rugs from Persia and luxury goods from Southeast Asia. These commodities seem to have been imported through direct trade because there is some evidence of personal contacts. For example, in the painting of wrestling (Ssireum, or Korean traditional wrestling) on a Koguryo-era tomb mural, one of the wrestlers has an exotic appearance with big eyes and an aquiline nose. The stone statue of a military man standing in front of the Unified Shilla royal tomb called Kwaer-eung also looks foreign. It is likely that the figures were either Central Asian or Arabic.

Cultural interactions predominated with the Chinese, but were also closely linked to the maritime trades of Arabian merchants. In the seventh century, the Islamic region began its contacts with China. According to eighth-century Chinese records, south China was linked to trading routes in Indonesian waters, the Indian Ocean, the Persian Gulf, and the east African coast. The Three Kingdoms and the Unified

Shilla may have used these sea routes when they traded with Arabian merchants.



The Anthology of Great Buddhist Priests' Zen Teachings (Jikji), published in 1377, is the earliest known book to be printed with moveable metal type.

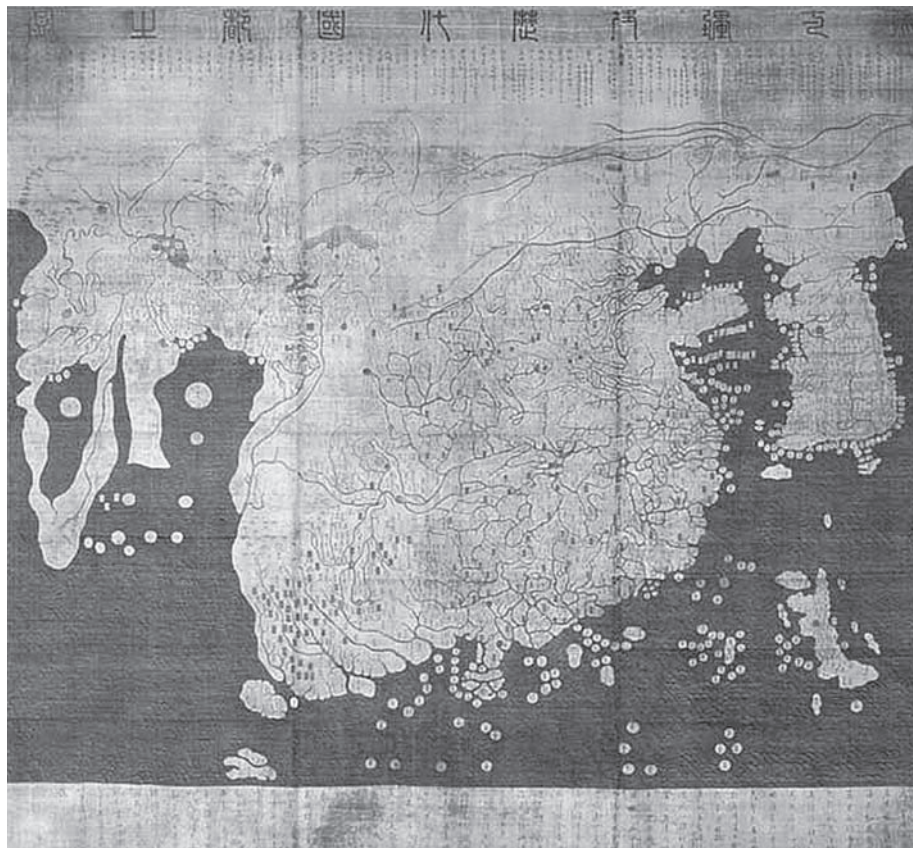


The Silk Roads connecting China and the Western world was another important route for exchange. Koguryo envoys can be seen in the mural that depicts the reception of twelve foreign envoys in the mid-seventh century, discovered at the site of Afrasiab in the outskirts of Samarqand in Uzbekistan in 1965. We can infer that they were Koguryo envoys if we consider their ethnicity, dress, and the international relations of that period. They had reached Samarqand via the northern steppes in order to establish an alliance. The Three Kingdoms formed diplomatic relations not only with China but also with numerous ethnic groups and states in the northwestern steppe regions. By doing so, they were able to sustain their survival and their position as one of the axes of the East Asian order.

The Koryo kingdom (918–1392) engaged actively in international trade networks that reached as far as Arabia, and imported Indian cotton, sugar, ivory,

and dyes from the south. Koryo's historical records refer to Arabian merchants who came to the kingdom; the name "Koryo" was known to the Western world, and the modern name "Korea" is derived from it.

The Koryo fought with the Mongols for forty years. As a result of their eventual defeat in 1270, Koryo experienced Mongol intervention in its domestic affairs for a long time. While Koryo was politically controlled by the Mongols during this period, they could interact with the Islamic world through the Mongols and import information and knowledge, such as the calendar from Islam. The Map of Lands and Regions of Historical Countries and Capitals produced in 1402 in the early Choson era, was based on geographical knowledge from Arabia. The map shows the territories of the world and their capitals, and includes China, the Korean peninsula, Japan, Siberia, Southeast Asia, India, the Arabian Peninsula,



The Kangnido map, a Korean map of the world made in 1402, demonstrates that Korea constantly interacted with other Asian countries and other parts of the world before the modern period.



North Korean and Chinese Communist prisoners assemble at one of the United Nations' prisoner-of-war camps in Pusan, April 1951. Photo by Larry Gahn.

Africa, and Europe. This map demonstrates Koryŏ's rich understanding of world geography.

The Koryŏ kingdom must be mentioned in the history of the print technology of the world. Print technology was developed from the early period in Korea, and the Great Dharani Sutra of Pure and Immaculate Light is the oldest existing book printed from woodblock type. This tradition might have contributed to the development of metal movable type. The Prescribed Ritual Text of the Past and Present was printed in 1234 using metal movable type, but this text no longer exists. The Anthology of Great Buddhist Priests' Zen Teachings (*Jikji*), published in Cheongju in 1377, is the oldest surviving book published using metal movable type. It is stored in the French National Library. The use of metal movable type in Korea occurred seventy-seven years earlier than Gutenberg's use of movable type printing. The Koryŏ kingdom's technology provided a foundation for the development of the Chosŏn dynasty's high quality of metal movable type technology.

Foreign Relations during the Chosŏn Dynasty

Foreign policies of the Chosŏn dynasty (1392–1910) were influenced by the closed-door policy of the Ming dynasty (1368–1644). In addition, Japanese pirates

had been thriving from the late Koryŏ period, and occasional trade with Southeast Asia came to an end because of Japanese piracy. Thus, Koreans interacted with foreign countries (except for China and Japan) only intermittently, and with foreigners, via shipwrecks for example, in sometimes difficult contexts. (The shipwreck of the Dutch *jaght* [yacht] *Sperwer* in 1653, and the forced detainment by the Chosŏn government of Hendrick Hamel and thirty-six other survivors for thirteen years, attracted the attention in the Netherlands and the West when Hamel, after escaping to Japan, published a journal about this experiences in 1668.)

Korea under the Chosŏn dynasty was not completely isolated, however, for it still communicated with the Western world, and acquired Western goods, through China. Catholicism was introduced in the seventeenth century. Korean envoys to Beijing home brought news of the scientific and religious writings of the Italian Jesuit missionary Matteo Ricci, who was then stationed in China. At first, Catholicism was accepted as a form of scholarship, but later, as a religion.

In the nineteenth century, China revealed its weakness to expanding Western imperialist powers in East Asia. The Chosŏn government began to waver in its perception of the West. Some Koreans, aware of Western intentions to invade, supported a maritime defense policy. Others advocated the



U.S. Air Force B-26
(Invader) light bombers
strike over North Korea.

adoption of Western technology for national interests. During this period of confusion, the Choson government signed the Treaty of Kanghwa with Japan in 1876, and concluded treaties with the United States, Britain, Germany, Italy, Russia, France and Austria. As a result, the dynasty started to develop modern international relations. Ultimately it failed to defend itself against the invasion of Japan, which was emerging as the most powerful nation-state in East Asia.

Modernization, Colonial Rule, and a Country Divided

Beginning in 1910, Korea experienced the frustration of modernization and Japanese colonial rule for thirty-six years. Right after its liberation in 1945, the Korean peninsula was divided at the 38th parallel and occupied by the Soviet Union army in the north and the U.S. army in the south. This was a reflection of the confrontation between the United States (the liberal capitalist bloc) and the Soviet Union (the communist bloc). This occupation ultimately resulted in the formal division of Korea: North Korea, officially

the Democratic People's Republic of Korea, with its capital at P'yongyang; and South Korea, officially the Republic of Korea, with its capital.

The Korean War in 1950 was an expression of these conflicts and confrontations. The Korean War took the form of a civil war, but it was essentially an international proxy war. And it was the same during the war and the truce talks. The war ceased not with a peace treaty but with an armistice. The war had a tremendous impact on modern Korean history.

South Korea has accomplished dramatic economic growth since the 1960s, a feat often called the "miracle of Han River." Further, South Korea overcame a hundred years of turmoil since its modern history began, and has successfully established and consolidated a democratic political system.

On the other hand, North Korea is officially a socialist republic, under its de facto leader Kim Jong-il; the country maintains strong ties to the People's Republic of China and its allies in Southeast Asia—Cambodia, Laos, and Vietnam. In August 2009, the government's disclosure of a uranium enrichment program caused great consternation among world leaders. Because of



Barbed wire and guardpost at the DMZ, Panmunjom, South Korea. Photo by Eugenia Kim.

North Korea's command economy, in which the government controls all aspects production and distribution, international trade is highly restricted.

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See also Japanese Empire; Warfare—Japan and Korea

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Kushan Empire

The Kushan era (c. 45–230 CE) was one of the most important and influential periods in the history of ancient Eurasia. During the early centuries of the common era, the Kushans dominated the politics, culture, and economy of a vast region of Inner Eurasia.

Through its active engagement in Central Asian politics, economics, art, and trade along the Silk Roads, the Kushan Empire (c. 45–230 CE) exerted significant cultural influence upon a vast region of Inner Eurasia, including much of present-day Tajikistan, Uzbekistan, and Turkmenistan, the western edge of Xinjiang (in northwestern China), the whole of Afghanistan and Pakistan, and much of northern and central India. The Kushans were one of the key powers of their era during a period in which much of Afro-Eurasia was controlled by just four empires—the Han, the Roman, the Parthian, and the Kushan.

Despite their undoubted importance, evidence for the Kushans remains problematic. They produced no significant body of literature, and only a very few of their fragmentary inscriptions are known. Yet both the Yuezhi—a tribal confederation from whom the Kushans were descended—and the Kushans themselves are frequently mentioned in the literature of a wide range of contiguous societies, including Chinese dynastic annals, Indian, Tibetan, Persian, Manichaean, and Sogdian sacred and secular texts, Islamic histories, and several Greco-Roman sources. It is from this often incidental evidence that much of their history has been constructed.

Only a few examples of Kushan monumental architecture have survived, although seventh-century

Chinese sources attest to their construction of impressive palaces, Buddhist stupas, and dynastic sanctuaries. Archaeologists have uncovered evidence of substantial urban construction during the Kushan era, in both Afghanistan and Pakistan. In addition, the important Kushan-sponsored art workshops in Mathura (northern India) and Gandhara (northwestern Pakistan) and the discovery of international art collections near the royal palaces at Begram (Afghanistan) and Taxila (Pakistan) provide evidence not only of the Kushan monarchs' syncretistic approach to art production but also of the significant levels of trans-Eurasian cultural exchange that occurred during the Kushan era.

The most substantial evidence for the Kushans is numismatic. Kushan coins have been discovered in the thousands throughout the extent of their territory. They provide evidence of early cultural influences on the empire, military and political expansion, the genealogy of royal succession, religious and ideological beliefs, Kushan economic domination of the region, and the eventual dissolution of Kushan political control in the third century CE.

The Yuezhi and “Early Kushans”

The Kushans were descended from a tribal confederation known to the Chinese as the Yuezhi who probably spoke Tocharian, an Indo-European branch language. Han historians describe how the Yuezhi were crushingly defeated near Dunhuang by another tribal confederation, the Xiongnu, in 162 BCE. Forced to migrate away from their homelands in present-day Gansu (north central China), the Yuezhi eventually

relocated in Bactria (ancient Afghanistan) where they defeated the remnants of the Greco-Bactrian kingdom and some time during the first century BCE occupied Bactria in five tribal (*yabghu*) divisions. By 45 CE, Kujula Kadphises, a prince of the Yuezhi Kueizhuang (hence Kushan) tribe, reunited the tribes into a single powerful confederation and established the Kushan Empire.

The migration of the Yuezhi was directly responsible for the opening up of extensive Silk Roads trade and subsequent trans-Eurasian cultural interaction. In 138 BCE the Han emperor Wudi (reigned 140–87 BCE) sent Zhang Qian to follow the Yuezhi in an attempt to form an alliance with them against the Xiongnu. Although Zhang Qian was unsuccessful in eliciting support from the now resettled Yuezhi, the information he brought back to the Han court persuaded Wudi to adopt an expansionist policy that brought Han commercial interests into contact for the first time with the traders of Central Asia, Parthia, and eventually Rome.

The Early Kushans

Beginning with Kujula Kadphises (c. 45–85 CE), the early Kushan kings greatly expanded Kushan territory, conquering the Kabul Valley, Kashmir, Gandhara, and much of northwestern India. Numismatic evidence indicates early Roman influence on the dynasty. By the mid-first century CE the Romans were clearly involved in the silk and luxuries trade with India, Central Asia, and China along both the sea routes from Alexandria and the overland Silk Roads through Parthia and Central Asia. Kujula and his successors in turn exerted some Kushan influence on the Han Empire. The Kushans may have exercised direct political and economic control over Hotan (or Khotan) and Kashi (or Kashgar), two major oases towns along the Silk Roads in the Chinese-controlled Tarim Basin, at various times during the first century. Kujula was followed by his son Vima Takto (reigned c. 85–100) and grandson Vima Kadphises (reigned c. 100–127), who in turn was succeeded by his son

Kanishka the Great (reigned c. 127–153), one of the most important rulers in the history of ancient Central Asia.

The Great Kushans

With the advent of Kanishka and his successors, Kushan history entered its most significant phase—that of the “Great Kushans” (c. 127–c. 228). Kanishka and his successors Vasishka, Huvishka, and Vasudeva, presided over a huge, wealthy, multicultural, and relatively peaceful empire in an era often described as the Golden Age of ancient Central Asia. The Great Kushans continued to issue the standard range of copper and gold coins established by Vima Takto. The remarkable weight consistency is in itself evidence of stability and strong central government. The coins reflect a tolerant and broadminded approach to religion, depicting Zoroastrian deities mostly, but also some Greek and Indian divinities.

Although personally devoted to Zoroastrianism, Kanishka is also recognized as a great patron of Buddhism, and the depictions of Buddha on at least one of his gold and several of his copper coin series are amongst the first physical representations of the Buddha. Kanishka is also venerated for having convened an important synod in Kashmir, at which the decision was apparently made to rewrite the Buddhist scriptures from Brahmi and Kharosthi to the more popular and accessible language of Sanskrit. Buddhist tradition suggests that the translations facilitated a great surge in the popularity of Mahayana (“Great Vehicle”) Buddhism, which was then carried across central and eastern Asia by pilgrims using the Silk Roads.

The Great Kushan kings were also patrons of the important art schools established in Gandhara and Mathura. The output of these workshops reflected a cultural synthesis almost unique in art history. The physical representation of the Buddha and bodhisattvas that resulted—a synthesis of Bactrian, Iranian, Indian, and Hellenistic cultural influences—then spread along the trade routes, penetrating India as



far south as Sri Lanka, and traveling through China into Korea, Japan, and Southeast Asia.

The Later Kushans

Following the death of Vasudeva around 228, Kushan history entered a period of decline. The Sasanian ruler Ardashir led his forces from the Plateau of Iran into Kushan territory soon after 226, and the northwestern areas of the former Kushan Empire were incorporated into the Sasanian state of Kushanshar. Sasanian kings emphasized their connection to the Kushans by using Bactrian script to proclaim themselves as *Kushan Shah*, or “King of the Kushans.” Groups of Kushans remained restive until well into the fourth century, however. As late as 367 the Sasanian king Shapur II (309–379) was forced to fight a damaging battle with the Kushans of Balkh in 367 or 368.

In India the rise of powerful monarchical states further undermined Kushan power, although Kushan cultural influence remained pervasive. Even the extensive gold coinage of the Guptas was clearly modeled on the Kushan dinar. An inscription from Allahabad dated around 335, which lists foreign kings who paid tribute to the Guptas, uses Kushan titles to describe the Guptan rulers—“Descendant of the Son of Heaven” and “King of Kings.”

While the disintegration of the Kushan Empire occurred quite quickly, and might have brought to an end the Golden Age of ancient Central Asia, the cultural, political and economic achievements of the Kushans continued to influence their regional successors to perhaps as late as the Islamic conquests (completed early in the eighth century CE). The evidence for the Kushans may be sparse, but is clearly sufficient to demonstrate the significance and cultural legacy of an extraordinary civilization that dominated Central Asia for several centuries and that influenced

the world around it more than any other civilization before the rise of Islam.

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See also Afro-Eurasia; Silk Roads

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Labor Systems, Coercive

Coercive labor is work a person does for another person (or for the state) under compulsion, receiving little or no recompense. The most common forms of coercive labor are slavery, corvée labor, serfdom, and debt peonage. Historically, agricultural societies have tended to rely more on coercive labor than pastoralist and industrial societies.

Coercive labor systems have existed throughout the world and throughout human history, though certain regions of the world and certain periods have been more strongly characterized by them than others. In general terms, agricultural societies brought about the greatest amount of coercion, while pastoralist and industrial societies have usually had minimal coercive labor. The term *coercive labor* is here defined as obligatory work a person does under compulsion for another person of higher status or for the state, receiving little or nothing for the services rendered.

Coercive labor shows up mainly in agricultural societies because that type of society is stable, people do not move around a lot, human labor is essential for the vast majority of tasks, and methods of dominating other human beings are relatively sophisticated. Different levels of coercion have existed, varying over time and place. The most common types of coercive labor are slavery, corvée labor, serfdom, and debt peonage. In the first, human beings are owned and thus made to work with relatively little restriction on the owner. Corvée labor is a system whereby the state forces its people to work for it, though the people are in theory free. Serfs work on the estates of aristocrats, who take a portion of

the serf's harvest and who restrict the serf's ability to move. In debt peonage, an individual is made to work for a landlord because he or she owes the person money, money that usually can never be paid off completely. Corvée labor and slavery are the most ancient types of coercive labor systems and were instituted at the beginning of agricultural societies, about 8,000 years ago. During the earlier hunting-and-gathering phase of human existence and in pastoralist societies, although there were slaves, they were very few because it was difficult to keep them under control.

Corvée and Slavery in the Ancient World

The earliest world civilizations featured both slavery and corvée labor, though in different mixes. Chinese and Egyptian civilizations relied heavily on corvée labor, which from approximately 2700 BCE built the great pyramids and from the Qin dynasty (221–206 BCE) began the Great Wall of China. The Egyptian and Chinese states required peasants who otherwise worked on the land to leave their plots and work on these construction projects. They were usually paid something (often food and lodging), but did not have a choice in whether to work or not. Corvée labor generally was for these large projects, in which the state needed large numbers of people for a limited amount of time and for which most of the work was manual labor that required strong arms and backs rather than skilled labor. Slavery existed only on a small scale in these societies.

Other ancient civilizations featured slavery, such as those in the Mesopotamian region, Persia, and,



Harriet Beecher Stowe's *Uncle Tom's Cabin* helped make slavery a public issue in the United States and Europe. Here a mother implores her son to keep close, lest they be separated at the slave auction.

later, Greece and Rome. Most slaves were gained through warfare, though in all of these societies parents could sell off children or themselves become slaves because of poverty or debt. The vast majority of slaves in these societies were used in agricultural production, working in the olive groves or the wheat fields, though urban slaves were also common. Generally, urban slaves were better off than rural ones, for they lived in the houses of their masters and ate there as well. Some urban slaves were quite well educated, and some elites of Greece and Rome even had slaves as their children's tutors. The possession of urban slaves was a status symbol for many elites.

Slavery in the Muslim World

Slavery remained an important labor system even after the fall of the Roman Empire in the most dynamic portion of the former empire, the lands under Muslim

rule. Slaves came from the margins of Arab civilization, mainly from the Caucasus region and from sub-Saharan Africa. In Islam, slaves who converted to the faith were to be freed, but that rule was mostly ignored after the early years. A free peasantry also existed in the Islamic world, just as in earlier times, but slaves were very important in the urban economy, where people were wealthy enough to own other human beings. Rural slavery also existed, with regional differences. Urban slavery was economically more important than rural slavery in the Arab world.

Muslim societies also used slave soldiers for fighting and maintaining internal control. These slaves were usually from the margins of the Islamic world and, once they had been trained, were especially useful to dynasties that needed soldiers who had no local roots and were absolutely loyal to the ruler. They often led relatively privileged lives, a primary example being the Mamluks, who for a few centuries (1250–1517) ruled the prosperous province of Egypt. The Mamluks were prized because they were trained as superb fighters and owed absolute obedience to their Ottoman masters. By the fifteenth century, however, their loyalties lay more with themselves than the Ottoman Empire. The Ottomans were the most successful in utilizing slaves as soldiers after they established their empire with Anatolia at its core in the fourteenth century. Many of these slaves were Christian boys taken from Ottoman possessions in eastern Europe and trained in the arts of war. They were called Janissaries and were considered some of the best troops of the era.

Serfdom in Japan and Europe

In other regions, another labor system, serfdom, emerged that was partially coercive. Serfdom, associated with feudalism, was common in both western Europe and in Japan in the first millennium of the common era. The reasons for the emergence of serfdom were the same in both regions: extreme political instability in a vacuum of power, in which peasants gave up their lands and their freedom in return for protection from warrior-aristocrats. The serfs' produce provided subsistence to their families and also supported the lords who owned the lands. This

If there is no struggle, there is no progress. Those who profess to favor freedom, and deprecate agitation, are men who want crops without plowing up the ground, they want rain without thunder and lightning. • **Frederick Douglass (1817–1895)**

system declined in western Europe in the 1400s with the advent of urbanization and as the serfs gained the ability to escape or pay the lords for their lands. In Japan, serfdom did not disappear until the nineteenth century. Eastern Europe and Russia experienced a rise in serfdom in the seventeenth century as aristocrats used a strong state to force previously free peasants to become serfs and produce wheat and other grains for sale.

Spread of Forced Labor in the New World

The expansion of Western Europe into the rest of the world beginning with the “discovery” and invasion of the Americas radically changed labor systems in many parts of the world, especially those surrounding the Atlantic Ocean. Coerced labor increased as a result of this expansion. Spanish colonial authorities transformed *corvée* labor systems inherited from New World Indian civilizations into obligatory labor systems that were in all likelihood more onerous than those that existed before the conquest. At first, the conquistadors introduced the *encomienda*, a labor draft required of all conquered Indians. But the Spanish Crown did not want a revival of serfdom (and thus an economic basis for feudalism) on the other side of the Atlantic, so it wrested control of indigenous labor from the first conquerors. In the 1580s Francisco Toledo (1515–1582), the viceroy of the Spanish possessions in South America, revamped the *corvée* labor system completely to provide Indians to work in the silver mines of Potosí, in the high Andes of Bolivia. Indian villagers were supposed to send one-seventh of their able-bodied men to the mines, but the low pay and horrific conditions in the hot and dangerous mine shafts on a mountain more than 4,500 meters above sea level made many Indians flee their villages to avoid being sent. Although silver production went up considerably, the system broke down over the centuries and was abolished with independence in the early nineteenth century.

African slavery, while it had existed for millennia, intensified, especially along coastal regions. The first African slaves came to the Americas with the explorers

and conquistadors. By the seventeenth century Portuguese slave traders, joined by other Europeans, purchased slaves from the interior at trading stations in West Africa and Angola and sent them by way of the “middle passage” across the Atlantic Ocean to the sugar plantations of the Caribbean and northeastern Brazil. To a lesser extent, North American tobacco and, in the late eighteenth and nineteenth centuries, cotton plantations also promoted an export economy based on African slavery.

Approximately 10–12 million Africans were brought to the Americas as slaves. About 40 percent of these ended up in Brazil; roughly another 40 percent were evenly divided between British America and the Spanish colonies. The rest were distributed across the French, Dutch, and Danish colonies. It is estimated that as many 8 million Africans destined for slavery in the Americas died in transit before reaching the New World.

Conditions on plantations, where the vast majority of slaves ended up, were miserable, and most people died within a few years of having set foot in the Americas. Urban slaves, as always, had it somewhat easier. The economically most dynamic areas, such as Brazil and the Caribbean, had the highest mortality, whereas more economically backward areas, such as the region that would become the United States, actually had a population of African heritage that grew rather than diminished without constant imports of human chattel. The eighteenth and early nineteenth centuries saw the height of slavery in the Americas, with the Caribbean islands, Brazil, and the United States being the most important slave regions.

Abolition of Slavery in the Nineteenth Century

By the early nineteenth century slavery was on the wane in the Americas. Antislavery sentiment began to gain ground; by 1807 Great Britain prohibited the slave trade between Africa and its dominions, and the United States followed suit in 1808. The British abolished slavery in their dominions in 1833 and began to fight the slave trade in the rest of the world. Most Spanish American countries abolished

A free race cannot be born of slave mothers. • Margaret Sanger (1879–1966)

slavery by the 1850s. The issue of slavery was most divisive in the United States. The political conflict between the slaveholding South and the industrial North came to a head in 1861 with the U.S. Civil War. President Abraham Lincoln's Emancipation Proclamation of 1862 and the Union victory in 1865 eliminated slavery from North America. In the rest of the hemisphere, although slavery played as large a role as in the United States, abolition was not a bloody affair. Cuba abolished slavery in 1886. Brazil ended the slave trade in 1850 and emancipated all slaves in 1888.

Industrialization, which began to accelerate in the nineteenth century, generally did not favor slave labor. Slaves would see it in their best interest to wreck delicate machinery so that they did not have to work; for this reason it was easier and cheaper to hire free labor that depended on wages to make a living. Also, slaves were not, by and large, economic consumers, and the industrial system needed consumers who earned wages and thus had money to spend on the goods produced by industry.

The end of slavery did not mean that coercive labor disappeared. Other forms, such as debt peonage, took the place of slavery. Debt peonage existed in many regions of the world, especially in the nineteenth and twentieth centuries. Debt peons were to be found laboring on the coffee plantations in Africa and Indonesia, harvesting tea leaves in India, and extracting rubber in the Brazilian Amazon. Debt peonage began to retreat only in the mid-twentieth century, as modern states asserted control and prohibited the exploitation of the rural labor force.

Modern State-Run, Forced-Labor Systems

State-run *corvée* labor reappeared in the twentieth century. The concentration camps established by the Nazis in the 1930s come to mind. Perhaps the largest numbers of people involved in nonvoluntary labor in the past century were those put to work in Communist states such as the Soviet Union and the People's Republic of China. The Stalinist industrialization policies in the 1930s and the Great Leap Forward,

an attempt at universal small-scale industrialization in China in the 1950s and 1960s, led to great misery and the deaths of tens of millions of people. In addition, Communist countries maintained large prison systems and put prisoners to work in harsh environments without much regard for their survival.

During World War II, the Japanese Army forced Korean, Chinese, and Filipino women and some Japanese prostitutes to serve as sexual slaves, euphemistically called "comfort women," for Japanese soldiers. This was a type of state-run coerced labor that also existed in several armies in the former Yugoslavia and in some states in Africa during the civil wars that plagued these regions in the late twentieth century.

World Systems and Forced Labor

Why and how do coercive labor systems exist? The world economy model outlined by the sociologist Immanuel Wallerstein offers one answer. In this model, Wallerstein suggests that coercive labor systems, at least since the 1500s, are the result of a world capitalist system imposed by western European economic expansion. In particular, regions dominated politically or economically by European powers, such as the Western Hemisphere and Africa, evolved coercive labor systems. These "peripheral" regions (so called because they are peripheral to the dominating powers) exported primarily raw materials such as silver, sugar, and cotton. Given that they only exported cheap raw materials but needed to pay for expensive European-made manufactured goods, the elites in the peripheries had to exploit native labor or import slaves to lower the production costs of the goods they exported. Otherwise, the elites in the peripheries would be unable to sustain their lifestyles. This model, according to Wallerstein, worked until the twentieth century, when coercive labor practices became milder but did not vanish.

Coerced Labor Today

Coerced labor continues to exist today, though it appears that mainly women and children, rather than

grown men, are targeted. Children in the Middle East and South Asia are forced to work in sweatshops making items such as Oriental rugs. Criminal gangs lure young women from the former Soviet Union and Eastern Europe to the West with promises of good jobs, and then force them to work as prostitutes when they cannot pay back their travel expenses.

Another type of forced labor that is common, especially in areas where there are civil conflicts, is the use of child soldiers. Children as young as ten (though most are between the ages of 15 and 18) have been forced into militias in places such as Sierra Leone and Colombia. They also serve as lookouts and porters. About a third of the child soldiers are girls, who are frequently raped and given as “wives” to adult soldiers. Thus, coerced labor is still with us, although human rights agencies and many governments are trying to eliminate this exploitation.

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See also Colonialism; Imperialism; Labor Union Movements; Slave Trades

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Labor Union Movements

Labor (or trade) unions, formed by workers who join forces to oppose exploitation on the job—whether in factories or fields—use the power of collective bargaining to achieve certain employment and working rights and entitlements that relate to fair pay, safe working conditions, and general worker welfare.

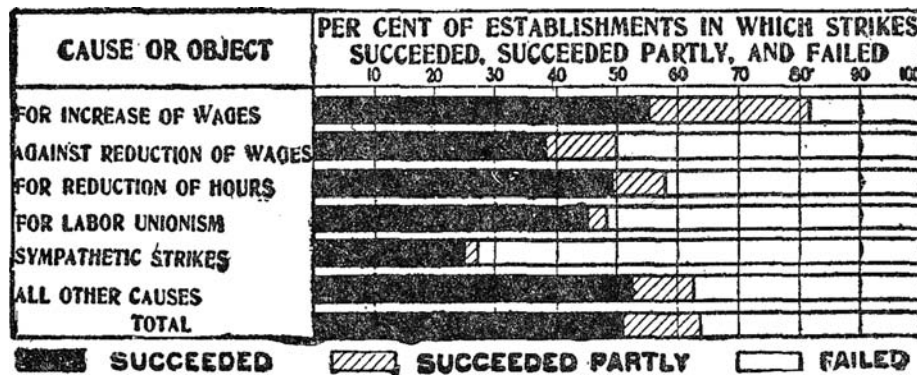
The first labor unions were formed by working men and women in the mills, workshops, and small factories of late-eighteenth-century England to protect themselves against low wages, long hours, and poor working conditions. In part, growing out of Europe's medieval craft guilds, which provided social and material benefits for their members, early unions of weavers, bricklayers, and cordwainers (shoemakers) established models and methods of labor organization that were adopted and further refined as industrialization spurred a dramatic increase in wage-earning labor in the nineteenth century. Over the next century, labor unions in Europe and the United States would expand beyond manufacturing to include miners and agrarian workers throughout those and other areas of the world. Today, tens of millions of men and women—albeit still a minority of all workers internationally—are organized into labor unions.

At least in part, the development of labor unions was linked and in response to the growth of industrial society and the rise of capitalism as an economic system. Beginning in the late 1400s, a centuries-long demographic shift from the countryside to cities took place that saw tens of millions of peasants and subsistence farmers in Eurasia, Africa, and the Americas forced off their land to become indentured servants, tenant farmers, or agrarian workers. Meanwhile,

millions of men, women, and children—increasingly from western and central Africa—were enslaved. As commerce expanded and the number and size of existing cities grew, so did the number of men, women, and children brought into the paid workforce.

Simultaneously, movements for political and economic reform in the nineteenth century would help abolish slavery in the Atlantic world and then later in the Indian Ocean world. As with slavery, serfdom and other forms of quasi-forced and forced labor were made illegal throughout most of the world by the twentieth century. With agriculture becoming increasingly mechanized in the early twentieth century, the ranks of urban labor swelled. Unable to compete against large-scale agricultural production, growing numbers of small land-owning rural workers joined those whose lands had been stripped from them by force or insurmountable debt and migrated to cities seeking work.

Under the employ of shop owners who sought to maximize their profits by depressing wages, urban workers—both skilled and unskilled—helped grow both international production and the global market by transforming raw materials such as cotton, sugarcane, copper, and lumber that had been harvested, mined, or felled by rural workers and slaves into consumer goods, construction materials, and finished luxury items. Workers banded together, calling for higher wages and better working conditions; eventually they demanded insurance against illness, accidents, and work-related disabilities—benefits offered by mutual aid societies often tied to religious bodies or fraternal organizations. Labor unions would therefore contain elements of both early craft guilds and mutual aid societies.



This chart shows the causes of strikes and their rates of success in the United States during the closing decades of the nineteenth century.

Differing substantially in their ideologies, tactics, and degrees of influence, labor unions have assumed a variety of forms over the past two centuries. Some have called for a reorganization of society based on cooperative work, while others have sought only the material improvement of their members. While the demands of labor unions have changed over time, depending on local circumstances, their basic purpose remains the same: protecting the interests of their members by means of collective bargaining. In time, unions would also engage in political action and in some cases, militant action. Along with the right to organize, today's unions largely seek contractual agreements with employers that guarantee workers specific wages, safe working conditions, and the right to arbitration, health care, and retirement benefits. On the whole, union members in most industrialized countries enjoy more rights, higher wages, and better working conditions than their counterparts in the less industrialized parts of the world, whose governments have yet to either enact into law or enforce standards that relatively more privileged workers have come to take for granted.

Irrespective of location, the bargaining power of labor unions ultimately rests on their members' ability to collectively withhold their work and to exercise their organization's financial, legal, and electoral voting strength. Since the late eighteenth century, workers have exerted their power by carrying out, or threatening to carry out, strikes, boycotts of goods, hold demonstrations, picket lines, petition governments, file class-action law suits, mobilize voters, fund political parties or electoral campaigns, and, in some cases, engage in armed struggle. Labor unions have also served as sources for community support and development, providing public forums as well as

private spaces for social gatherings, educating their members, disseminating news, and training new leadership.

The appeal of union membership for workers, whether guided by self-interest or a sense of responsibility to their fellow workers and society at large, has been countered by employers threatening to fire or punish employees who join a union, or using physical violence or legal measures—backed by state force—to keep unions from growing in strength. During the nineteenth and early twentieth centuries, courts in the United States frequently issued injunctions to halt strikes. In Peru, private industries have hired armed guards to attack striking workers—a practice seen in many parts of the world. At certain periods in South Africa, as elsewhere, labor leaders have been imprisoned for mobilizing workers.

Europe

Europe's labor unions have gained a number of lasting concessions since the nineteenth century, making the continent's workforce among the most privileged in the world today. Still, every gain made by these workers—from the right to organize, to paid maternity leave—came as the result of protracted labor struggle. During the second half of the nineteenth century, and only after engaging in decades of boycotts, strikes, work slowdowns, and physical violence, European labor unions secured minimal legal protections. In France, the bourgeoisie-dominated revolutionary government of the late eighteenth century enacted the Le Chapelier law to make workers' coalitions illegal, while Britain's parliament reinforced existing laws against organized workers through the Combination Acts of 1799 and 1800. Nevertheless, by the



1820s recognizable European labor movements had emerged, accompanying the growing importance of coal production (over steam) and the concentration of large urban populations.

In 1868, Napoleon III, who had used the military to quell striking workers, finally assented to the formation of labor associations. Fourteen years later, France's Third Republic fully legalized unions. In turn, Britain's Parliament legalized labor unions in 1871; four years later they granted British workers the right to picket. Workers in Germany were extended the right to organize unions with relatively less struggle than their British and French counterparts, but not until the 1890s. Over the course of the nineteenth century, tens of thousands of workers were killed or seriously injured, whether on the job, because of hazardous working conditions, or in the course of labor agitation. Thousands more were beaten or imprisoned for union organizing and making demands by stopping or temporarily interrupting production.

The politicization of labor unions in the mid-nineteenth century produced incendiary results—most notably, the revolutions of 1848. Such ferment, whether in the factories or fields of Europe, served as the backdrop for later reforms that attempted to appease workers, even as governments and private enterprise shored up their forces to repress dissent. Despite legal and illegal measures to thwart European labor movements, union-led revolts continued.

One of the most dramatic instances of organized European workers asserting their political power took place in 1871, when French workers, together with anarchists, socialists, and communists, temporarily formed their own revolutionary government, the Paris Commune. In the spring of that year, workers seized control of the capital and quickly enacted a series of laws establishing debt relief and shorter working days. While the Communards, as they were called, were defeated within two months by loyalist French and Prussian military forces, their brief takeover served as a reminder of the power of organized labor. As increasing numbers of adult male workers gained the franchise in the latter half of the nineteenth century, organized labor across Europe began to exercise

greater influence in determining which candidates and parties best served their interests.

By the end of the nineteenth century, efforts to organize unions extended to the unskilled labor force. Industrial labor unions comprising workers across entire industries regardless of skill (as opposed to trade unions that had been restricted to skilled workers) were formed. As expected, industrial unions, like trade unions, were met with bitter opposition from employers and the state. In the decade preceding World War I, Europe saw a rash of strikes as labor unions fought to keep wages in line with rising inflation; strikes could last for months, entailing extraordinary hardship for working-class communities.

Despite the many obstacles, labor unions in Europe continued to grow. By 1910, approximately three million workers were organized in Britain; two million in Germany; and one million in France. Still, the vast majority of workers in Europe remained unorganized. As the century wore on, industrialization steadily supplanted other forms of production and the labor force came to be dominated by industrial workers; as citizens and soldiers, many also bore the brunt of World Wars I and II. The first of these wars witnessed the birth of Soviet Communism, and with it a "workers' state" (deformed under Joseph Stalin). The second saw the defeat of European and Japanese fascism.

With the Bolshevik Revolution of 1917 and the subsequent formation of the Union of Soviet Socialist Republics, Russia's trade unions were incorporated into the structure of government. Meanwhile, socialist countries in Europe, including those in Scandinavia, had been transformed into constitutional monarchies that instituted sweeping social and economic reforms. As the Soviet Union extended its sphere of influence in Eastern Europe, trade unionism came to dominate the region.

During the 1930s, and at the other end of the political spectrum, the fascist government of Italy attempted to contain its labor movements by sponsoring its own trade unions. In 1933, Germany's fascist regime destroyed what had been Europe's best organized trade union movement, and then attempted

Women need not always keep their mouths shut and their wombs open. • **Emma Goldman (1869–1940)**

to bring its entire labor force under the control of the Nazi party. But following the defeat of fascism in World War II, and their “corporate” attempts to control labor, those countries’ union movements were revived.

By the second half of the twentieth century, many of the demands made by industrial and trade unions in Europe had been translated into government policy, benefiting the broader population—beyond organized workers. The adoption of universal health care programs was among the most important of government reforms enacted under pressure from labor unions in Europe.

United States

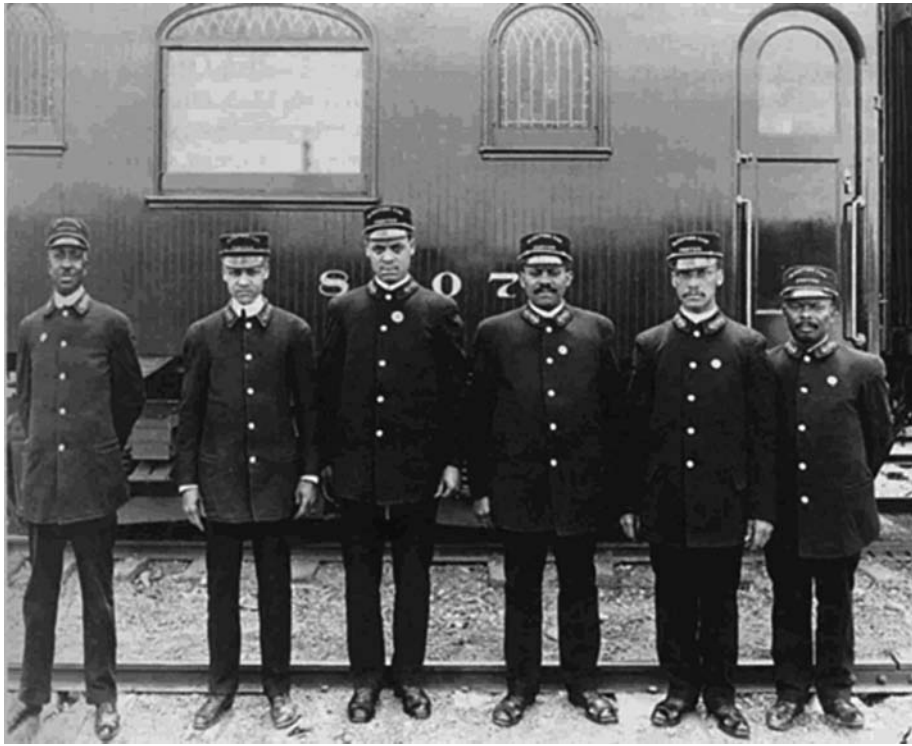
Organized labor in the United States succeeded in gaining a number of critical concessions: a minimum wage, reduced working hours, child labor laws, disability insurance, and retirement benefits. But the incalculable social, political, and economic impact of slavery in the United States (which produced material surpluses for the accelerated growth of capitalism internationally), combined with large-scale European immigration in the late nineteenth and early twentieth centuries, led to multiple fractures within the skilled and unskilled labor force. Workers were divided, and often pitted against one another, on the basis of race, ethnicity, and gender.

The first labor unions in the United States appeared in the early nineteenth century, growing directly out of the established guilds—blacksmiths, carpenters, cabinetmakers, and cobblers. By the 1820s, various trade unions were calling for the reduction of the work day from twelve to ten hours. As the use of steam engines along the Atlantic seaboard and internal waterways gave rise to new factory systems, paralleling the development of factories in England, labor unions in the United States sought to join together in citywide federations. In 1866 these federations formed the nationwide National Labor Union (NLU), which succeeded in persuading Congress to pass an eight-hour workday for federal workers. But by the early 1870s the NLU had unraveled.

Labor agitation resurfaced with unprecedented force later in the decade. In 1877, a national railroad strike paralyzed the nation’s transportation system when workers in Martinsburg, West Virginia began a strike that quickly spread to St. Louis and Chicago, to Baltimore and New York, eventually reaching Pittsburgh, where discontent over reduced wages had originated. In several places workers resorted to violence, destroying railway lines to protest low wages and ill treatment. The national strike, known as “The Great Railroad Strike of 1877,” attracted widespread public sympathy and was only suppressed through the force of state militias.

Over the following decade, the Knights of Labor, a union formed by Philadelphia garment cutters in 1869, became labor’s preeminent organization. Expanding nationally under the leadership of Terrence V. Powderly, the Knights organized skilled and unskilled workers, men and women, blacks and whites. By 1886, the organization boasted a diverse membership of 750,000, which included urban and rural workers, although the southern branch had increasingly become all-black as southern white laborers refused to participate in interracial locals. The all-black membership soon joined the ranks of other African American workers in the Cooperative Workers of America and the Colored Farmers Alliance, whose combined membership grew to over one million strong, forming the largest movement of black agrarian workers and sharecroppers in U.S. history. In the coming years many within the organized rural black labor movement—Black Populism—joined white farmers and laborers to establish the People’s Party, which advocated on behalf of labor and agrarian interests.

In the 1880s, as the Knights of Labor became a national force demanding an eight-hour workday, both its leaders and the rank and file were targeted for retribution. On 4 May 1886, the Knights held a mass rally to protest police brutality: the day before, striking employees at the McCormick Harvester Company had been severely beaten; one was killed during a clash with the police. Following the mass rally, eight anarchists were accused of throwing a bomb that killed seven policemen, while the police were accused of



The Brotherhood of Sleeping Car Porters was the first recognized black labor union.

indiscriminately shooting into the crowd, beating up dozens of workers, and killing four in the process. The incident became known as the Haymarket Massacre, for which the Knights were unjustly blamed. A precipitous decline in the union's northern, and mostly white membership followed soon thereafter.

The year 1886 also saw the formation of the American Federation of Labor (AFL), led by Samuel Gompers, a cigar roller. The AFL would soon assume the preeminent position that had been occupied by the Knights of Labor. Unlike the Knights, however, which organized across industries, the AFL concentrated on organizing craft unions of highly skilled workers. Opposed to any alliances with radical political parties, Gompers emphasized economic rather than broad ideological goals. Under his stewardship, the AFL ushered in the modern era of organized labor, maintaining emergency funds to help members during strikes, and employing paid organizers to sign up members in nonunion shops. But the exclusive posture of the AFL precipitated a serious rift within the U.S. labor movement, its ranks swelling with immigrant and mostly unskilled workers. In the long run, the organization's decision to focus on the economic interests of the nation's most skilled workers—a decision fueled by racism and growing anti-immigrant

sentiment—debilitated the potential for a unified labor union movement.

Other labor unions competed with the AFL for membership. In 1894 the American Railroad Union under the leadership of Eugene V. Debs, a leading socialist, organized a strike at the Pullman manufacturing plant near Chicago and called for a boycott by the men who handled the company's sleeping cars for the nation's railroads. Within a week, over 125,000 railroad workers across the nation went on a sympathy strike. At the request of the Illinois governor, the U.S. president Grover Cleveland intervened, moving in federal troops to break the strike. Under the threat of military intervention and a broad injunction, the sympathy strike was ended. The Pullman strikers were defeated, many of whom were blacklisted for their involvement.

The opening of the new century witnessed a flurry of strikes. In 1902, coal miners in northeastern Pennsylvania called for a strike. Under the leadership of John L. Lewis, their union, the United Mine Workers (UMW), mobilized some 100,000 coal miners who shut down the coal mines in which they worked. When the owners of the mines turned down a UMW proposal for arbitration, President Theodore Roosevelt, like his predecessor, intervened. This time



the president appointed a commission for mediation and arbitration. Five months later, the commission awarded the workers a 10 percent increase in wages and a shortened workday. But it denied the union's demand for formal recognition, which was a precondition for arbitration; in its absence, workers faced loss of wages, and maybe even starvation.

It sometimes took an industrial catastrophe to spur the enactment of workplace safety regulations. In 1908, twenty thousand women garment workers in New York and Philadelphia walked off their jobs to protest harsh working conditions. But it was only after 146 young female workers died when a fire broke out at the Triangle Shirtwaist Company on New York's Lower East Side in 1911 that the government finally acted to remedy hazardous working conditions in New York factories. Many of the women at the Triangle Shirtwaist Company had plunged to their deaths, forced to jump out of windows when the fire broke out because the owners had insisted on keeping the doors of the building locked from the outside to prevent "loss of goods." An outraged public helped pave the way for the enactment of industrial safety reforms, beginning with the targeting of sweatshop conditions in the garment industry.

Favorable public sentiment played an important role in the growth of labor unions. In 1912, the Industrial Workers of the World, a militant multiracial union, led a strike of fifty thousand workers in the textile mills of Lawrence, Massachusetts. When striking women and their children were attacked by police, a large public protest ensued; the textile workers' pay was eventually restored and then increased. An important victory for the broader U.S. labor movement was won two years after the Lawrence strike when Congress passed the Clayton Act, which legalized strikes, boycotts, and peaceful picketing. Referred to as the "Magna Carta" for labor, the Clayton Act also limited the use of injunctions to halt strike actions. But another generation would pass before unions were fully recognized.

During the Great Depression, when labor agitation reached new heights, the federal government finally conceded the right of unions to legal recognition.

Such labor agitation included pressure by the International Ladies Garment Workers Union, whose membership was predominantly Jewish and Italian immigrants. Pressure also came from A. Philip Randolph's black-led Brotherhood of Sleeping Car Porters. Beyond government recognition, other important demands gained during the 1930s by labor unions were the long-fought-for minimum wage, the reduction of working hours, child labor laws, and welfare programs. The rising tide of labor union agitation in that decade culminated in the formation of the Congress of Industrial Organizations (CIO), which brought millions of unskilled workers from the rubber, steel, and other basic industries under a single umbrella.

In 1935, Congress passed the Social Security Act and the Wagner Labor Relations Act, which created the National Labor Relations Board. While labor unions thereby gained increased power, the federal government's concessions set the stage for the co-optation of the movement and its leadership under President Franklin D. Roosevelt's New Deal.

The advent of World War II saw an increase in union organizing, which was accompanied by a deepening alliance of organized labor and the Democratic Party. The abandonment of the U.S. labor movement's political independence (through the support of pro-labor third parties in the electoral arena), ostensibly to unify the country in the face of fascist forces overseas, left the movement vulnerable to attacks once the war was over. Upon the conclusion of the war a purge of left-wing union leaders took place, led by Senator Joseph McCarthy. The era saw the enactment of the Taft-Hartley Act, which made "closed shops" (where only union members were permitted to work) illegal and outlawed the secondary boycott (whereby union members draw the sympathy of others to boycott the goods of a given company). The legislation also allowed the states to pass right-to-work laws, thereby placing further obstacles in the way of union organizing.

With radical leadership effectively barred from union movement, the AFL and CIO merged in 1955. One consequence was a threefold increase in weekly earnings for workers in manufacturing by 1970; less

The most heroic word in all languages is revolution. • **Eugene Debs (1855–1926)**

positive, however, was the severing of the low-wage secondary labor market from organized labor. Union organizing has never extended beyond one-third of the U.S. labor force; as a result the most highly skilled workers have come to benefit from the advantages of organized labor, while the distance between them and other workers continues to grow.

Latin America, Africa, Asia

Like their counterparts in the most industrialized regions of the world—Australasia, Europe, the United States, Canada, and Japan—skilled urban workers in Latin America, Africa, and certain areas of Asia have made significant gains over rural and unskilled workers. The most important of the union labor movements on these continents were affiliated with communist or socialist-led political forces, most notably the People's Republic of China, founded in 1949.

The Chinese Communist revolution, like its predecessor in the Soviet Union, attempted to place agrarian production under state control and to bring about large-scale industrialization over a much shorter period of time than the Western capitalist countries had experienced. Social, political, and economic advancements notwithstanding, for significant segments of China's population, the accelerated pace of industrialization produced significant social disruption, uneven development, and a reworking of power relations that left hundreds of millions of peasants, previously under the authority of overlords, now subservient to local party officials who were inclined to practice the same kinds of oppressive behavior exhibited by the landed gentry they replaced.

In Latin America, working-class political parties worked closely with the unions to support their labor movements. In the first decade of the twentieth century Argentina's anarchists assumed leadership in union organizations, promoting anti-government policies that provoked the government to become increasingly repressive of organized labor. Labor leaders were deported and waves of general strikes were met with state-sanctioned violence. To undercut radicalism and build support for their regimes among the growing indigenous and mestizo work force, governments

throughout Latin America enacted legislation to provide at least a minimum level of social welfare for its citizens. This approach was carried out first in Uruguay at the turn of the twentieth century, followed by Mexico in the 1920s, and Brazil in the 1930s. Many labor unions in Latin America went underground while working to support pro-labor political parties and their candidates—as was the case in Bolivia with the Movimiento Nacionalista Revolucionario, a party closely tied to the miner's federation. Today, a minority of workers in Latin America, concentrated in its major cities, are organized into labor unions.

The economies of many African nations continue to rely on subsistence farming, with relatively little industrialization. A continent rich in minerals, the mining industry is among Africa's principal sources of industrial labor; it is also the industry with the most viable unions. Following independence from European colonialism, many industries on the continent were placed under state control. But many industries also remained under de facto European corporate control or majority ownership. In 1973, however, a wave of strikes in Durban, South Africa, marked a new militancy among African labor unions not seen since the formation of the anarchist-led Industrial Workers of Africa, the first union of black workers in South Africa. The union influenced the African National Congress in a more radical direction, which led, ultimately, to the overthrow of the apartheid regime in 1994. Over the course of the second half of the twentieth century, legislation was passed in South Africa to regularize industrial action, giving new legitimacy to union organizing. Despite such legislation, and coupled with the end of apartheid, like workers in the more industrialized regions of the world, most of South Africa's labor force remains unorganized.

As in the case of South Africa, a militant workers' movement in Egypt helped to undermine British colonial presence as well as Egypt's monarchy. Between 1947 and 1953, a rapid growth in the textile, tobacco, and sugar industries saw the doubling of Egyptian union membership. The International Confederation of Arab Trade Unions, founded in 1956, would, in turn, shape the Egyptian government's commitment to organized labor in the Arabic-speaking region

while integrating the nation's active trade unions into the state system.

Outlook

A history of labor union movements suggests certain common threads as much as it illuminates the diversity of organized labor around the world. While most workers have not been organized into labor unions (in the U.S. only about 15 percent of workers are currently organized; down from 30 percent during the 1950s), and while there is now a greater disparity in wealth within nations around the world than had existed at the beginning of the nineteenth century, certain segments of the international labor force have won legal rights that offer them some protection against the exploitative tendencies and practices of industrial capitalism.

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See also Industrial Revolution; Labor Systems, Coercive

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Language

As humans evolved so did our ability to speak, but how and when language began remains a mystery. Linguists who study the nature of language see patterns in related language families—some expanded while others died out. Although languages were never fixed, several universal aspects of their use allowed our ancestors to express ideas about invisible spirits and gods; to formulate rules; to plan ahead; and, when plans failed, to talk things over.

Language became universal among humans because the advantages of its use were so great that only those who learned to use it survived. How and when human language began remains unknown. Changes in the shape of our throats and voice box were necessary before the full range of sounds used in human languages could be voiced, and only bones survive from when those changes in our soft tissues occurred. New connections in human brains were also necessary, for children's brains are genetically ready-wired to learn a language, as anyone who has watched a small child effortlessly learn to speak will realize; but that aptitude disappears among older persons, who use entirely different brain cells when trying to learn a second language.

If we ask what advantages the use of language brought to our ancestors, the first and most obvious answer is that resort to words permitted larger numbers of persons to cooperate more predictably and efficiently than ever before. That in turn made larger bands of hunters and gatherers able to defend their hunting grounds more effectively than any and all neighbors who had not mastered speech, so soon only those who talked survived.

But languages were never fixed. Always they conveyed an unstable pattern of meanings to humans through shifting sounds uttered according to grammatical order. Multiple, mutually unintelligible languages presumably took shape very quickly among different groups, and never stopped changing. The process continues today: some languages expand, others die out, and all of them alter, partly deliberately by the invention of new words for new things, or by borrowing from another language. But often, too, unconsciously, grammar, accents, and intonation alter among local speakers and sometimes accumulate locally until, with sufficient isolation, a local dialect turns into a new and different language.

Linguists study the nature of language and how it evolved. They have discerned families of related languages that spread widely in times past and are now used by millions of speakers. But thousands of other languages exist even today, some only spoken by a few hundred persons and likely to disappear entirely as contacts with the outside world multiply, and compel these small groups to deal with outsiders in a language other than their own.

Talking about Spirits and Gods

But amidst all the changes, some aspects of language remained worldwide, and they are worth noting. One of the most fundamental was the way our ancestors used language to expand the human experience to include a world of invisible spirits whose power was such that managing relations with spirits (later with gods) became a critical growing point for human society as a whole.

The Naxi people of Yunnan Province, China, possess the only extant pictographic writing system in the world. The use of Naxi Dongba script is restricted to priests and shamans, who read it when presiding over religious ceremonies and rituals.
Library of Congress.



The initial notion of an invisible spirit almost certainly derived from noticing human breath and observing the fact that when breath stopped death ensued. Though invisible, breath obviously mattered. It kept us alive, allowed us to move, talk, and think, and was our “spirit.” Wondering about how breath could do so much, coming in and out of our bodies unseen for a lifetime and then departing, suggested that other important aspects of human experience, especially dreams, trance, fevers, and illnesses, might result when our breath or some other invisible spirit—either friendly or hostile—invaded or departed from our bodies. From this understanding it was easy to assume that everything that moved—especially animals, air, water, and storms, together with sun, moon, planets, and stars—did so because spirits visited them too. It seemed, in short, that the whole world was also inhabited by invisible spirits, interacting with one another and with all the different bodies they chose to inhabit or abandon. It followed that all human hopes and fears depended on how the world of spirits behaved by either helping or hindering us at every turn.

This worldview took shape very early; perhaps soon after language itself came on stream. When human hunters spread around the inhabited Earth, beginning about 40,000 years ago, they carried these ideas with them. Moreover, most or all hunting bands relied on experts for dealing with the spirits. They became the first specialists, since assuring good relations with the spirits through rituals, prayers and offerings was obviously necessary to assure success for every human undertaking. Modern anthropologists call this world view “animism,” and it still lurks in our speech when we speak of “inspiration.”

When writing was invented, language and religion attained still stronger, and more lasting, hold on human minds. Prophets, teachers and law givers, by

writing their messages down, created texts that were believed to be directly inspired by God, or so wise and persuasive that later generations ought reverently to obey them. But later religions and most philosophies preserved a central idea of powerful invisible spirits (and later of a single omnipotent God) who demanded obedience and punished those who disobeyed.

Religious ideas were critical for the elaboration of early civilizations, for after agricultural villages supplanted hunting and gathering in a few unusually fertile regions, what persuaded ordinary farmers to part with a portion of their harvest was the harsh reality that they needed protection against natural disasters and human raiders. In the land of Sumer (modern Iraq), where the first cities arose, priests who specialized in serving invisible gods argued that to assure a god’s presence and good will it was necessary to build a magnificent temple, complete with a cult statue to live in, and to then persuade the god stay by giving him or her daily offerings of food, music, incense, and dance. Only when richly and reverently attended could the god be counted on to grant the priests prayers on behalf of the population at large.

Splendid and rare furnishings for larger and larger temples were needed to attract and retain a suitably powerful divine resident in each city, so priests collected a large share of the harvests to pay for rarities from afar as well as for their own upkeep. This was a recipe for resorting to long-distance trade employing donkey caravans overland and ships along the coasts of the Persian Gulf and Indian Ocean. Before long the temples of Sumer, like spiders at the center of their webs, consumed indefinite quantities of precious imported goods and used extra grain to feed large numbers of spinners and weavers, who manufactured woolen cloth for export to distant places in exchange.



A new scale of human communication and interaction ensued, tending to expand the reach of cities and of other city-based specialists—artisans, merchants, and warriors—across hundreds of miles. Other early civilizations also accorded a leading role to priests who served different gods, with rituals and theologies as diverse as the languages they spoke. But over and over again, when cities and temples became conspicuously wealthy, armed raiders from marginal lands tried to seize that wealth. Military leaders thereupon organized armies to protect everyone from raids, and eventually professional warriors overshadowed priests as the rulers of civilized peoples. Yet religious ideas and leaders always remained powerful; and belief in the power of an invisible God who controls human affairs remains profoundly influential today in monotheistic societies.

Regulating Behavior / Planning Ahead

A second and no less significant effect of language among our ancestors was to regulate everyday behavior by putting what everyone should do in all ordinary situations into words. When such rules survived the test of time, they became customary; obedience became almost universal, easing personal decisions and making interpersonal encounters more nearly predictable. Above all, cooperation became more efficient when customary codes of conduct, learned in childhood, minimized frictions, stabilized human life (insofar as that was ever possible), and guaranteed continuity generation after generation in most circumstances.

But continuity never banished change, for language also had a contrary effect of provoking new behavior whenever human expectations were disappointed. We can be sure that disappointments arose long before language developed among our ancestors; and humans and proto-humans had always been more apt to change their behavior than less intelligent species. But when language made use of tenses—was, is, will be—and other devices to describe the stream of time, the range of human consciousness widened enormously—so much so that we really cannot know what it was like to live in a sensory present without

words connecting what our senses apprehend each moment with past and future happenings. Animals live that way, and most certainly do have memories; but they may not be able to conceive of the future as we do with its uncertainties, risks and, rewards.

It seems sure, however, that when time distinctions took hold of human consciousness two things happened. First of all, it became possible to plan ahead, and by talking together in advance to agree on what each person should do to ensure success in the hunt, or whatever other task they set out to accomplish. Smoother and more precise cooperation must have resulted, together with more frequent success. This was, in all probability, by far the greatest advantage language initially brought to our ancestors.

But success was never total and when plans failed, people were almost compelled to ask, “Why”? And by talking things over they might agree to do something different next time. Prayer to appease angry spirits, especially those of game animals, may have been the most common remedy they could think of. That would seldom make any difference, though sometimes might make individuals braver or more vigorous in pursuit of a kill. But occasionally different tactics, different tools, or some other innovation brought success more dependably, and in such cases one can be sure the new ways quickly became the norm and spread among neighbors whenever imitation was feasible.

The fact that about 40,000 years ago, styles of shaping stone tools began to change in Europe far more quickly than before perhaps signals the effect of language on tool making. At any rate, it is the earliest known example of accelerating technological change which became obvious and swifter in subsequent ages and has recently increased our impact on other forms of life, and on the whole ecosystem, in ways that may not be sustainable much longer.

Yet language may also allow us to talk things over as before and alter our behavior soon enough to survive by minimizing disastrous effects of the recent pollution of our ecosystem. That is an optimistic view, for we can also imagine the possibility of life-destroying catastrophe—atomic warheads, global crop failure, or lethal disease—that might end our career on Earth with a bang or, alternatively, with a whimper.

Either way, our future, like our past, will be shaped through the use of language, thanks to actions inspired by words used to create agreed-upon meanings among us.

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See also Communication Media; Language, Classification of; Language, Standardization of

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Language, Classification of

The classification of languages, both those in use and those no longer spoken (but existing in the written record), depends on principles of linguistics that study languages in terms of their structure, their geographic distribution in the world, and their genetic relationship in language families.

The classification of human languages is a scientific activity that aims at grouping the approximately six thousand living languages of humanity (and the several hundred known languages that are no longer spoken but that left written records, some of them up to five thousand years old) into historically meaningful subsets. Throughout the history of linguistics—the scientific study of language—various principles have been used to arrive at such subsets, the three most important of which are the principles of typology, the principle of linguistic areas, and the principle of genetic relationship.

Linguistic Typology

Linguistic typology studies the possible and actual variation of human languages in terms of their structure. Thus, languages may differ in terms of the number and type of sounds (phonemes) they use. Some, for example, may have a very high number of consonants, as is true for most languages of the Caucasus region; others may have very few of them, as is the case in many Polynesian languages. The structure of words may differ widely; some languages use few if any form changes to alter the meaning of words (morphology), as is the case in Vietnamese and many other languages of Southeast Asia, while other languages

(many Native American languages, for example) have highly complex morphological systems. Almost any structural feature of languages may be and is used by typologists to compare languages and to group them into sets of languages that behave in a similar way.

The study of the typological variation of human languages reached a first peak in the early nineteenth century. The assumption that structural/typological similarity/uniformity of languages is also indicative of common descent (“relationship”) was gradually abandoned, however, when it became clear that languages may lose or acquire many structural features (previously thought to be quite invariant in the course of time). Thus, for example, a language may develop a systematic contrast of tone height to distinguish meanings (it may become a “tone language,” like Chinese), or, on the other hand, it may lose this feature (as, in fact, any other linguistic feature describable in typological terms). While language typology, after a certain period of comparative neglect, developed again (since the 1960s, driven by the seminal works of J. H. Greenberg), into one of the major and most successful subdisciplines of linguistics, it is no longer regarded as a primary tool for the detection of the (possible) common origin of languages.

Areal Linguistics

Areal linguistics studies languages from the viewpoint of their geographical (areal) distribution on the planet. While phenomena like this have of course been well known to students of language for centuries, areal linguistics as the systematic study of language interaction gained considerable momentum with the work of K. Sandfeld in the 1930s, which

drew particular attention to the striking similarities of many languages of the Balkans, which could only be explained as due to prolonged intensive contact between speakers of these languages (Greek, Serbo-Croat, Albanian, Rumanian) over many centuries. Rather than merely, and trivially, stating their locations, areal linguistics aims at elucidating the way languages spoken in adjacent regions influence each other. It is well known that words often travel from language to language (in English these loanwords include *beef* from French, *gestalt* from German, *habitat* from Latin, *taboo* from Polynesian, and *tipi* from Siouan), but languages also influence each other in terms of their structure as well. If the contact between two or more languages in a given area extends over a considerable period of time—generations or even centuries—it is often observed that structural traits of these languages converge, often to a considerable degree. In some cases a (politically or culturally) dominant language “attracts” other languages in its geographical scope, whereas in other cases languages in a given area (which may be continent sized) show a large degree of common structural traits that are best explained by areal convergence, but without a single discernable dominant language that can be held responsible for this picture. Well-studied areas of structural convergence of languages (for which the German term *Sprachbund*, literally “league of languages,” is widely used) are the Balkans, the Indian subcontinent, the American Northwest, the Caucasus, and New Guinea, but more generally such phenomena are observable across the planet.

In some cases, the study of the areal interaction of languages may, if used with due caution, reveal information about historical processes that took place sometimes even before the communities in question came into the scope of written history. The role of Scandinavian and, later, Norman French people in the history of England is well known and documented, and these periods of historical contacts left their footprint in the English language, but in certain cases language alone points scholars to contacts that may have taken place in early history. For example, certain traits of the Russian language betray the fact

that large areas of what is now central European Russia were once populated by tribes speaking languages akin to Finnish before the expansion of East Slavic/Russian to the east of Moscow (fifteenth–sixteenth centuries CE). Later those tribes were assimilated or driven out of those territories to survive only at their fringes. Another example worth mentioning is the presence in Zulu (and certain other languages of the Bantu language family in southern Africa) of “click” sounds that are characteristic of one or more early variant(s) of the so-called Bushman (Khoisan) languages, which today are spoken quite far away from Zulu territory, but which must have been present there in times well before our historical records for this region begin.

Genetic Linguistics

The third method of grouping the welter of human languages into meaningful subsets is that of genetic or historical comparative linguistics, which attempts to identify language families (groups of languages) that share a common ancestor language, which is usually no longer spoken and more often than not is not even attested in any written record. While areal and typological linguistics are sometimes able to lead researchers to insights into the general history of some regions of the world, genetic linguistics makes historical information a primary concern. People have been grouping “similar” languages into “families” for centuries, thus, for example, the basic unity of the Romance languages (as descendants of Latin) or that of the Semitic languages have been commonplace since the Middle Ages. No traveling speaker of Russian could ever fail to notice that, for instance, Polish is more “similar” to Russian than it is to German and, therefore, a prescientific notion of Slavic as a family could emerge long before the advent of linguistic methods. We may call such families, the unity of which is usually discernable for the untrained observer, or, in other words, evident on mere inspection, “trivial” language families. It was not before the turn of the end of the eighteenth century CE that language scholarship developed methods which allowed



the detection of “deeper,” “non-trivial” relationships between languages.

In many well-known cases, the genetic classification of languages alone was able to inform scholarship of sometimes large-scale prehistoric movements of people, which would have gone unrecognized otherwise. Some cases were quite surprising: the detection of the Indo-European family of languages at the end of the eighteenth century revealed the at the time unexpected fact that most languages of Europe (indeed, all but Finnish, Estonian, Hungarian and a few others related to them—the Uralic languages—and Basque, which does not fit in any language family) are demonstrably related to many languages of Asia, including Armenian, the Iranian languages, and Sanskrit and its relatives).

Genetic relationship of languages implies that the ancestors of the peoples using the languages in historical times must share a greater deal of their early history than other sources are able to tell us; in other words, these languages must be the continuations of a once existent “proto-language,” or, to quote William Jones, who, after having studied Sanskrit in India for several years while serving as a judge in Fort Williams (now Calcutta), inaugurated a whole new academic field with his famous words:

The Sanscrit language, whatever be its antiquity, is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident; so strong indeed, that no philologer could examine them all three, without believing them to have sprung from some common source, which, perhaps, no longer exists.” (William Jones, as quoted in Cannon 1991)

The fact that all these languages are indeed descendants of a lost language—most commonly called a proto-language, in this case Proto-Indo-European—is nowhere disputed today, but there is still no consensus on when and where this original language was spoken, or by whom. Most scholars today agree that the time of the dispersal, and finally disintegration, of this hypothetical group of Proto-Indo-European

speakers must have been in the late Neolithic (i.e., very tentatively between 8000 and 4000 BCE); on the original location opinions still abound, but southern Russia and the Ukraine, Anatolia, or the Ponto-Caspian steppe region are most often mentioned as possible candidates.

Another surprising result of the methodological study of language relationship was the discovery that Malagasy, the dominant language of Madagascar is, though geographically located in Africa, most closely related to languages as far afield as Indonesia, more precisely of the island of Borneo (Kalimantan), which implies a prehistoric maritime expansion of the ancestors of the Malagasy people over a considerable distance.

A further example is the discovery that the languages of the North American Apache tribes (located mainly in the southwestern United States) are most closely related to languages of the Athabaskan group, whose speakers live mainly in sub-Arctic and Arctic Canada and Alaska, showing that these culturally very divergent groups of Native Americans belong together historically.

It should be mentioned, however, that historical linguistics is not always that successful. The peopling of the Americas by migration across the Bering Strait is a well-established fact of prehistory, arrived at mainly by the application of archaeological methods; it should thus be expected, therefore, that at least some Native American languages would turn out to be genetically related to at least some languages of the Old World (such as Siberian languages). Although linguists and laypeople alike often proposed the idea of “Cross-Bering families,” a methodologically acceptable demonstration of such a connection is still lacking (with the possible exception of the Eskimo-Aleut family being relatable to some Siberian groups, among them maybe Uralic).

Language Isolates

Some languages have defied all attempts at classification and remain for the linguistic sciences what are usually called language isolates. Some of the better-known examples are Basque in the Pyrenees,

If you talk to a man in a language he understands, that goes to his head. If you talk to him in his language, that goes to his heart. • Nelson Mandela (b. 1918)

Burushaski in the Karakorum Mountains, ancient Etruscan in Tuscany, Ainu in Japan, and the first language to be put into writing—Sumerian—in what is now southern Iraq. Two major languages of East Asia, Japanese and Korean, are often said to be part of the so-called Altaic language family (which also comprises the Turkic, Mongolian, and Manchu-Tungusic languages), but many scholars now question the validity of Altaic as a genetic grouping, though some experts continue to view Japanese and Korean as being related at least to each other, and thus these important languages may have to join the roster of language isolates.

Accepted Language Families

Well-established and uncontroversial language families include Semitic (comprising Arabic and Hebrew, among others) and the larger Afroasiatic family (comprising Semitic, Ancient Egyptian, and other language groups of northern Africa), Dravidian (Tamil and other languages of southern India), Sino-Tibetan (Chinese, Tibetan, Burmese and other languages of the Himalayas and Southeast Asia), Austronesian (Malay, Tagalog, Malagasy, and languages of Oceania), Austroasiatic (Cambodian, Vietnamese and other languages of South and Southeast Asia). In Africa, the large Niger-Congo family is mostly accepted today (with the vast subgroup of the Bantu languages); important language families of the New World are Eskimo-Aleut, Algonkin, Siouan, Uto-Aztecan, Maya, Carib, and Ge, among others. Some specialists combine all aboriginal languages of Australia into one family, “Australian”; others define one big family on that continent, the Pama-Nyungan family, together with a number of others, which are mainly situated in the north and northwest of the continent. Of all major areas, the ethnically and linguistically stunningly diverse island of New Guinea is home to a disproportionately big number of language families, few of which have lent themselves so far to successful attempts of reducing this number. All continents are furthermore home to a number of further, smaller-scale, language families, which cannot fully be enumerated here.

Detecting Language Families

The methods of detecting a valid language family, or of combining established families into larger groupings, which are sometimes called phyla, are complicated and sometimes the object of ongoing scholarly debates. All agree, however, that some language families are so transparent that no special case has to be made for the common origin of their members. The Romance languages, for example, have the rare distinction that their proto-language—Latin—is actually attested. Other examples are Slavic, Germanic, Indic, Turkic, and Semitic. These easily identifiable families usually split up into single languages (subfamilies, branches, sub-branches) relatively recently.

For other families, the existence of which is not always obvious for the untrained observer, an intricate apparatus of methods has to be applied to demonstrate a relationship. A mere structural, or typological, resemblance of languages is now generally rejected as indicative of a valid language family, since it is well known and demonstrated that the typological makeup of languages may change, sometimes quite drastically, over the course of time. Nor may a linguistic classification be based on anthropological or so-called racial criteria, since established language families are known that transcend such boundaries (the Afroasiatic family, for example). Similarities of a general kind—most often observed in the lexicon of languages—may sometimes be no more than the result of mere chance; in other cases they may be the result of areal convergence of the languages in question.

It is generally agreed that a convincing demonstration of the genetic relationship of two or more languages (or families) requires a high degree of regularity of correspondences. In other words, even a large number of similar words may not suffice to demonstrate a relationship if it cannot be shown that the actual sounds (phonemes) making up the words and the affixes (morphemes) of the languages compared correspond to each other in a regular and predictable way. A further requirement that specialists often demand is that the morphological systems of languages within a family be demonstrably matchable

onto one another, and furthermore, that the degree of regularity found in the lexicon be strictly observed in the domain of morphology as well.

Other scholars have at times advocated less strict principles for the demonstration of genetic relationship, but their proposals remain highly controversial and continue to spawn heated discussions even today. The field of language classification is also one in which an unusually high number of amateur researchers continue to develop and publish often very idiosyncratic ideas, which sometimes receive the attention of the general public. It goes without saying that the language isolates mentioned above attract much attention from well-meaning amateur linguists, whose hypotheses—often brought forward with considerable ardor and not rarely used to support some political or nationalistic agenda—may frequently gain wide exposure in the popular press. Meanwhile, the scientific process of the classification of the languages of humankind is still ongoing, and important, even surprising, results may still be expected from it, even if certain issues are still the focus of sometimes-heated debates. One such controversy surrounds the attempts that have been made—and continue to be made—to reduce the number of identified language families to a considerably smaller number, maybe even to one, showing that all languages share one very remote common ancestor.

The Unique Challenge of Language Classification

The work of language classification owes much of its terminology and some of its more general principles and models to the classification of living species in biology. While there are indeed a lot of analogies between the two disciplines, the nature of their respective objects is profoundly different: one of the more important differences between biological and

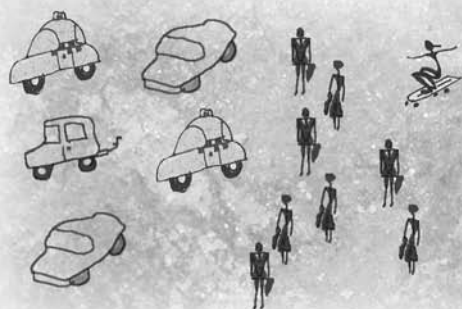
linguistic classification is the fact that while in biology the fundamental unity of the realm of living beings—that is, their ultimate relatedness—is not in doubt, and classification in biology is more a matter of establishing *closer* relationships between species, in linguistics no such underlying unity is generally agreed upon. Unlike the biologist, the linguistic taxonomist still faces the task of establishing relationships as such in the first place—the alternative being isolated, nonrelatable status for some languages—with some languages and smaller groupings still unclassified and the strong possibility that this state of affairs may remain without remedy.

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See also Language, Standardization of; Script Decipherment

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Language, Standardization of

Language standardization—the process of creating the (usually written) form of a language favored among its speakers—is profoundly intertwined with world history. For example, the language given status in a region has the potential to marginalize some people and privilege others. Conquering peoples often denigrate the language of the conquered, while that same language can become a rallying point for nationalistic movements.

The standardization of languages is the often consciously initiated and sometimes elaborately planned process of creating a form of a language—usually written—that serves as the accepted and favored means of communication among the members of a speaker group, who normally use more or less aberrant variants of this standard language in their daily lives. Typically, the agents of language standardization operate within the boundaries of and with the support of a political community, usually a state, but cases of conscious language standardization without such support, even against the political will of state authorities, or transcending state boundaries, are also known.

The Nature of Language Variation

One of the fundamental constants of human language is its variation. Languages change constantly in time, and languages used by large numbers of speakers display often considerable degrees of differentiation, which may at times impede the possibility of effective communication between speakers of the same language living in geographically separated locations.

It is probably safe to say that no two individuals use exactly the same language. Sociolinguists (students of language in its social context) speak of different idiolects, that is, languages as used by a single individual. In order to be an efficient tool of communication, it is of course necessary that a large number of individuals use, or be able to use, a language (or a variant, more neutrally called a linguistic code), with a reasonably high degree of uniformity. That uniformity enables speakers to communicate with other speakers effectively, ideally well enough that speakers meeting one another for the first time can communicate without problems. A group of individuals who use such a linguistic variant (acquired as any group member's first or native language) may be called a speech community, and their linguistic variant may be loosely referred to as a language. Languages that are used by large speech communities spread over a considerable territory show, more often than not, some degree of regional variation. Regional variants (which may be characterized by linguistic differences in all linguistic subsystems, including, for example, phonology, morphology, syntax, and lexicon) are commonly referred to as dialects. Most speech communities that are sufficiently large to know some degree of social differentiation or stratification develop linguistic variants divided by social boundaries; these are called sociolects. The average member of a larger speech community will typically be a native speaker of a dialect and, where applicable, may use a sociolect as well. Normally, many individuals will be able to use—or at least to understand—other dialectal or sociolectal variants of the larger speech community, especially individuals with a high degree of geographical or social mobility (or both).



It is not always easy to differentiate between a dialect and a language, and the determination is often made according to nonlinguistic criteria. For example, there is certainly no problem in determining the boundaries of the Icelandic language. It is the only indigenous language of the population of Iceland; its internal dialectal differentiation is minimal, and any indigenous population outside of the island does not use it. On the other hand, some languages of continental Europe are not so straightforwardly definable. A case in point may be the language pair formed by Low German and Dutch: Spread over a large territory in northwestern Europe from Flanders to northeastern Germany, speakers from opposite ends of this area will have little or no ability to communicate with one another in their vernaculars; however, the actual linguistic differences largely disappear as one moves from either end to the border zones of the Netherlands and Germany, where local variants spoken by individuals on both sides of the border are close enough to allow unimpeded communication. Such zones, in which linguistic differences increase gradually with geographic distance, are commonly called dialect continua. The fact that variants spoken in one country are referred to as dialects of Dutch, while those on the other side of the border are known as variants of (Low) German, is not justifiable on linguistic reasons, but rather is a consequence of political considerations and language standardization. Cases of sometimes very large dialect continua being differentiated into languages for historical and political reasons are widespread in Europe and elsewhere; examples in Europe include the West Romance dialect continuum (or DC), comprising French, Provençal, Italian, Catalan, Spanish, and Portuguese; the Scandinavian DC, comprising Norwegian, Swedish, and Danish; and the South Slavic DC, comprising Slovene, Serbo-Croat, Macedonian, and Bulgarian. Outside Europe, national languages such as Hindi and Urdu, Thai and Lao, Turkish and Azerbaijani, and Zulu and Xhosa may be mentioned. The fact that all these variants are generally perceived as and officially referred to as languages is due to the existence of nationally recognized standard languages, which

may be close to, but often differ considerably from, the variants (or dialects) acquired as first languages by many speakers.

The Importance of Writing

Whereas in unwritten languages sometimes a certain amount of dialect leveling may be observed (initiated, for example, by a commonly felt pressure to imitate a prestige variant, such as that of a politically or culturally dominant subgroup, a ruling clan, or maybe a center of trade and commerce), language standardization in the narrower sense of the word can only begin with the introduction of writing. Of course, the formation of discernable individual languages out of large dialect continua often precedes any purposeful standardizing intervention; thus, when people in northeastern France began to write in their vernacular (rather than in Latin) in 842 (with the Oath of Strasbourg, which united the Western and Eastern Franks), it marked the beginning of French as a written language, just as the so-called “Riddle of Verona” (a short text, which is possibly the first attestation of colloquial Italian, dating from the ninth century CE) marked that of written Italian. But the early phases of most written languages are—often for centuries—characterized by the parallel use of several regional (and, sometimes, social) variants; thus, premodern phases of written English (especially in the Middle English period) comprise texts in Northumbrian, Southumbrian, Mercian, Kentish, and other variants. The long way to what is nowadays known as Standard (British) English is marked, among other things, by the rise of London and its aristocracy, the works of Chaucer and the Bible translation of Wycliffe and Hereford in the fourteenth century (which set a linguistic standard much imitated and considered authoritative in following times), the codification of English orthography in Samuel Johnson’s dictionary (1755), and other important events.

At the beginning of a literary tradition, scribes and writers most often try to write down their particular vernacular—frequently on the basis of existing orthographical norms of a different language (so,

for example, the orthographic norms of Latin were adopted by those writing in Romance language vernaculars). The need for a unified standard may arise for a variety of reasons: For example, rulers or governments may wish to possess a unified written medium for their realm, which will allow a centralized control of administrative affairs. In modern times, the wish to propagate the idea of a unified nation may drive the efforts to create a national standard language, which is viewed as emblematic of a (possibly new) nation-state. Literate people and learned bodies may wish to define rules regarding how literature should be produced, very often on the basis of the usage of “classical” authors, who are taken as models for all future literature, both in terms of content and aesthetic form. And, of course, regionalist and nationalist movements operating within the boundaries of a larger state may use language and its standardization to propagate the public acceptance of a regional group as a population possessing the right to separate nationhood. In some cases, standard languages that transcend state boundaries are recognized and actively used: all German-speaking countries recognize the standard codified by the dictionaries of the Duden publishing house based in Mannheim, Germany, and in all Arabic-speaking countries the morphological and syntactical (and, for public broadcasting purposes, also the phonological) model of classical Arabic, as codified in the Qur’an, is regarded as the unquestioned norm for any public use of the language. Only in Christian Malta, where Islam plays no role but the vernacular language is a variety of Arabic, has an autochthonous written standard, based on the Latin alphabet, been developed.

Reflecting this roster of motives, language standardization may be driven by a variety of agents, among them individuals (such as, for example, Antonio de Nebrija, the author of a descriptive grammar of Spanish in 1492), autonomous societies (such as the Gaelic League, or Conradh na Gaeilge, in Ireland, active since 1893), semiofficial normative organizations (such as the Norwegian Language Council, or Norsk Språknemnd, founded in 1951), or official governmental bodies (as was the case for the standardization of the welter of official regional languages in

the former Soviet Union). Especially for the latter two cases, in which a government purposefully interferes with the norms of the official language(s) of a state or nation, the term *language planning* is widely used.

Reforms of Orthography

The most widespread and well-known instances of language planning or language standardization are reforms of orthography. They may be motivated by the urge to simplify existing orthographies, which are felt to be too complicated (as has been the case with the simplification of Chinese characters in the People’s Republic of China since the 1950s, the Danish orthography reform of 1948, and the simplification of Russian orthography in 1917). Another possible motive is the political wish to differentiate a language (sometimes quite artificially) from a closely related one spoken in a neighboring nation. Sometimes a different script is used to serve this purpose: a case in point is that of the “Moldavian” language, a variant of Romanian, linguistically barely different from the national language of Romania, but spoken in the territory of the former Soviet Republic of Moldova and written in Cyrillic script until the disintegration of the Soviet Union in 1991 (after which Moldovans not only reverted to use of the Latin script, but even abandoned the name *Moldovan* in favor of *Romanian*). The case of Tajik is similar: Linguistically a variant of Persian, Tajik was written in the Cyrillic script, rather than in Arabic script (as Persian is), when the area was part of the Soviet Union, and Cyrillic continues to be used in present-day Tajikistan. Finally, the case of Serbian and Croatian may be mentioned. These two are mainly differentiated by the use of the Cyrillic and Latin alphabets, respectively (linguistic differences between these variants of Serbo-Croat do exist, but their boundaries do not follow the cultural boundaries between Catholic Christian Croats and Orthodox Christian Serbs).

Standardization activities are, however, not limited to orthography: All linguistic subsystems may be the focus of planning activities. When it comes to the morphology and syntax of languages, however,

Broadly speaking, the short words are the best, and the old words best of all. • **Winston Churchill** (1874–1965)

the possibilities of introducing highly artificial norms that do not have any basis in any of the actually spoken varieties, are naturally limited. Those norms may be based on older spoken and written varieties of the languages, and they may be artificially conserved in a written norm, at times expanding certain usages beyond the scope actually found in the spoken languages. Thus, the use of certain past-tense forms is artificially preserved in written Standard German, while those forms have practically vanished from most spoken variants.

Reforming the Lexicon

Next to orthography, the lexicon of a standard language is arguably the area most often targeted by standardization activities. Two different tendencies may be singled out as most typical here: first, agents of language planning or standardization may feel that the language uses an unwelcome number of foreign elements (loanwords) from a different language, which should be replaced by “native” words; such attitudes and activities are usually referred to as linguistic purism. The donor language may be a formerly politically dominant language, the influence of which planners may seek to reduce after, say, political independence (as was the case with Russian elements in Latvian and other languages of former Soviet republics); it may be the language of a neighboring culture or state or nation, which is viewed as hostile by certain nationalist activists, or as the target of ethnic hatred (which explains the movements against French elements in pre–World War I Germany); finally, in some language communities a general consensus may prevail, at least among the cultural elite, that the language should be more or less kept free of *any* foreign elements; well-known cases of institutional purism include the normative activities of the Académie Française for French, or those of the University of Reykjavik for the Icelandic language, which was and continues to be extremely successful in coining and propagating new words for modern concepts based on the language material of the older Icelandic literature.

The second tendency when it comes to standardizing the lexicon is the planned expansion of the lexicon of a language. This is often felt necessary when a language is adopted as the standard written medium of a newly independent nation, but language politics for minority languages with official status in the former Soviet Union were also characterized by this tendency, as are language politics for official minority languages in the People’s Republic of China. In some cases, the adopted language may not have been used widely in writing before (or only for limited purposes), and widely known and usable lexical items for numerous purposes (technical, legal, scientific, political) may be lacking; often in such cases, language planners introduce loan elements from another language; if nationalistic ideology does not intervene, the languages of former colonial powers may remain sources of the expansion of such vocabularies (for example, the role of English as a source for modern terminology in most written languages of India, or that of French in many languages of western Africa).

Sometimes language standardization or planning activities may lead to rather unusual results: In this context, the phenomenon of *diglossia* should be mentioned. *Diglossia* is the presence of two different written norms for one language in one society. One example is modern Greek, in which well into the twentieth century two written norms competed for general acceptance, one based upon ancient Greek and considered more “pure,” and the other based on contemporary vernacular Greek (which gained much ground as the twentieth century waned). A second well-known example is that of Norwegian, in which both a city-based written norm that resembles Danish and a more countryside-based, “reformed” (i.e., largely purged of Danish characteristics) norm continue to be used side by side.

Language planners may choose a language as the national standard that is not spoken by any sizable population in their country at all, as was the case with the adoption of Urdu as the national language of Pakistan. Urdu was the (written) variety of Hindustani used in large parts of India, including the city of Old Delhi. Felt as emblematic for the new Islamic nation



of Pakistan, it was adopted as its national language, although only in a relatively small pocket around Karachi was it used as a native language (Sindhi, Punjabi, Baluchi, and Pashto being more widespread as first languages in the country).

Finally, there is one case in which a language that actually died out was raised to the status of a national standard through the combined effort of a community with a strong commitment to its national identity and heritage: Israeli Hebrew. Centuries after it had ceased to be anybody's first language, it was consciously revived by Jewish settlers in the Middle East in the early twentieth century, was declared the national language of Israel in 1948, and now boasts around three million native speakers.

Language Standardization and World History

As the examples mentioned throughout this article indicate, language and language standardization are profoundly intertwined with world history. What languages are accorded status in a region affects the lives of peoples in that region, potentially marginalizing some while securing the fortunes of others. It is not surprising that conquering peoples try to stamp out or denigrate use of the language of the conquered,

nor is it surprising that language becomes a rallying point for nationalistic revolutionary movements. In nation-states in which multiple primary languages are spoken, the degree to which language issues can be amicably resolved is often a strong indicator of the stability of the country. As a political tool, language standardization has the potential both to create unity and to sow the seeds of dissent.

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See also Esperanto

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Laozi

(SIXTH CENTURY BCE)

LEGENDARY CHINESE PHILOSOPHER

Laozi, a book also known as *Daodejing* (*The Way and Its Power*) or *The Book of Five-Thousand Characters* (because it contains just about that number of Chinese characters), refers to the text that set forth in eighty-one poems the principles of Daoist philosophy and religion; its alleged author is also known as Laozi.

Laozi (Lao-tzu), who is commonly credited with writing the Daoist classic, the *Daodejing* (*The Way and Its Power*), was among the most influential figures in Chinese history, second to, if not equal to, the philosopher Confucius (551–479 BCE). Ideas in the *Daodejing*, although seemingly mysterious and paradoxical, are subtle and profound and have influenced every aspect of Chinese civilization (government, philosophy, religions, sciences, medicine, arts, and martial arts).

The name “Laozi” means “old master.” Little information about the man exists. The earliest record of Laozi is in *Shiji* (Records of the Grand Historian), written during the Han dynasty (206 BCE–220 CE) by Sima Qian (145–87? BCE). In his biography of Laozi, Qian gave Laozi’s birth name as Li Er, also known as Li Dan, the name of a staff official at the imperial library of the Zhou dynasty (1045–256 BCE). Laozi cultivated learning but did not reveal his knowledge or ability. As the Zhou dynasty declined, Laozi decided to leave. At the city gate, at the request of the gatekeeper, he wrote two books, *Dao* and *De*, with a total of about five thousand characters (words). No one knew where he went then, and Qian wrote that some people said Laozi lived to the age of 160 or 200 and attributed his longevity to the cultivation of *dao* (the Way).

Qian’s account of Laozi’s life includes a visit Confucius made to Laozi. Using Confucius as a medium, Qian referred to Laozi as a dragon, the most auspicious and grand symbol in Chinese civilization to illustrate the breadth, depth, and versatility of his words. Qian also mentioned another person, Lao Laizi, who also wrote Daoist text and who also was the contemporary of Confucius, but Qian did not identify Laozi as Lao Laizi. Some modern scholars question whether Laozi was the contemporary of Confucius and date him in the third century BCE, during the Warring States period (475–221 BCE). Other scholars support Sima Qian’s dating.

During the second century BCE, at the end of the Han dynasty, folk beliefs blended with Daoist ideas and developed the religion of Daoism. After that Laozi was venerated as the founder, and the *Daodejing* became a text with magical and protective power for followers of several schools of religious Daoism. When Buddhism became popular in China, legend claimed that Laozi went to the West and was reincarnated as Buddha. During the Tang dynasty (618–907 CE) Laozi was honored as an imperial ancestor to enhance the prestige of the imperial family, who had the same last name. Temples were built for Laozi, and Daoist monasteries were popular throughout the Tang dynasty. Moreover, the *Daodejing*, as a book about philosophy and governance, was adopted as a text in the imperial government’s civil service examination for sixty-six years, along with Confucian classics. From the third through the tenth centuries “Laozi” was a common name for Chinese intellectuals as well as religious people.

The *Daodejing* consists of eighty-one short chapters of philosophical prose, which often are paradoxical;

I have three treasures. Guard and keep them: / The first is deep love, / The second is frugality, / And the third is not to dare to be ahead of the world. / Because of deep love, one is courageous. / Because of frugality, one is generous. / Because of not daring to be ahead of the world, one becomes the leader of the world. • Laozi (c. sixth century BCE)

therefore, commentaries on the text became important. Ho-shang Gong's commentary of the Han dynasty and Wang Bi's commentary of the fifth century became the standard version. Recent tomb excavation unearthed an earlier version of this text that has slight variations. Some scholars believe that the *Daodejing* is an anthology by more than one author. The thought in the book, however, is consistent.

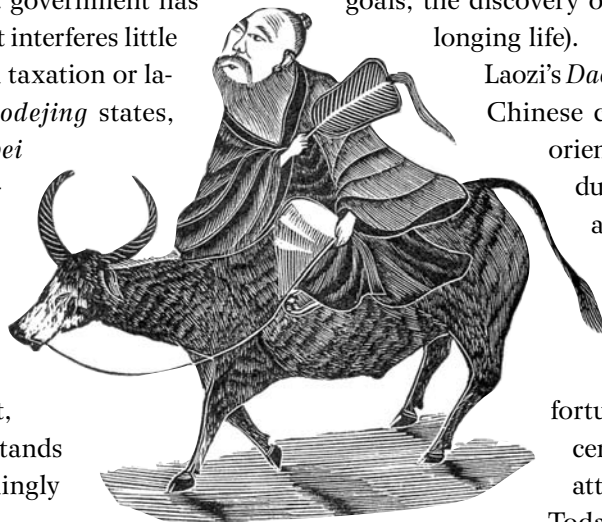
The *Daodejing* states that a metaphysical, all-encompassing, and organic *dao* (Way) is the originator and sustainer of all things in the universe. It can't be described. As the *Daodejing* states, "the *Dao* that can be told is not the constant *Dao*," yet this *dao* is modeled after naturalness or spontaneity and can also be discerned in ordinary or even lowly things.

The *Daodejing* draws its inspiration from the observation of nature, for which it has a profound preference. It exhorts frugality, contentment, and tranquility and promotes few desires. Moreover, contrary to common assumptions, it claims that the weak overcome the strong and that the soft overcome the hard. The *Daodejing* states, "Of all things in the world, nothing is more soft and weak than water, yet none could rival water in dissolving the hard and the strong." Some scholars believe that the *Daodejing* teaches people means of self-preservation during troubled times. The *Daodejing* also proposes ways for a sage ruler to govern. Its ideal society is a simple and primal society where people are content. Moreover, its best government has only a shadowy existence: it interferes little with people's lives either in taxation or labor conscription. The *Daodejing* states, "I [the ruler] practice *wu-wei* [nonactions] and the people were self-transformed; I love tranquility, and the people became pure and good . . ." But the *Daodejing* is not just a creed for simplicity and contentment, it also embraces and understands changes, making it a seemingly simple but profound text.

Ideas in the *Daodejing* have been applied in Chinese government, notably during the early Han dynasty under the emperors Wen and Jing (180–141 BCE). Under the name of "Huang-Lao" (combining the name of the legendary Yellow Emperor with "Laozi"), the early Han government was frugal and nonactive and levied light taxes to allow citizens to recover from the heavy taxation and wars of the previous Qin dynasty (221–206 BCE). Near the end of the Han dynasty and for the next several centuries, religious Daoism thrived. People revered Laozi as a deity; philosophers adopted ideas from the *Daodejing* and eventually wrote a large collection of Daoist scriptures. Daoism also influenced Chinese arts. Along with *Zhuang Zi* (Master Zhuang), another Daoist classic written during the Warring States period, the *Daodejing* inspired literati landscape painting, most notably during the Song dynasty (960–1279). The scene was usually of one or two scholars strolling among mountains and trees. Daoist ideas also inspired many of China's most treasured poems. People often consider Li Bai (701–762 CE), a Daoist of the Tang dynasty, to be China's greatest poet.

During the early Qin dynasty Daoism also inspired Chinese primitive sciences and martial arts and influenced Chinese medical theories and practices. Daoists' search for a longevity elixir promoted the development of alchemy (a chemical science and speculative philosophy that aimed at, among other goals, the discovery of a means of indefinitely prolonging life).

Laozi's *Daodejing* fundamentally changed Chinese civilization. It balanced goal-oriented, ethically motivated, and duty-bound Confucianism with a sense of individual freedom in its tranquil appreciation of the beauty of nature and understanding of changing and unpredictable fortunes. Since the late eighteenth century the *Daodejing* has also attracted many Western minds. Today it is one of the books most



translated into English. Scholars and laypersons explore and perceive its ideas from different angles, comparing it with Christianity, appreciating its tranquility and love of nature, seeking an individual's freedom from highly structured modern society, or simply studying the ritual and practices of the religion of Daoism. Western intellectuals have freely interpreted and explored the text in their own search for a space in a highly standardized and bureaucratic world. Regardless of whether Laozi or more than one author wrote the *Daodejing*, it has significantly influenced Chinese civilization, and its influence has spread beyond the Chinese horizon and into world history.

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See also Confucianism; Daoism; Philosophy, Asian

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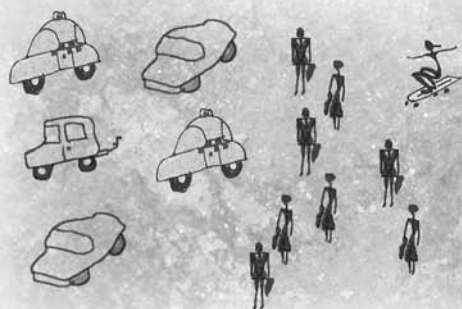
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Latter-Day Saints

The Church of Jesus Christ of Latter-Day Saints (LDS), also called the Church of Jesus Christ, is the fifth-largest Christian denomination in the United States. The church is often called the “Mormon” church because of members’ adherence to *The Book of Mormon: Another Testament of Jesus Christ* as scripture in addition to the Bible.

Headquartered in Salt Lake City, Utah, but with members in more than 160 countries in 2010, the Church of Jesus Christ of Latter-day Saints has quickly established itself as a significant world denomination. Scholars have referred to it as “a new religious tradition” (Shipp 1985, 149) and have seen in its growth “the rise of a new world faith” (Stark 1984, 18).

Founding and Membership

The Church of Jesus Christ was founded on 6 April 1830, in Fayette, New York, by Joseph Smith Jr. (1805–1844), who, as a fourteen-year-old boy, sought an answer to which of the many competing Christian denominations he should join. He testified that he was visited by God and Jesus Christ and was instructed to join none of the denominations. Church members believe that Joseph Smith Jr. was called as a prophet and received divine revelations, many of which were published in the *Doctrine and Covenants*, a book that details Smith’s received revelations. It is now part of the Latter-day Saint canon of scriptures.

Since the time of Joseph Smith Jr., the Church of Jesus Christ has experienced dramatic growth. By the

end of 2009 the church had a worldwide membership of about 13.8 million. Less than half of Latter-day Saints live in the United States and Canada. Some countries in the South Pacific and many Latin American countries and regions have comparatively large Latter-day Saint populations, including Mexico, the Caribbean, Central America, and South America. The church is still a small minority but has experienced substantial growth in Asia, Africa, and Europe.

Basic Beliefs and Practices

Core teachings of the church include beliefs in Joseph Smith Jr.’s call as a modern-day prophet, the church as a restoration of the original pure Christianity established by Jesus Christ during his mortal ministry, acceptance of *The Book of Mormon: Another Testament of Jesus Christ* as a translation of records of ancient prophets in the Americas and, with the Bible, as divine scripture. Church members believe in Christ and see him as the head of their church, but the church does not belong to the Catholic, Protestant, nor Eastern Orthodox families of churches. Many of the basic beliefs of the church are stated in the *Articles of Faith*. Key doctrines include the restoration of divine priesthood authority; continuing revelation to church members and modern prophets; high moral standards of honesty, chastity before marriage, and fidelity after marriage; and a health code that prohibits the consumption of alcohol, tea, and coffee and any form of substance abuse. Church members pay one-tenth of their incomes to the church as a tithe and are encouraged to fast monthly and give the money they would have



Stipple drawing of the prophet Joseph Smith.

Courtesy of L. Tom Perry Special Collections, Harold B. Lee Library, Brigham Young University.

spent on food, or more, to a fund to help the needy. The church also has an extensive welfare program, designed to meet the temporal needs of church members who are unable to provide for themselves or their families.

The Church of Jesus Christ had 130 operating temples throughout the world as of 2009, which are used to conduct ordinances such as marriage ceremonies, but are not used for ordinary weekly worship services. Latter-day Saint doctrine teaches that marriages solemnized (“sealed”) in Latter-day Saint temples do not dissolve at death and that the family is the core unit of the church and society. The church also encourages education and offers a subsidized loan fund for members seeking higher education in developing countries. The church also has an extensive educational system, including Brigham Young University in Utah, one of the largest private universities in the United States.

Many university-age single men and women, as well as retired married couples, serve as full-time missionaries for the church around the world for one to two years. At the end of 2009 more than fifty thousand missionaries were serving at their own expense in the region of the world they were assigned to by church headquarters; in many cases they learn a foreign language to serve. Local leaders of the church are not salaried ministers. They, along with most members who serve as part-time teachers, leaders, and youth leaders in local congregations, are lay volunteers who give of their time for a few years in an assigned church position while continuing normal employment.

Historical Development

The early years of the Church of Jesus Christ were marked by persecution and movement westward. During the first two decades of the church, members were driven to Ohio; to Independence, Missouri; to Far West, Missouri; and, after being the subject of an extermination order by the governor of Missouri, to Nauvoo, Illinois. After the martyrdom of Joseph Smith Jr. at the hands of an angry mob in 1844, the Latter-day Saints eventually migrated 2,000 kilometers west to Salt Lake Valley, now part of Utah, under the leadership of the second president of the church, Brigham Young (1801–1877). After moving to Utah the Latter-day Saints faced an occupying army from 1857 to 1860, sent by U.S. President James Buchanan, who acted on false rumors of a Latter-day Saint rebellion.

Early official persecution and mob violence against Latter-day Saints constitute one of the harshest examples of religious persecution in U.S. history. Friction arose from religious, cultural, and political differences with their fellow frontier people, particularly over issues of slavery, which was legal in Missouri, and fears of Latter-day Saint political domination.

Another point of contention was the Latter-day Saint practice of polygamy (plural marriage), which was publicly taught from 1843 until it was discontinued in 1890, and efforts by the Latter-day Saints to establish economically self-sufficient



Mormon Temple, Salt Lake City. Courtesy of L. Tom Perry Special Collections, Harold B. Lee Library, Brigham Young University.

communities. Fears of Latter-day Saint practices led to federal U.S. legislation from 1849 to 1896 attacking polygamy, denying civil rights to polygamists and nonpolygamous members of the church, and dissolving the Corporation of the Church of Jesus Christ of Latter-day Saints. Legal challenges by Latter-day Saints to antipolygamy legislation resulted in the first U.S. Supreme Court cases interpreting the free exercise clause of the U.S. Constitution: *Reynolds v. United States* (1878) and *Davis v. Beason* (1890), which upheld federal legislation against both polygamy and the Church of Jesus Christ.

Despite the persecutions of the early years of the church, missionary work continued to fuel its growth. During the 1840s thousands of people joined the Church of Jesus Christ from missionary efforts, particularly in Great Britain, and immigrated to the Americas. As early as the 1850s, missions were opened in Chile, France, Germany, Gibraltar, Hawaii, India, Italy, Malta, Scandinavia, South Africa, the South Pacific, and Switzerland. Since that time international missionary efforts have increased, but by the 1920s church policy no longer encouraged members to gather at a central geographical region.

During recent years the international growth of the church has been increasingly reflected in LDS demographics. By 1996 more church members lived outside the United States than inside, only 30 percent of members lived in the western United States,

and fewer than 20 percent lived in Utah. As of 2009 church members belonged to 28,424 local units; church materials are available 166 languages. Since the late 1960s the church has had a growth rate of about 50 percent per decade. Based on this growth rate, the sociologist Rodney Stark has argued that Latter-day Saints “will soon achieve a worldwide following comparable to that of Islam, Buddhism, Christianity, Hinduism, and the other dominant world faiths” (Stark 1984, 18).

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See also Religious Freedom

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Law, Civil

One major accomplishment of the Roman Empire was the development of a civil law system comprising statutes, forms of procedure, judicial decisions, imperial edicts, senate legislation, opinions of jurists, and the assimilation of some local customs across its vast territory. By modern times civil law applied to most of the world, with the exception of Britain and its domains.

What began as Roman law, *ius civile* (“citizens’ law”), became an imperial, continental, and then a global organizing principle. Roman law started as a set of binding rules that aimed to ensure harmony and facilitate commerce by confronting challenges, accommodating change, creating institutions, embracing legal concepts, and enshrining oral customs in a written format. Civil law did not usually apply to slaves. The goal was to fully regulate the lives and relations of citizens.

Civil law had diverse, incremental sources. Composed of statutes, basic forms of procedure, decisions by judges, imperial edicts, senate legislation, opinions of jurists, and the assimilation of some local customs, civil law helped consolidate the management of a heterogeneous empire. The development of uniform laws across its vast territory throughout Europe, the Middle East, and North Africa was one of the most notable accomplishments of the Roman Empire. By modern times civil law applied to most of the world, with the exception of Britain and its domains.

Ancient Rome

In 450 BCE, Roman leaders (consuls) proclaimed the Twelve Tables that organized public prosecution and

punishment of crimes while instituting an adjudication of civil disputes. Common people (plebeians) were to be protected from the predominance of the privileged class (patricians). Male heads of families (patriarchs) wielded decisive power over their families.

Beginning in 366 BCE, praetors (magistrates from the social elite who administered justice) clarified philosophical and practical conflicts. They also proclaimed the principles of justice by which they would interpret the letter of the law. The spirit of the law was typically conservative, aspiring to protect lives, property, and the reputations of citizens. Correcting wrongs and reversing injustice were additional guidelines. Growing relations with foreigners who lived under Roman jurisdiction (or close to it), necessitated the formation of the *ius gentium* (“peoples’ law”). Its application did not discriminate between people on the basis of their citizenship. This concrete framework, coupled with *ius naturale* (“natural law”), a more philosophical set of principles, facilitated a more universal conception of laws.

Gaius (flourished 130–180 CE) authored the Institutes (“foundations”) around 130 CE. This treatise analyzed Roman law and serves as a major source for civil law. The Institutes described the different status persons possess; belongings, and how ownership is acquired, including wills; interstate succession (what to do when a person dies without leaving a will) and obligations; and various forms of actions (how to properly conduct legal issues).

Justinian’s Contribution

The roots of civil law as conveyed to subsequent generations are derived primarily from Roman law as

Good laws are the offspring of bad actions. • Charles Macklin (c. 1697–1797)

preserved and formulated by legal experts commissioned by the Byzantine emperor Justinian I (527–565 CE). He wanted to provide a systematic imperial law amid confusion after centuries of contested decisions. A further reason was to highlight, in Latin, the legitimacy and piety of Roman traditions as a proper foundation for Christian communities, and in the process position himself as an enlightened, reform-minded leader, thus consolidating his own political authority.

The result was the *Codex Justinianus* (Justinian Code), proclaimed in 529 CE. Justinian then commissioned sixteen lawyers to order and codify the legal opinions of the Roman *jurisconsulti* (“legal experts”). They issued the *Digest* of Roman jurisprudence (much of which transmitted, verbatim, Gaius’s Institutes) in 533 CE. In the same year, Justinian’s team published a handbook of civil law, which was to serve as a textbook for law students. Through its name, Institutes, they clearly tried to build upon, and replicate, the reputation of Gaius’s work four hundred years earlier.

An authoritative version of the *Codex Justinianus*, updated through the labor mentioned above, was published in 534 CE. Justinian forbade any commentary on the Digest, and possibly on the other legal instruments as well, making this *corpus juris civilis* (“body of civil law”) the normative standard for over a millennium. Finally, although the project was completed only after his death, Justinian inspired the composition of the Novels, new laws issued—primarily in Greek, symbolizing the political transfer of power to Byzantium—after the Corpus.

Overall, these compilations reflect quite accurately contemporary Roman laws. In the legal heritage that was his legacy, Justinian exuded confidence in his own understanding of God’s guidance to the type of Christianity he espoused, but showed little tolerance toward any other versions, much less to Jews or pagans. Perhaps thanks to the influence of his controversial wife, Theodora (c. 497–548 CE), Justinian improved the status of women. He was also particularly attentive to equitable administration of the provinces.

The Middle Ages

Justinian’s volumes were coupled with incremental jurisprudence composed of judicial decisions, the opinions of legal scholars, wide public obedience toward emerging norms in criminal, commercial, and maritime law, and evidence of continuous custom. These were complemented by canon law. Combined, they serve as the sources of modern civil law.

After the breakdown of the world order that followed the gradual collapse of the Roman Empire around 500 CE, civil law was used by the multiple successor sovereignties and political entities. It thus became the organizing legal principle of continental Europe. Charlemagne (Charles the Great, reigned 768–814 CE) relied on Roman traditions to derive legitimacy and for practical reasons. When, blessed by Pope Leo III (reigned 795–816 CE), Charlemagne established the Holy Roman Empire on Christmas Day 800 CE, the principles of its civil law governed matters of private law, together with local Frankish customs and notions of Christian justice.

The Modern Era

Starting from the sixteenth century, the civil law system expanded to the colonial territories of European states—including France, Belgium, Portugal, and Spain—in Latin America, Asia, and Africa. Other countries affected by contact with European powers, such as Japan and China, also adopted civil law. Socialist countries, beginning with Russia, adopted it as the legal system. Civil law has also served as the foundation for the principles of international law. The Roman phrase *ius gentium* (commonly translated in this context as “the law of nations”) was the initial designation for the legal system that addressed more than one center of sovereignty.

The most important example of a modern *corpus juris civilis* is the 1804 Napoleonic Code. It became a role model for others, thanks to its relatively inclusive and progressive spirit, especially the emancipation of religious minorities such as the Jews. Napoleon Bonaparte (1769–1821) consolidated

With customes wee live well, but Lawes undoe us. • **George Herbert (1593–1633)**

French influence, and his own rule as an emperor, over a considerable segment of the world amid his wars with Britain and its allies. His code has three parts (governing personal status, property, and the acquisition of property), roughly corresponding to the structure of the *Codex Justinianus*.

Relationship with Common Law

Civil law is distinguishable from the British common law tradition, established after William the Conqueror successfully invaded England in 1066. Historically, there were substantive differences. Whereas common law relied on unwritten custom, then on long renderings of judicial opinions primarily affirming or rejecting precedents, civil law is based on detailed, explicit clauses in binding codes or other legislative acts, and on short judgments interpreting and applying the norms exemplified by such binding instruments. In addition, as its name denotes, common law only applied, at least initially, to the lower classes in the empire, in England and beyond, but not to the monarchy and the titled aristocracy. The jurisdiction of civil law, in contrast, was meant to be more comprehensive, incorporating all citizens. In reality, however, many of these distinctions were more semantic than substantive.

Some places, such as the Canadian provinces of Quebec and New Brunswick, and Louisiana in the United States, because of their considerable French heritage, possess strong civil law traditions (in 1774 the British Parliament passed the Quebec Act allowing this territory to retain the French civil code; Louisiana adopted its own code in 1821). Because they are part of a federal framework, the ultimate authority over such jurisdictions is vested in their supreme courts, where the majority inevitably comes from areas governed by common law; Canadian custom allots Quebec three of nine seats in the Supreme Court.

The Future

Since World War II, and the speedy availability of case law and scholarly research to most interested

jurists and institutions, common law and civil law converge much more than they diverge, linguistic and cultural distinctions notwithstanding. As the harmonization of laws necessitated by globalization continues, civil law may come to be remembered more as a relic of the past than a unique organizing principle, even in continental Europe, where its legacy cannot be erased. The pioneering importance of civil law will serve as guidance as international law expands into dimensions hardly known or practiced until the twentieth century, such as the promotion and protection of human rights and the environment.

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See also Justinian I; Napoleonic Code

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Law, Contract

Contract law is the body of law that regulates and enforces promises and exchanges, for either immediate or future performance, between two or more consenting parties. It also provides legal remedies if one or more of the parties break these agreements.

Contract law fulfills a moral, social, and economic function. The moral function of contract law is rooted in the premise that promises made are to be kept, which is almost universally recognized in customary law, as well as to varying extents in positive law. Socially, contract law is a means for regulating and defining social relationships, such as in the case of marriage contracts, or contracts between different social orders or castes. Economically, contract law facilitates commerce by providing a form of legal guarantee of remedies for broken contracts, which facilitated the development of long-term trade, as well as the use of negotiable instruments, such as letters of credit and bills of lading.

Moral Functions of Contracts

The legal scholar Harold J. Berman wrote that the Western ideal of contract law began with the theory that “a promise created an obligation to God” (Berman 1986, 112). Not only does the canon law of the Jewish, Islamic, and Christian faiths affirm this idea, nearly all cultures have a form of contract premised on the moral notion that promises are to be kept. In traditional India and China, contracts were often adjudicated in terms of moral principles (dharma in Hinduism; *li* in Confucianism); a contract which violated general rules of morality or equity could be ruled invalid, even if

the acts were otherwise licit. Roman law mandated that contracts be “clothed,” that is, parties must have had a tangible purpose or reason (*causa*) for entering into a contract. Therefore, Roman law emphasized the binding nature of the promises made between parties, and in determining the legality of a contract, jurists in the Roman law tradition privileged the ends, or the reasons for creating the contract over the means by which the contract was created. Medieval canonists added an element of Christian morality to contract law which held that the final purpose of a contract, regardless of the intermediate expectations of the parties, must conform to moral principles. The Civil Code of Napoleon (1804) mandated that a valid contract was one to which parties voluntarily agreed, and that was done for licit purposes; the form of the contract was secondary to the ends. In Anglo-American common law, principles of equity applied as well, and the doctrine of unjust enrichment meant that courts could order quasi-contract actions, which are court ordered adjustments to contracts that are meant to restore equity between the parties, to recover sums from those unjustly enriched on behalf of plaintiffs.

Social Functions of Contracts

For most of the history of traditional China and Japan, there was no formal contract law, although other laws, such as imperial or feudal laws, could be used to seek legal protection and remedies in contract disputes. Moreover, customary law in China and Japan served the purposes of substantive contract law. This customary law was closely bound to the social structures of each society: the Confucian familial and clan hierarchy in China and the feudal system of traditional

Japan. In China, the Confucian ideal of the family, which dictated strict obligations between individual family members, relationships of whole family units to each other, and to the society as a whole, superseded any individual contractual relationships. In other words, contractual relationships were bound first by the Confucian system, and only secondarily by the individual agreement. Traditionally in China, recourse to the courts was considered the very last resort in a contract dispute; arbitration was almost always preferable, because an irresolvable dispute signified a small breakdown in the traditional Confucian order. Similarly in Japan, contract disputes were almost always subject to mediation, except that where in China the family or clan formed the basis of arbitration, in Japan the feudal village more than the family was the operative unit. In the West, contract law formed part of a broader law of obligations which similarly defined social relations. The intricacies of the Roman system of patronage meant that Roman law considered “like” contracts (*obligationes ex quasi contractu*), such as the giving of gifts, to be a source of legally binding relationships. Even in modern business practice, as Stewart Macaulay has observed, contracts are less a means of regulating exchange than a method of building relationships, and a breach of contract is a serious break which “often results in a ‘divorce’ ending the ‘marriage’ between the two businesses, since a contract action is likely to carry charges with at least an overtone of bad faith” (Macaulay 1963, 65).

Economic Functions of Contracts

The English legal scholar Henry Maine wrote that a shift from “status to contract” was fundamental to the creation of modern social and economic systems (Maine 1917, 100). In other words, modern (i.e., Western) legal systems, contractual relationships, and economic systems depended on the social equality of the parties, the ability to freely enter into exchanges, and the confidence the law would enforce these exchanges. In ancient Greece, by comparison, although Athenian contract law allowed for absolute freedom to enter into contracts, in practice this only applied to citizens of

the polis. In the seventeenth century, English jurists began to emphasize the concepts of “consideration” and the “bargain,” which, although similar to the Roman concept of *causa*, differed in that English common law generally did not consider either the ends of a contract nor the status of the parties involved. Instead, English law concentrated on the bargaining between parties from which a consideration, an act or promise by which one party acts in consideration of a reciprocal action, creates a binding agreement. English common law also developed the doctrine of “strict-liability,” which placed an absolute binding obligation on the parties regardless of the reason for nonperformance. In *Paradine v. Jane* (1647), a lessee was still bound to pay rent to his landlord, although the defendant’s lands and crops had been destroyed during the English Civil War, because the court ruled that contracts are entered into freely by the parties involved. This seemingly harsh measure, however, has been undeniably important in the development of commerce and trade by making negotiable instruments, such as letters of credit, checks, and bills of exchange (all of which are essentially contracts which promise future payments), a more efficacious way of transferring large sums of money, because no matter how many parties that negotiable instrument has passed, the recipient could expect payment because “strict liability” still bound the original issuer to the original contract.

Historians and Contract Law

The intricacies and formalities of contracts and contract law have often been imposing to the point that many historians have disregarded contract law as a subject of inquiry. However, contract law, even in its most formal expressions, reflects the historical context in which the law was created, or contract disputes adjudicated. Moreover, as the American legal scholar Lon L. Fuller observed, contract law is not only the positive law of contracts, but an expression of customary law, and thus “contract law...refers primarily, not to the law *of* or *about* contracts, but to the ‘law’ a contract itself brings into existence” (Fuller 1969, 14). Thus, for the historian, contract law can yield

important information about culture, ideology, society, and economics and a valuable point of inquiry into the past.

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See also Rights, Property

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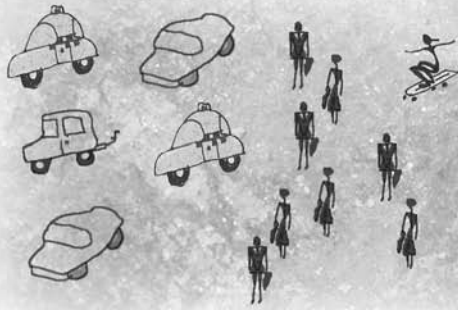
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Law, International

International law has been evolving for centuries to provide a framework for international and transnational activities. Like other areas of the law, its purpose is to allow participants to deal with each other with some level of predictability and thus to reduce misunderstandings and to avoid conflicts and confrontations.

International law, with its primary goal of providing a structure for dealings among international and transnational governments, is a more primitive system of law than the domestic legal systems found in advanced nations. It does not have a legislative body with the capacity to enact laws binding on all nations, an executive branch or a military or police force that can enforce the laws that do exist, or judicial tribunals that have broad jurisdiction or the power to issue binding and enforceable decrees in many circumstances. Although early versions of such bodies can be found in the United Nations and in emerging regional organizations, the process of constructing institutions that enjoy widespread support and can meet the challenges presented by a deeply divided world is just beginning.

Some have argued that international law is not really law because a superior body cannot enforce it. But most commentators contend that because most countries follow international law most of the time, and because those countries that violate its norms do frequently suffer consequences, it should be viewed as a system of law.

International law is less developed than other systems of law because the larger and more powerful nations do not always accept that it is in their interest to subordinate their self-interest to an international or

multinational rule. Although smaller nations will see the benefit of an international structure that protects the weak against the powerful, the stronger nations do not always agree that such a structure is beneficial. The foundations of international law have always been reciprocity and enlightened self-interest.

Sources of International Law

The primary sources of international law are treaties—bilateral and multilateral—and “customary international law,” which emerges from the actual practices of states and is undertaken with an understanding that these practices are required by law (*opinio juris sive necessitatis*). The “practices” of states are usually found in actions taken by a country, but they can sometimes be discovered in the statements their diplomats or leaders issue or in their votes at international organizations or diplomatic conferences. To become “custom,” a practice must have the widespread (but not necessarily universal) support of countries concerned with the issue and must usually have continued for a period of time long enough to signify understanding and acquiescence. Occasionally a regional custom can emerge, if the countries of a certain part of the world order their affairs in a certain manner.

In recent years, it has become accepted that some principles of customary international law are so important that they are called “peremptory norms” or “*jus cogens*” (commanding law) and that no country is permitted to depart from these principles. Among these norms are the prohibitions on aggression, genocide, crimes against humanity, slavery, extrajudicial murder, prolonged arbitrary detention, torture, and racial discrimination.



Although most historical summaries of the development of international law focus on its growth in Europe and the West, the reality is more complex. Practices governing interactions among nations and peoples also developed in Asia and elsewhere, and these norms have been merging with those that came to be accepted in the West. The growing recognition that groups, as well as individuals, have human rights protected under international law is an example of a non-Western contribution to international law.

Emergence of Modern International Law

Most scholars explain that “modern” international law emerged in Europe at the time of the Renaissance and Enlightenment through the Peace of Westphalia, which ended the Thirty Years War (1618–1648) and gave formal recognition to the sovereign state system. This treaty-based system was designed, in part, to allow Catholic and Protestant states to coexist in Europe. International law became necessary to confirm the boundaries among these states and to bring some order to their dealings with each other. Countries accepted the doctrine of *pacta sunt servanda* (treaties are to be observed), now a fundamental principle of international law, and established some machinery for the settlement of disputes. During the years that followed, citizen participation in government grew in England and then in France through the French Revolution. As monarchies crumbled, individuals, corporations, nongovernmental organizations, and international organizations emerged as part of the international legal system.

The Final Act of the Congress of Vienna (1815), signed by Austria, France, Great Britain, Portugal, Prussia, Russia, and Sweden, which formally ended the Napoleonic Wars, was another significant event, because it created a system of political and economic cooperation in Europe and also articulated governing norms of international law. Among the principles that emerged from this Congress was a set of rules governing diplomatic protocol, a condemnation of the slave trade, the principle of free navigation (not only for the

riparian states but for all states) on the major rivers of Europe, and the neutrality of Switzerland. Treaties, both bilateral and multilateral, began to cover a wide range of topics, supplementing and sometimes replacing custom as a source of law.

During the period of colonial expansion that took place in the last half of the nineteenth century, the concepts of international law that had been utilized in Europe and the West were introduced into Asia by the Western powers. Western international law was then even more primitive than it is today. No global institutions existed, and only a few special-purpose regional organizations had been created. Some topics—such as diplomatic immunity—were fairly well defined, and consensus had also been reached on the important goals of stopping piracy and slavery.

Laws of Armed Conflict

War was still viewed by many as an acceptable instrument of foreign policy, but the dramatic increase in destructive weaponry resulting from the industrial revolution caused many to realize that some constraints were needed on the use of force. Major international meetings were called, the most significant being the 1899 and 1907 Hague Conferences, which were designed to codify the laws of armed conflict and establish limits on certain types of military activities. The growth of daily newspapers in the industrialized countries had the effect of allowing common citizens to participate more fully in policy decisions, and led, in many countries, to a democratization of international politics.

Twenty-five nations attended the 1899 Hague Conference, which was convened by Czar Nicholas II of Russia, and a larger number ratified the documents produced by the meeting, which included conventions governing the conduct of warfare and the peaceful settlement of disputes. Although European nations dominated these negotiations, nineteen Latin American nations signed or ratified one or more of the documents, as did China, Japan, Korea, Persia, Siam, and Turkey.

An unjust law is itself a species of violence. Arrest for its breach is more so. • Mohandas Gandhi (1869–1948)

The 1907 Hague Conference, called again by the Russian Czar Nicholas II upon the urging of Theodore Roosevelt, produced additional conventions designed to limit the scourge of warfare. The European nations again dominated the negotiations, but eighteen Latin American nations signed or ratified one or more of the conventions (Honduras was missing), as did China, Japan, Persia, Siam, and Turkey (with Korea missing because it had become a protectorate of Japan). Liberia also adhered to many of the conventions.

Natural Law vs. Positive Law

The nature of the evolving international legal system was described by many as one of consent—or “positivism”—wherein only those norms agreed upon by states could be enforced against them. But perhaps because of the theocracies that had governed many parts of Europe in previous centuries, the Canon law that had developed during that period, and the religious fervor that still burned brightly for many others, contended that certain inherent principles also governed nations. Tension emerged between this “natural law” formula as the basis of international law and the perspective of “positivism” promoted by others, and this tension still exists today.

The Dutch diplomat Hugo de Groot, who wrote four hundred years ago under the Latin name Grotius, is often called the father or founder of international law because he tried to reconcile natural and positive law. His analysis of the laws of war, the law of the sea, and the protection owed to diplomats laid the framework for modern thinking on these topics. He believed that a “law of nature” could be deduced by logical reasoning, rather than by resort to divine sources, and thus tried to formulate a law that could be acceptable to all, conceivably even to “infidels.”

Another continuing issue has been whether international law is incorporated into national legal systems, and is thus part of the law applied by national courts (“monism”), or whether it is a separate and distinct legal system governing nations but not accessible by normal citizens in disputes in domestic courts (“dualism”).

Continuing Challenges of a Divided World

After World War I, the League of Nations was established and served to promote dialogue and negotiations, but its efforts to stop the continuing imperialistic activities of some nations were unsuccessful and the world again engaged in massive slaughters in World War II. The 1928 Kellogg-Briand Pact, which outlawed the recourse to war, did not stop warfare, but it at least has required countries to come up with some justification for armed conflict, with “self-defense” being the most common excuse.

The United Nations was established in 1945, and the nations of the world have entered into numerous additional bilateral and multilateral treaties since then on subjects ranging from economic affairs to the law of the sea to human rights to arms control. The U.N. Security Council, with 15 members, including 5 permanent members (China, France, Russia, the United Kingdom, and the United States) that can veto any resolution, has the responsibility to deal with threats to the peace and breaches of the peace. The General Assembly, now with 190 members, serves as a forum for discussion and annually enacts a wide range of resolutions addressing global problems. The International Court of Justice sits in The Hague, the Netherlands, and decides cases brought to it by governments. Numerous more specialized tribunals have also been created.

Regional organizations have been created in almost all areas of the world, with the European Union and other European organizations being particularly effective in addressing regional issues and reducing tensions among nations. Many in the developing and non-Eurocentric parts of the world still view international law as dominated by the West and by the rich and powerful countries, and efforts are continuing to find ways to restructure the United Nations to reflect the world’s diversity more fairly and to allow it to operate more efficiently.

The international legal system is still a work in progress. As the world becomes increasingly

interdependent, international law will become more important and more complex. Countries remain reluctant to give up essential elements of sovereignty and autonomy. But as transnational problems present themselves, transnational solutions will continue to be devised. Through this incremental process, international law will continue to grow.

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See also International Court of Justice; International Criminal Court; International Organizations

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Law, Natural

Natural Law—which in its most basic sense involves universal, objective, and moral concepts that shape proper personal and political associations—originated in ancient Greece and Rome and continued to evolve through the history of Western civilization as an alternative to other theories about human behavior.

Generally speaking, the Natural Law comprises universal, objective, and necessary moral truths, which define proper personal conduct or the fundamentals of political association. By necessity, this statement is an oversimplification because the meaning and import of the Natural Law has evolved throughout the history of Western civilization—from its genesis in ancient Greece and Rome to its modern, postmodern, and relativist twentieth-century forms. The Natural Law pervades the Western philosophical tradition as an alternative to subjectivist, cynical, or skeptical theories about human behavior and political association.

Natural Law in Ancient Greece and Rome

Although numerous cultures had recognized the basic dichotomy between law as an artifact and law existing outside and independent of human society, ancient Greek culture was the first to raise this distinction as a purely philosophical question. The issue of how to achieve happiness and well-being (*eudaimonia*—from *daimon*, the divinity that presides over the happiness or misery of a human being, and *eu*, meaning “well”) fascinated the ancient Greeks. The philosophy of Natural Law concluded

that *eudaimonia*, which the Stoics would later call the “good life,” involved “living in agreement with nature.” Before Natural Law was explicitly defined in philosophical terms, it was largely implicit in Greek culture, as revealed in Sophocles’ fifth-century-BCE tragic drama *Oedipus the King* (by reflecting on the nature, sources, and consequences of Oedipus’s fate) and in the pre-Socratic metaphysical debates concerning the static or mutable nature of the universe. It was also implicit in Aristotle’s (384–324 BCE) distinction between natural and legal justice. Throughout, the Greeks repeatedly contrasted universal truths grounded in an objective and unchanging reality with subjective beliefs based in mutable facts or on contingent social customs.

In the Hellenistic Era (323–31 BCE), Zeno of Citium (334–262 BCE) explicitly conceived of Natural Law as a central concept of his Stoic school of philosophy. The Stoics maintained that the universe was structured and organized according to rational laws, which were knowable via the one human faculty that shares in this universal reason—the rational mind. These universal, absolute, unchanging laws constituted the Natural Law, and living in agreement with nature (as structured by the Natural Law) was the good life.

Although the Stoics gave birth to the formal concept (and phrase) “Natural Law,” they are not responsible for the long-standing impact that it would have on moral and political philosophy over the next two millennia. The reason is that the original Stoics were determinists. Thus, they believed that living in agreement with nature was solely an issue of aligning one’s internal mental states with the events of the external world that were necessarily determined by Natural

Law. The Stoic ideal was the happy tranquility (*apatheia*) of the person who simply accepts the world for what it is and has to be. There was no role for social or political philosophy in this worldview.

The Romans were heavily influenced by Stoicism, and some of the most prominent Stoic philosophers in the Western canon are Romans, such as Seneca (3 BCE–65 CE), Epictetus (55– c.135 CE), and Marcus Aurelius (161–180 CE). The most prominent Roman Stoic is the lawyer and philosopher Marcus Tullius Cicero (106–43 BCE).

As a lawyer, Cicero rejected Stoic determinism but found the Stoic concept of Natural Law vitally important for practical morality and politics. As the Natural Law comprised what Cicero called “right reason,” it was applicable to (and was accessible by) all people in all places at all times. Thus, it became key to grounding political theory in a moral theory based on a universal human attribute: the human mind or, more precisely, the human capacity for reason.

This conception of Natural Law soon found a role in the unique and revolutionary tripartite division of socio-political rules developed by the Romans. In political and legal practice, the Romans had already conceptualized two types of law: the law of nations (*jus gentium*), an embryonic version of international law, and the civil law (*jus civile*), the particular laws of each sovereign empire or kingdom. Cicero’s conception of Natural Law (*jus naturale*) was incorporated into this structure, serving as a universal, absolute moral foundation for both the law of nations and the civil law. For the first time in Western thought, a universal and absolute moral law was applied to all political institutions and laws.

Modern Theory of Natural Law

Early Church Fathers, such as St. Ambrose of Milan (c. 340–397 CE), utilized Cicero’s version of Natural Law to justify the emerging Christian Roman Empire. The concept largely disappeared, though, from philosophical—and what became theological—work for much of the Medieval Era, and was replaced by the Christian conception of Divine Law. Natural Law

would reemerge after the turn of the first millennium in the work of Master Gratian (c. twelfth century), and, most importantly, in the work of Saint Thomas Aquinas (c. 1225–1274). Thomas Aquinas synthesized Christian theology with rediscovered antiquarian texts, including those of the Stoics and Roman jurists. The result was the explicit reintroduction of Natural Law into Western philosophy, but in a way that accommodated the now-dominant moral conception of the Divine Law.

Thomas Aquinas redefined the ultimate universal law as the Eternal Law, from which derived both the Divine Law and the Natural Law. Bifurcating Divine Law and Natural Law would have profound implications for the development of modern political theory. On the one hand, the Divine Law was the universal moral foundation for personal salvation, as guided by the rules set forth in the Decalogue and in the commandments of the New Testament. The Divine Law applied to human-made law, according to Thomas Aquinas, but only insofar as political and legal rules affected a person’s ability to ascend to heaven. In this way, there was some overlap in the content of the Natural Law and the Divine Law.

On the other hand, Natural Law comprised abstract moral principles necessarily intrinsic in the temporal world and ascertainable by reason, and from these rational principles, people deduced proper socio-political rules. Natural Law was the universal moral foundation for human-made law. As Thomas Aquinas declared, quoting St. Augustine (354–430), “An unjust law is no law at all.”

This distinction between Divine Law and Natural Law matured in the seventeenth century in the work of Hugo Grotius (1583–1645), Samuel Pufendorf (1632–1694), and John Locke (1632–1704). It was now possible to provide reasoned analyses of the normative requirements of political systems and laws without reliance on particular, and most likely disputed, religious doctrine. Grotius, recognized as the “father of modern rights,” argued that Natural Law required respecting each individual’s life and liberty (*suum*) and property (*dominion*), which were identified as “Natural Rights.”

Our speculation has burst through the ramparts of heaven, not content to know merely what is shown to it. • Seneca (4 BCE–65 CE)

Pufendorf systematized Grotius's arguments, producing an original and intricate Natural Law/Natural Rights philosophy. His magnum opus, *On the Law of Nature and of Nations*, explained how Natural Rights justified civil society and its myriad legal rules; this text would serve as the principal legal treatise in Europe and would be often cited by English and American judges up through the late nineteenth century.

Finally, Locke's *Second Treatise on Civil Government* established Natural Law/Natural Rights theory as a normative foundation for limited, democratic government and the rule of law. Locke's political philosophy was the fountainhead for the Founding Fathers' creation of the United States of America.

Nineteenth and Twentieth Century Challenges

In the nineteenth century, Natural Law philosophy waned with the rise of utilitarianism and related positivist doctrines. Jeremy Bentham (1748–1832) famously declared that Natural Rights were “non-sense on stilts.” Legal positivism in particular directly challenged the central premise of Natural Law—the necessary connection between moral rules and socio-political rules. For legal positivists, such as John Austin (1790–1869 CE), legal rules can be analyzed and assessed without reference to, or reliance on, moral principles. The only law is human-made law, which is conceptually distinct from moral theory.

This raised questions about whether it was possible to form universal moral judgments about differing political systems or rules, which became a particularly salient concern with the rise of totalitarian regimes in the twentieth century. Following World War II, the Natural Law was called upon to condemn Nazi atrocities. Thus, in the second half of the twentieth century, there was a revival of scholarly interest in the Natural Law. Ronald Dworkin advanced the proposition of the inescapability of moral theory in legal decision making. John M. Finnis developed a version of Natural Law more closely aligned with the moral dictates of the Catholic Church, but other contemporary Natural Law scholars dispute his views

on these matters. As it has since the time of Cicero, Natural Law continues to offer universal, absolute moral rules for evaluating political institutions and human-made laws.

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See also Aristotle; Locke, John; Philosophy, Greek and Roman

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Law, Sacred

The term “sacred law” generally denotes a body of laws that is understood by a group of believers to have been divinely revealed. Most, but not all religions, have such legal aspects: Hinduism, for example, traces the origins of its sacred laws to the oral traditions recorded in the Vedas, while for Judaism the earliest source of sacred law is in the Torah.

Divine law usually refers to a divinely created natural law or to the unwritten and universal rules of morality, but sacred law is intended to govern human actions in the temporal sphere in accordance with the sacred, and often takes the form of positive written laws and oral or customary laws. Sacred law, therefore, leaves room for human interpretation and adjudication of conduct and transgressions of sacred law, usually by a priestly class. Although most, if not all, religions have legal aspects, this article will focus on the sacred laws of the major religions: Hinduism (and by extension Buddhism), Judaism, Islam, and Christianity—religions in which the law is believed to be divinely inspired or revealed, organized in a discernable collection of written or oral codes, and binding over human activities in the temporal sphere.

Hindu and Buddhist Law

Hinduism, the oldest of the major world religions, traces the origins of its sacred law to the earliest written texts, the Vedas, a collection of oral traditions written down in the period around 2000 BCE. Although the Vedas concentrated primarily on rituals devoted to a pantheon of gods, and not on law, the concept of dharmas, moral principles which guide

human action in conjunction with *karma* (the force generated by a person’s actions to bring about transmigration and to determine the nature of the person’s next existence), is discernable throughout. The dharmas also contributed to the development of the caste system of Hinduism, and thus formed a customary code of social obligations in ancient India.

Toward the end of the Vedic period, around 500 BCE, many of the rituals and rules that had developed from oral tradition were collected in texts known as sutras. The *Dharmasutras*, the rules of daily life, became the first codes of Hindu law. Living according to dharma became one of the “jewels” of Buddhism as well, and therefore, in terms of sacred law, Buddhism and Hinduism share a common origin. In Buddhism, however, the concept of dharma evolved aesthetically, with individuals seeking to achieve an inner tranquility, and it achieved its fullest expression in the Japanese cult of the Buddhist monk Nichiren (1222–1282 CE) and the Lotus school. In India, the Hindu law of dharma became a comprehensive code of personal law, governing marriage and the family, inheritance, and social obligations. In 1772, the British ordered that the *Dharmasutras* be considered binding as personal law in the Anglo-Indian courts, and thus the Hindu law, in conjunction with English rules of criminal and civil law, remained an effective code in a secularized form in the modern age.

Jewish Law

The Torah, also known as the Pentateuch, is the first source of sacred law for the Jewish tradition; it is a written, substantive law governing Jewish religious, social, and familial obligations believed to have been



divinely revealed to Moses during the Exodus from Egypt. During the fifth century BCE, after the Persian emperor Cyrus the Great (c. 550–529 BCE) permitted Jews to return to Palestine following the Babylonian conquest, a number of Jewish scribes provided commentaries on the Torah; some of the most significant are found in the Book of Ezra, and they created the foundations of a comprehensive Jewish jurisprudence. In addition to the Torah, Jewish tradition holds that the sacred law also included a divinely revealed oral law (*halakha*). *Halakha*, which was comprised of the statements of oral positive law (*Mishna*), commentaries on these laws (*Gemara*) and a number of moral and ethical precepts (*Haggadah*), were put into written form in the third through sixth centuries CE in the Palestinian and Babylonian Talmuds. The *Mishnas* are organized categorically and they cover legal matters ranging from religious observances to dietary laws, contracts and torts, criminal law, family law, and property and legal procedure. In the last few centuries BCE, legal questions turned into sectarian rivalries between the high priests, the Sadducees, who regarded only the Torah as authoritative, and the scribes and laity, the Pharisees, who regarded the oral law as an equal part of divine law. The activities of the Pharisees proved vitally important in Jewish history, as they developed a method of legal study of the law centered on a rabbinic tradition and scholarly communities that became a permanent feature of Judaism. Still, later movements in Jewish history, such as the Hasidic movement of the eighteenth century and the Jewish Enlightenment (*haskalah*) and secularizing reform movements of the late eighteenth and nineteenth centuries, have significantly challenged the binding authority of Jewish law to regulate the private and public lives of Jews.

Islamic Law

Islamic law (*sharia*) originated with divine revelation. The Qur'an, which Muslim tradition holds was divinely inspired, and which is generally believed to have been written by Muhammad (c. 570–632 CE), contains the founding principles of Islamic law,

principally, definitions of the holy obligations of believers. The Qur'an has few direct legal statements, and these are limited to modifications of Arabic customary law. However, once Muhammad had established an Islamic community at Medina in 622, he began to apply the general ethical and moral principles of Islam to matters of secular jurisprudence, thus forming a basis for a specifically Islamic customary law. The application of Qur'anic ethics to secular affairs developed into an Islamic jurisprudence, by which the juridical goal was the discovery of the exact meaning and application (*fiqh*) of Allah's law in secular matters. The founding of the first Islamic dynastic state, the Umayyad dynasty, in Damascus in 661 broadened the focus of Islamic law into areas of civil, commercial, and administrative law. The ninth-century Shafi'i school created a comprehensive Islamic jurisprudence that integrated elements of positive, customary, and natural law. Jurists were first obligated to consult the Qur'an and the precedents set by Muhammad on matters of law. In cases to which the positive law of the Qur'an did not directly apply, judges were then to compare elements of the case at hand with established precedent (customary law), and finally to take into consideration matters of public interest and equity (natural law). The Shafi'i school of Islamic jurisprudence became the dominant school of Islamic law, especially within the Sunni communities, and it generally fixed the available sources of law and juridical procedure. However, the Shi'a tradition, which became especially influential in modern-day Iran, held that secular rulers were divinely inspired descendants of Muhammad, and therefore their legal decisions established a much wider set of case law that jurists might examine for relevant precedents.

Christian Law

The early development of Christianity entailed a break with Judaism and Jewish law. Christian belief considered Jesus Christ the fulfillment of the Jewish prophets' prediction that a messiah would arrive. The mission of Paul (first century CE) to non-Jewish communities within the Roman world, and Paul's

insistence that converts to Christianity were not obligated to follow Jewish law, entailed a decisive break between Christianity and Judaism. Intermittent Roman persecution of Christianity in the first three centuries CE made the religion essentially a private cult, one which developed little in the way of laws that governed public life. The conversion of the Roman emperor Constantine (c. 274–337 CE) to Christianity, and the subsequent adoption of the religion as the official cult of the Roman Empire, meant that in secular legal matters, the Christian church deferred to the secular powers. The collapse of the Roman Empire in the West left the Christian church as one of the only central authorities in western Europe, yet it remained under the dominance of secular kings in legal and jurisdictional matters. The Investiture Controversy (1075–1122 CE) between the Holy Roman emperors Henry IV and Henry V and Pope Gregory VII, which started as a conflict over lay nomination of bishops, was as much a conflict about whether or not the state had jurisdiction over the affairs of the Church. The outcome decidedly favored the Church, and it emerged as an independent institution, a virtual state, with its own hierarchy and rules of governance. The Church created a system of canon law, the *jus novum*, which drew heavily from the Roman Code of the Byzantine emperor Justinian, which was newly discovered in the West. The monk Johannes Gratian (d. c. 1160 CE) drew up the full code of canon law, *A Concordance of Discordant Canons*, in 1140; although not formally a sacred law since it was not held to be divinely revealed, Christian canon law was the first widely used code of law in the West following the collapse of the Roman Empire.

Sacred Law and Integrative Jurisprudence

The modern trend by which in some societies the law is viewed as a fixed body of rules set by lawmakers acting out of secular and rational concerns, while in other societies the law continues to be understood as a function of the sacred, has led to what Samuel

P. Huntington (1996) called a “clash of civilizations.” Nonetheless, even various sacred law traditions contain elements of jurisprudence that would be recognizable to modern secular legal traditions. In other words, despite the fact that sacred law is held by believers to be divinely revealed, these sacred law traditions all contain elements of what the legal scholar Harold J. Berman (1993) called an integrative jurisprudence of positive law (the rules established by the law maker), customary law (the law in a historical and social dimension), and natural law (moral and ethical principles). Thus, the seeming dissonance between the various religious legal traditions, or between religious and secular law, may very well be overstated when considered in terms of common elements of integrative jurisprudence.

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See also Christian Orthodoxy; Gregory VII; Islamic Law; Judaism; Justinian I; Religion and Government

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League of Nations

The League of Nations was created in the wake of World War I. It formally existed from 10 January 1920 until 1946, with its seat in Geneva (in neutral Switzerland). The league cannot be dissociated from the ravages of the Great War and the emergence of its conception as “the war to end all wars,” even though it totally failed in its goal of preventing the outbreak of another world war.

During the Paris Peace Conference, which was largely dominated by debate of Wilson’s Fourteen Points (delivered a year earlier to the U.S. Congress on 8 January 1918), the final draft of its Covenant (constitution) was agreed upon by the leaders of France, Great Britain, and the United States, known as the “Big Three” (Georges Clemenceau, David Lloyd George, and Woodrow Wilson), on 14 February 1919. The Covenant became part of the Treaty of Versailles (28 June 1919). Point 14 argued that “a general association of nations must be formed under specific covenants for the purpose of affording mutual guarantees of political independence and territorial integrity to great and small states alike.” Though European intellectuals had broached the idea of an international peacekeeping organization before the war, and a “League of Nations Society” was founded in Britain in 1915, the proposal has therefore remained associated with President Wilson.

The two great European victors, prime ministers Clemenceau and Lloyd George, had grave reservations, for different reasons. France would bow to the discipline of such an organization only if it felt safe against renewed German attack, and during the

discussions, Wilson persuaded Clemenceau that if he agreed to join in the creation of the League of Nations, the United States would guarantee the inviolability of France—and Lloyd George agreed to associate himself with the proposal. In Britain, the Conservatives, or the “party of empire,” as they liked to call themselves, were suspicious of this American idea, which might well be a ploy to sap Britain’s world role. Most important, Lloyd George had reservations about the proposed clause concerning sanctions by other League members if one member was attacked—the gist of what came to be known as collective security. Economic sanctions would penalize exporting countries like Britain, and military intervention would of necessity rely on the Great Powers’ involvement if it was to have any efficacy—which would also be onerous to Britain, with the largest navy in the world. Thus Britain would lose the freedom to make its own judgments and be automatically committed to costly measures possibly decided by others. But for President Wilson, this clause was the essence of the League—as indeed subsequent events were repeatedly to demonstrate—and Lloyd George relented, because he knew that this was the only way he could obtain reciprocal concessions from Wilson.

Much the same arguments on the loss of sovereignty to other (implicitly, lesser) nations were heard in the United States, especially in Republican circles, with their traditional isolationist desire to avoid entangling alliances. But Wilson refused to listen to these warnings, and despite the reluctant support of Clemenceau and Lloyd George, he was unable to persuade the United States Senate to provide the necessary two-thirds majority to ratify the Treaty on 29



The League of Nations in session in Geneva, Switzerland, 1936.
National Archives of Canada.

November 1919 (the vote was 49 for, 35 against). The League was mortally wounded, since its credibility and viability as an international peacekeeping force was seriously impaired, the more so as Bolshevik Russia had not been invited to join. Britain and France, both severely weakened by World War I, were left to provide leadership for an organization that never really managed to establish itself as an undisputed moral authority, let alone a respected military arbitration force.

The League had some success in settling minor border disputes between Bulgaria and Greece and Iraq and Turkey in the 1920s, but when it had to face its first major crisis involving two powerful members, the invasion of Manchuria, China, by the Japanese in September 1931, its impotence was made clear to all. Neither Britain, which had a wide but indefensible presence in South and Southeast Asia, nor the United States, which aspired to replace Britain as the major Western power in the area, was prepared to alienate the Japanese, who were allowed to keep the territories conquered by military force—the prevention of which was the *raison d'être* of the League. And when the League refused to recognize the new puppet state of Manchukuo, Japan resigned in protest (March

1933), thus setting a pattern followed by other unscrupulous states: aggression leading to purely verbal condemnation, seen as a pretext for withdrawal from the League.

Only a few weeks earlier, Hitler had become chancellor of Germany, which had been admitted in 1926. At the earliest opportunity, provided by the failure of the World Conference on Disarmament sponsored by the League, Nazi Germany left the organization, in October 1933. Italy followed suit in December 1937, after its invasion of Ethiopia and its easy defiance of sanctions imposed by the League. The Soviet Union, which had joined in 1934 because it feared Nazi Germany, was expelled in December 1939 after its invasion of Finland. The year 1940 marked the de facto demise of the League, even though it continued to exist de jure until its remaining economic and humanitarian activities were officially taken over by the new United Nations organization on 19 April 1946.

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See also Treaty of Versailles; United Nations; World War I

Until he extends the circle of his compassion to all living things, man will not himself find peace. • **Albert Schweitzer (1875–1965)**

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Leisure

The meaning of *leisure* has been difficult to pinpoint throughout history as cultures and technologies have changed, but is often defined in three categories: the possession of “free” or unobligated time, the participation in pursuits as varied as rest and outdoor recreation, and as a state of mind rather than a reflection of physical activity.

Leisure occupies a major role in the lives of many people. Its history, like that of most other things, activities, or concepts, depends on how it is defined. Leisure, however, has been particularly difficult to define for a variety of reasons. For one, it has been impossible to craft a definition that is both inclusive (i.e., all forms of leisure are included) and exclusive (i.e., everything that is not leisure is excluded). Moreover, few other languages around the world have a word with the same meaning as the English word *leisure*, making a cross-cultural understanding of the concept problematic. In North American and European leisure research, the term has been most often defined in three ways. First, leisure has been defined as free or unobligated time. Second, it has been defined as action or participation in “leisure activities.” Third, leisure has been defined as an experiential state of mind or being wherein meaning is the critical issue.

Leisure as Free Time

The idea that leisure as free time contributes to the development of civilization is central in the “surplus theory” of cultural evolution that developed in the

middle of the twentieth century. The U.S. anthropologist Franz Boas stated this thesis most clearly:

A surplus of food supply is liable to bring about an increase of leisure, which gives opportunities for occupations which are not absolutely necessary for the needs of life. In turn the increase of population and of leisure, which may be applied to new inventions, give rise to a greater food supply and to further increase in the amount of leisure, so that a cumulative effect results. (1940, 285)

But evidence accumulated since the late 1950s, initially based on studies of the Bushmen of the Kalahari Desert in southwest Africa, refutes the idea that food collectors have little or no free time compared to sedentary agriculturalists. The anthropologist Elman Service indicated that the Arunta, for example, an aboriginal hunter-gatherer group from Australia, have abundant free time, claiming that “The Arunta . . . are literally one of the most leisured people in the world” (1958, 10).

With the development of civilization, the amounts of free time, as well as its use, varied substantially between men and women and among social classes. In ancient Athens the leisure of upper-class males was supported by the labor of women, slaves, and working classes. In ancient Rome, public games, known as *ludi*, began during the third century BCE. The number of holidays increased rapidly with seventy-six celebrated by the first century BCE. By the fourth century CE, 175 holidays were devoted to theatrical performances, chariot races, and gladiatorial combats.

In post-Roman Europe, the agricultural cycle and the Roman Catholic Church largely dictated the free



Sixteenth-century German dancers are on their way a wedding feast.

time of commoners. Sundays and saints' days provided free time opportunities. Attempts to regulate working hours met with mixed results. A 1495 law in England prescribed a 5 A.M. to 7 P.M. working day, but ten- or ten-and-a-half-hour days were still common. Tradesmen often took an informal holiday on Mondays because raw materials were not delivered until late that day or the following morning, a practice that came to be known as "Saint Monday."

The Industrial Revolution, beginning in the mid-1700s in England, had the most important influence on the allocation of time to labor and leisure since the development of agriculture. It segmented days into specific periods of work time and leftover time through the imposition of "clock time" while factory work segmented families. Men, and frequently boys, left their homes to work in factories and mines while women and girls remained at home. Religious leaders often saw factory work as providing discipline and advocated long hours of work while recreation and play were devalued.

Hours of work declined only slowly from as many as eighty per week in early factories to fifty in much of Europe by 1847. The eight-hour day became widespread only after World War II. Although forty hours of work per week remains the legal standard in North America, France legislated the thirty-five-hour work week in 1998, and industry-employee-negotiated thirty-five-hour work weeks are common elsewhere in Europe. The vacation, another form of leisure as free and unobligated time, is also largely a product of the Industrial Revolution. Two weeks of vacation per year is typical in the United States. Chinese workers currently average about fifteen days of paid vacation per year, and Japanese workers twenty-five, while Europeans receive between four and six weeks per year.

How industrialization and technological change has influenced free-time availability is unresolved. In her 1991 book, *The Overworked American*, the economist Juliet Schor claimed that Americans are working longer hours since the 1960s because of employer demands coupled with employees' preference for more money rather than more free time. On the other hand, John C. Robinson and Geoffrey Godbey, in their 1997 book *Time for Life*, state that Americans have more free time than ever before, about five hours per week more than in the 1960s. The contrast between Schor's and Robinson and Godbey's results stems, at least in part, from the manner in which they gathered their data. Schor used aggregate work time estimates from the U.S. government and pollsters while Robinson and Godbey's data were based on time diaries kept by research respondents.

Leisure as Activity

The most common leisure activity for humans, both past and present, is undoubtedly resting or sleeping. The anthropologist Lauriston Sharp indicated that the Yir Yiront, an Australian Aboriginal tribe, devoted the majority of their leisure to rest:

Any leisure time the Yir Yiront might gain by using steel axes or other western tools was invested, not in



This Japanese picture scroll depicts a *bunraku* (puppet) show in the streets of Kyoto. The style of the calligraphy and brushwork suggest the scroll was made early in the Edo period (1600–1867).

“improving the conditions of life,” and certainly not in developing aesthetic activities, but in sleep, an art that they had thoroughly mastered. (1952, 82)

Socializing with family and friends surely occupied a major segment of the free time of members of early food-collecting societies. Games are ubiquitous in known human cultures, past and present, as well. Leisure in ancient Greece, albeit for male citizens, included Olympic sports, games, narrative and drama, art, debate, and contemplation. The Romans added several activities to those already practiced by the Greeks, such as gladiatorial combats, public baths, and the circus. The precursors to many modern games and sports were developed in central, south, and east Asia, such as chess (India), cards (China), and polo (Central Asia). Music, art, and poetry were popular pastimes for the elite classes in China and flourished during the Han (206 BCE–220 CE) and the Tang (618–907 CE) dynasties. Along with games, music, art, and forms of narrative, festivals provide recreation for individuals in both technologically simple and complex societies. Recreational drug use, especially alcohol, and recreational sex, including prostitution and varieties of pornography, have been common in most of human history.

In post-Roman Europe, between approximately 1000 and 1400 CE, leisure activities for nobility, clergy, freemen, serfs, and slaves were prescribed and proscribed by both secular and ecclesiastical authority. Hunting was popular with nobles but, when practiced by peasants, was often regarded as poaching and was strictly prohibited. Board games, such as chess, checkers (draughts), and backgammon were popular but gambling games, including dice and card games, were

frequently forbidden. Stylized war games in the form of tournaments were popular among upper classes while feasts, ball games, bull and bear baiting, dogfighting, and cockfighting were enjoyed by commoners. Alcohol lubricated much of leisure, especially for males.

Many entertainments, including music, minstrel shows, the circus, and theater became popular during the first half of the eighteenth century while participatory and professional sports flourished during the second half of the century. Increased financial means for workers combined with new modes of transportation, such as the train and streetcar, changed leisure in Europe and North America in the second half of the nineteenth century. These ushered in a commercialization of leisure, moving it from the home or local gathering places, such as the church or the pub, to the countryside, amusement parks, and resorts. The development of the automobile during the first third of the twentieth century further freed leisure seekers. The expansion of mass media such as newspapers, books, and magazines in the late nineteenth and early twentieth centuries, the introduction of movies in the early part of the twentieth century and commercial radio in the early 1920s, and the rapid development of television in the post-World War II era individualized and commercialized the leisure landscape. This trend has continued with the introduction of the personal computer in the late 1970s, publicly available services on the Internet in the mid-1980s, and the World Wide Web in the early 1990s. Computer games and Internet use, involving activities from shopping to pornography, are now both major leisure providers in the developed world and in urban areas in the developing world.



Women at a park in Beijing in 2003 participate in a group dance/exercise each day.

Leisure as a State of Mind

The meaning of leisure has depended on social status, broadly defined, in human groups throughout history. In technologically simple societies, and even in sedentary peasant communities, the most basic social divisions between males and females and adults and non-adults differentiate leisure in terms of time, activities, and meaning. Prior to industrialization and the institution of clock time, the separation, and therefore the meaning, of work and leisure was less distinct. For men, hunting was often arduous but also afforded excitement and companionship with peers. For women, food gathering and some kinds of chores included socializing with family and friends.

European societies largely define leisure in the context of events and eras such as the Renaissance, the Reformation, the Industrial Revolution, and, in more recent years, the rise of materialism and consumerism. The Renaissance, with beginnings in fourteenth-century Florence, Italy, was, in many ways, in contrast to Catholic theocracy. The Renaissance notion of secular humanism held that human beings, and their works, have intrinsic value, apart from their relationship to God. Hence, art, music, literature, and the events of daily life are important and meaningful, in and of themselves.

Reformation doctrine, under the influence of the theologian John Calvin, held that righteousness,

sobriety, faithfulness, self-discipline, and hard work were evidence of being in a state of grace while consumption and pleasure seeking were not. Hence, leisure is a lure to sin and a threat to righteousness. Calvinists attempted to suppress the festival calendar, sport, gambling, dancing, drinking, and other traditional recreations of European culture. Sixteenth-century Catholicism, in reaction, also tried to purge profane elements from the lives of church members. The pagan elements of carnival mocked Lent and, in 1562, the Council of Trent denounced the festivals and drunkenness associated with saints' days.

In England, under the influence of the Sabbatarian movement of the late sixteenth to mid-seventeenth centuries, saints' days were abolished, although Sunday was kept as a day of rest. "Blue laws" were introduced in England and America that prohibited numerous leisure activities, such as theater, as well as commercial transactions on Sundays. Remnants of blue laws, such as "dry" (i.e., no alcoholic beverages sold) townships or counties in some states in the United States, or the prohibition of certain kinds of commercial transactions (e.g., no Sunday auto sales in some states) still exist. While the Reformation and subsequent religious thought may have influenced leisure meanings, in many cases, traditional leisure pursuits simply were simply kept



out of the public eye as with the use of alcohol under Prohibition in the United States between 1920 and 1933.

Outlook for the Twenty-First Century

Changes in leisure since the Industrial Revolution have been driven by the combined influences of technological change, demographic change, and economic change. The digital video disk (DVD), the cell phone, now with the capacity to take and send photos, MP3 music players, and even space station vacations are recent examples of technological influences on leisure. While young people comprise major segments of populations in developing countries, the populations of developed nations are aging. Both the kinds of leisure available and the economic support for them must account for these differences. Leisure in many parts of the world will also be influenced by the rising status and economic power of women. With many national and local economies around the world depending on tourism, leisure travel will increase despite the recent threats imposed by terrorism. The same forces that determined leisure time, leisure activities, and leisure meanings in the past will continue to do so in the twenty-first century.

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See also Dance and Military Drill; Festivals; Games and Play; Modernity; Music—Overview; Sports

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Lenin, Vladimir Ilyich

(1870–1924)

RUSSIAN REVOLUTIONARY LEADER

Vladimir Ilyich Lenin was the most important revolutionary of the twentieth century. His interpretations of Marxism led to the rise of Communism in the former Russian Empire and elsewhere. Lenin's experiment with socialism from 1918 to 1921, centralized economic institutions, party and state bureaucracies, and mechanisms of control influenced Stalin. The Soviet Union, founded in 1922, became a model for similar regimes.

Vladimir Ilyich Ulyanov, who under the pseudonym “Lenin” would become the most important revolutionary of the twentieth century, carried through the first enduring socialist revolution in world history in 1917. The establishment of a militant socialist regime in the vast territory of the former Russian Empire threatened all existing political and social systems. Lenin's successful combination of doctrinal nimbleness and tactical flexibility produced Leninism—the triumph of politics over spontaneous economic and social forces and the formation of a militant, party-led state controlled by a single leader. This became the foundation for the regime of Soviet leader Joseph Stalin as well as its offshoots and imitators during the Cold War.

Family Background

Vladimir Ilyich Ulyanov (1870–1924) was born in Simbirsk, Russia, to parents of multiethnic background. He was German, Swedish, and Jewish on his mother's side and Central Asian and possibly Russian on his father's. Two deaths in his family disrupted a fairly privileged and outwardly conventional childhood and

adolescence. His father, Ilya Nikolaevich Ulyanov, director of public schools in Simbirsk Province, died in January 1886. Alexander, Lenin's brilliant older brother, was hanged in May 1887 for his role in a terrorist conspiracy to assassinate Czar Alexander III. Vladimir was expelled from Kazan University in 1887, but received a law degree as an external student from St. Petersburg University in 1891. He quickly abandoned the law and instead became a dedicated follower of the German thinkers Karl Marx (1818–1883) and Friedrich Engels (1820–1895).

Revolutionary Career

Lenin departed from Marxian theory, which in its most basic form posited that the revolutionary consciousness of the industrial proletariat would spontaneously produce socialist revolutions against capitalism. Lenin, however, believed that by themselves the workers could not achieve socialist consciousness. The working class in his view needed to be organized by a party led by scientific socialists. In 1903, Lenin's position split Russia's Social Democratic Party, but he won ground against the opposing Menshevik faction of that party and maintained personal control over his Bolshevik faction between 1903 and 1917. Lenin continually amended his original position to exploit revolutionary opportunities, and his tracts had vast influence.

Like other Russian revolutionary leaders in the early twentieth century, Lenin lived in exile for long periods of time (in Siberia from 1897 to 1900 and in western Europe for most of the years between 1900 and 1917). With German support, he returned to Russia after the collapse of the Romanov regime

A lie told often enough becomes the truth. • Vladimir Ilyich Lenin (1870–1924)

in March 1917. Lenin believed that World War I (1914–1918) was a symptom of capitalism’s final crisis and that a Russian socialist revolution would spark similar revolutions in Europe. Faced with the dual power of Russia’s Provisional Government and soviets (mainly urban-based revolutionary councils), Lenin called for all power to go to the soviets. In November 1917, Lenin’s Bolsheviks, led by Communist leader Leon Trotsky under the aegis of the Petrograd Soviet, overthrew the Provisional Government. At the Second Congress of Soviets, which was convened during the assault on the Provisional Government, Lenin established the de facto dictatorship of his party. He became the chair of the Council of People’s Commissars, and he retained that post as well as leadership of his party (renamed the Communist Party in 1918) until his incapacitation in 1923.

In Power

In January 1918, Lenin ordered the dissolution of the democratically elected Constituent Assembly. A civil war followed, but Lenin’s astute policies, his opponents’ obtuseness, and a great deal of luck saved the revolutionary regime. Distribution of land to the peasants and control of the central industrial region had given the new regime a basic advantage. After withdrawal from World War I followed by the Treaty of Brest Litovsk with the Central Powers (Austria-Hungary, Bulgaria, Germany, and Turkey) in March 1918, Lenin dealt with his domestic opponents. The defeat of the Central Powers allowed him to recoup most of the losses incurred at Brest Litovsk; war weariness and mutinous troops weakened the ability of Lenin’s foreign opponents to intervene in the civil war. To Lenin’s disappointment, however, European troop mutinies and minor outbreaks of soviets did not yield socialist revolutions in Europe. Lenin’s Third International of 1919, an association of international Communist parties later called the Comintern, became an instrument of Soviet policy and a stimulus to right-wing reaction in Europe. In recognition of the power of nationalism, Lenin created in 1922 the framework for a multinational federation, the Union

of Soviet Socialist Republics, or Soviet Union. In the long run, however, nationalism led to the collapse of the Soviet Union in 1991.

Lenin’s Last Experiments

During the civil war of 1918–1921, Lenin’s regime experimented with a fully socialized and centralized urban-industrial economy called “War Communism.” It destroyed the money economy and stimulated the underground markets that became a chronic feature of the Soviet command economy. Grain requisitioning alienated the peasants. At the end of the war, the industrial sector lay in ruins, urban centers were depopulated, the peasantry suffered devastating famine, and the Communist Party faced mutinous sailors and urban strikes. Lenin had by that time established a strong party-based bureaucracy, the large Red Army, and a powerful political police (*Cheka*). During 1918–1922, Lenin defeated not only the Whites (anti-Communist forces), but also suppressed the Russian Orthodox Church; other socialist parties; Trotsky’s faction; the syndicalist wing of his party that desired worker control of the economy; a large-scale peasant rebellion; and the mutiny of Russia’s Kronstadt naval base. At that point, Lenin abandoned War Communism and its policy of grain requisitioning and created a system of taxation and markets in which the peasants might trade their surplus. The New Economic Policy (NEP) of 1921 restored a money economy and revived urban retail trade and small industrial enterprises. Lenin encouraged investment by foreign capitalists, with minor results. He left to his successors the task of modernizing the economy. Although NEP created a framework for exchange between the urban-industrial and village-agricultural sectors, it did not solve the problem of backward, small-scale peasant agriculture. Lenin was still rethinking Russia’s path to socialism when he suffered a series of strokes from 1922 to 1924, the fatal one in January 1924. In 1922, Lenin supported Stalin’s promotion to the post of general secretary of the Central Committee of the Communist Party, which would ensure Stalin’s rise to power after Lenin’s death.



Vladimir Ilyich Lenin, circa 1920. Lenin combined doctrinal nimbleness and tactical flexibility to form a militant, party-led state under his control. Library of Congress.

The period after World War I showed that nationalism remained more powerful than international socialism. The international situation did not allow the Communists during Lenin's lifetime to export their

revolution, but Lenin's abandoned experiment with War Communism from 1918 to 1921 became the basic economic model for Stalin's and other Communist regimes. Lenin might have done things differently than Stalin had he lived, but Stalin quite rightly pointed to Lenin as his mentor. Political control trumped everything else, and personal control eventually subordinated the leadership of the party-state to the whims of dictators. The post-Stalin Soviet leaders rejected Stalin's extreme methods and tried to revive Lenin's NEP. Lenin remained the Soviet regime's basic source of legitimacy until its collapse in 1991.

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See also Marxism; Revolution—Russia; Russian Soviet Empire

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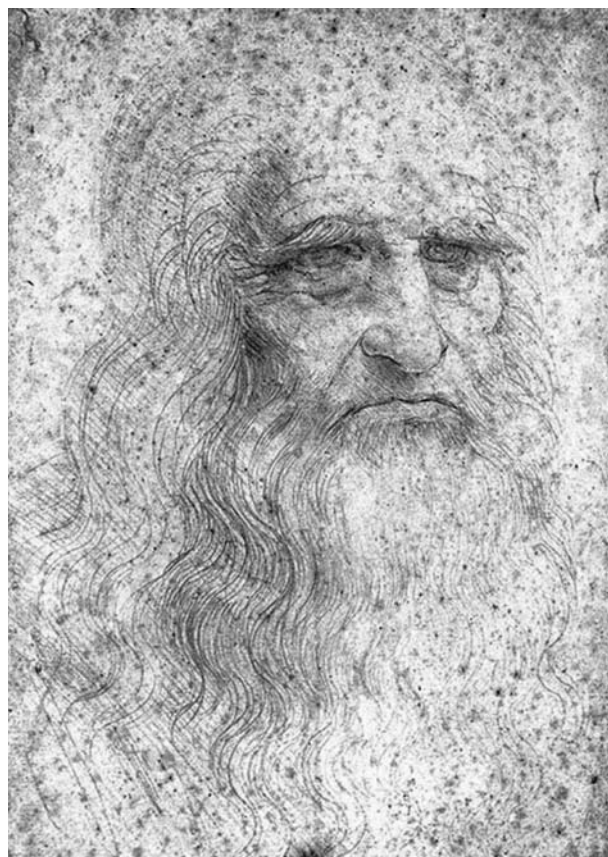
Leonardo da Vinci, one of the universal geniuses of Western history, made contributions to art, mathematics, and science that anticipated the ideas and inventions of future centuries. Most significantly for world history, Leonardo's curiosity and his belief in the power of observation spurred him to investigate and record the forces that drive the natural universe and define man's place within it.

A true "Renaissance man," Leonardo da Vinci achieved renown in painting, architecture, engineering, science, and anatomy. He was born in the Tuscan countryside, the illegitimate son of a notary, and trained in the Florentine workshop of Andrea del Verrocchio (1435–1488). By 1472 he was recorded as member of the guild of painters in his own right, and evidence of his growing reputation began to build. Works from this early period include the *Adoration of the Magi* (1481–1482), a painting left unfinished, as were so many of Leonardo's projects.

In 1482 or 1483 Leonardo left Florence for Milan to serve in the court of Duke Lodovico Sforza (1452–1508). His duties at the court were wide and included not only painting, sculpture, and architecture, but also military and civil engineering, stage design, and interior decoration. The life of a courtier allowed Leonardo time to pursue his interests in the natural world and mathematics. His notebooks, kept throughout his life and written in mirror writing, reflect his wide-ranging interests. Studies of human anatomy, wind and water, plants and animals, machines, and optics occupied his restless mind. Heavily illustrated, these notebooks constitute a document of

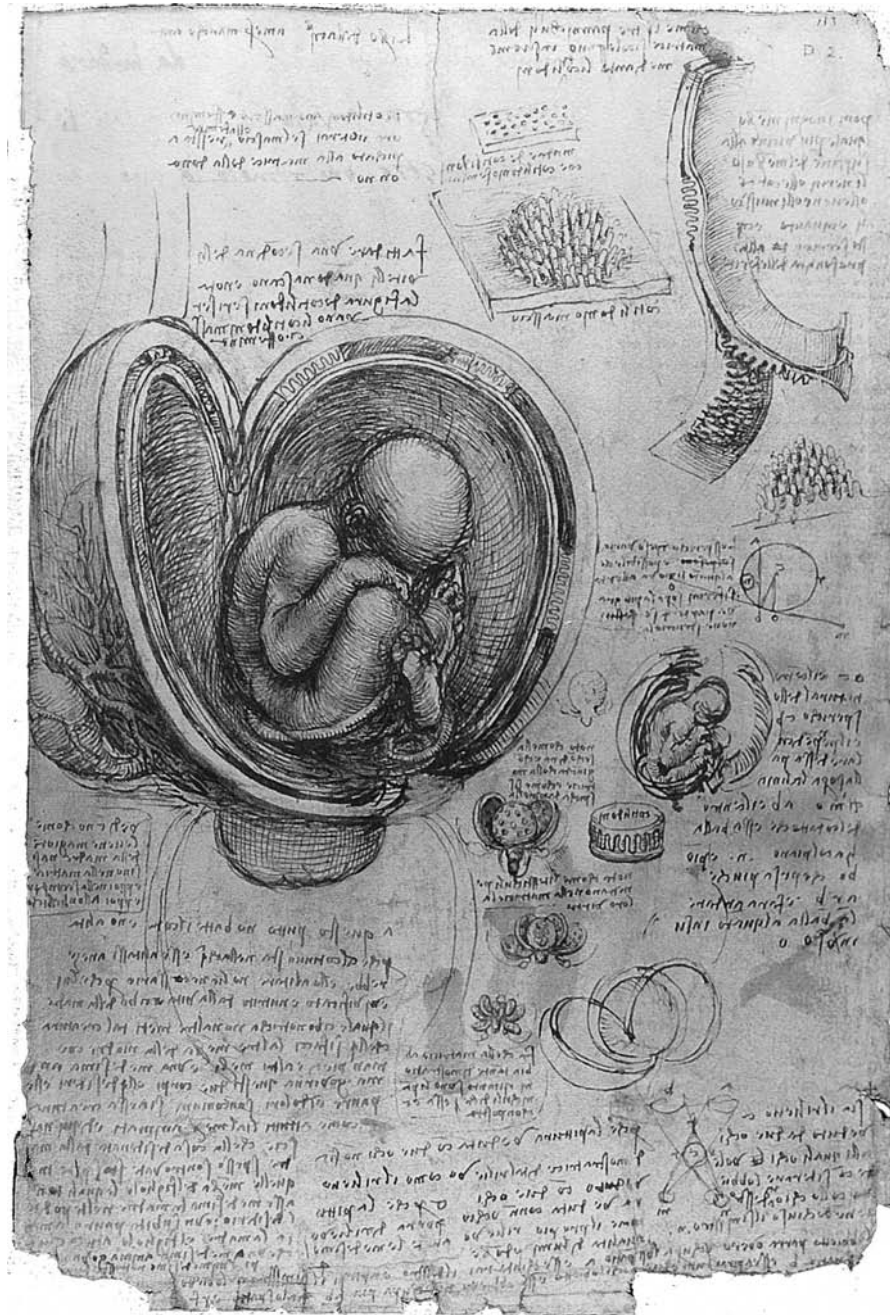
Leonardo's curiosity and his ingenious investigation of mysteries such as flight.

In addition to creating some of his most famous paintings during this period—for example, *The Last Supper* (1495–1497) in Santa Maria delle Grazie—Leonardo worked to fulfill the commissions provided by his master, such as an enormous bronze horse honoring Lodovico's father, Francesco



Leonardo da Vinci, *Self-portrait*. National Gallery, Turin, Italy.

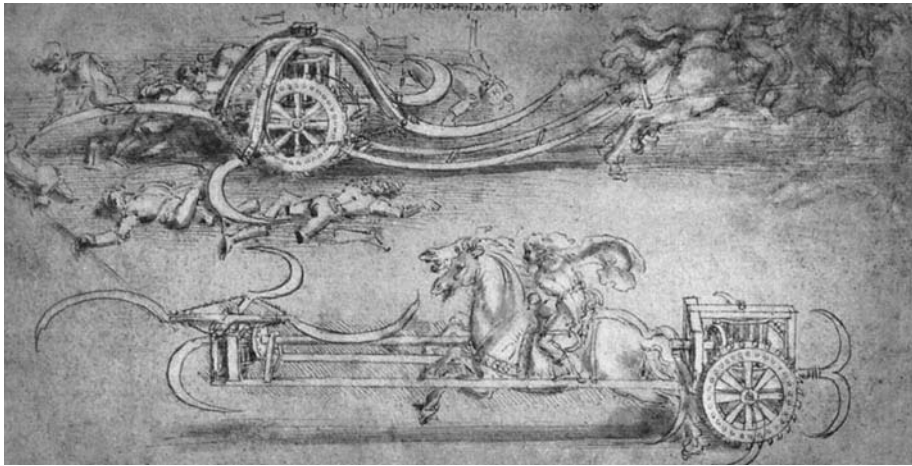
Anyone who conducts an argument by appealing to authority is not using his intelligence; he is just using his memory. • Leonardo da Vinci (1452–1519)



Leonardo's study of a fetus in the womb (c. 1510). The artist's notebooks document his curiosity and his ingenious investigation of mysteries such as flight. Royal Library, Windsor Castle. Photo of notebook by Luc Viatour.

Sforza. Although Leonardo managed to produce a clay model, the horse was never cast; Milan fell to King Louis XII of France in 1499, and Leonardo fled the city.

He accepted in 1502 a position as military engineer for the infamous Cesare Borgia (c. 1475–1507), but his hopes for Borgia patronage did not fully materialize, and Leonardo returned to Florence. There



Leonardo da Vinci, *Assault Chariot with Scythes* (n.d.). Charcoal drawing. National Gallery, Turin.

he perfected his *sfumato* style (subtly shaded figures blending into the composition) in his *Virgin, Child and St Anne* (begun in 1502 but not completed until 1516), and attempted a new fresco technique for *The Battle of Anghiari* (1502–1503), commissioned for the Hall of the Great Council, the central deliberative chamber of the Florentine Republic. Unfortunately, the work is altogether lost as his experimental technique failed: the plaster did not dry evenly and the paint did not adhere.

Leonardo's second residence in Florence was consequently not very productive, although he did begin the portrait that would become perhaps the most famous painting in the world, the *Mona Lisa* (1503–1506). Returning to Milan in 1508, Leonardo resumed his responsibilities at court, but this time for the French, who were masters of the city until 1512, when the Sforza dynasty briefly returned. Again, most of his artistic projects were never carried to fruition (an exception is his *Virgin of the Rocks*, 1503–1506), in part because of his growing interest in scientific pursuits, especially anatomy.

In 1513 Leonardo set out for Rome. He served the Medici family, who had returned as rulers of Florence in 1512, including the head of the family, Pope Leo X. It is probable that Leonardo accompanied Leo to Bologna to meet with King Francis I of France. The young king recognized Leonardo's genius and convinced him to come to France in late 1516 or 1517, where Leonardo was presented with a small chateau at Cloux (Clos-Lucé), near the king's residence at Amboise. Leonardo continued his theoretical work and engaged in specific commissions for Francis, including

designs for elaborate entertainments and grand royal palaces (which were never built). He also completed some of the unfinished paintings he had brought with



Leonardo da Vinci. *Virgin of the Rocks* (1506). Oil on wood. National Gallery, London.



Leonardo da Vinci, *Last Supper* (1498). Fresco. “Restorations” made to Leonardo’s frescos over the years often obscured the artist’s original intention. In 1997 scientific treatment to the *Last Supper* revealed that a platter on the table, long thought to contain bread, actually held grilled eel and orange slices. Judeo-Christian iconography provides no evidence that eels were served at religious feasts, but the dish was a popular delicacy during Renaissance Italy.

him. Leonardo’s health had already begun to decline, perhaps the result of a stroke; in August 1519 he was dead, and was buried in Amboise.

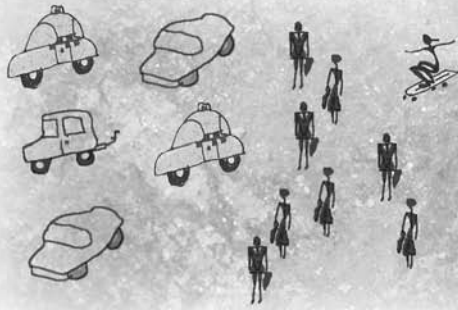
The contribution of Leonardo to the culture of the West was enormous. His wide-ranging genius united many aspects of technical and creative skill (such as designs for a parachute and flying machines) to establish new heights of High Renaissance art; indeed, the art historian Giorgio Vasari (1511–1574) saw in Leonardo the moment when the ancients were at last surpassed. Most significantly for world history, Leonardo believed in the power of human observation. His curiosity about nature and the world spurred him to investigate and record the forces that drive the natural universe and define man’s place within it.

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See also Art—Europe; Renaissance

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Letters and Correspondence

From its proliferation in the second millennium BCE, when paper-like materials made written communication more feasible, correspondence served both a political and a socioeconomic function, asserting authority but also representing personal emotions and attitudes of the author. As the world becomes increasingly interconnected via technologies, written communication continues to change both in speed and fluency.

Correspondence, the process by which people communicate over distance, is intricately connected to the technology of writing, which emerged 5,000 to 7,000 years ago. Written correspondence marked a transition from oral communication as civilizations became more complex and permanent records of transactions became increasingly necessary.

Political and Social Functions

Writing systems existed by around 3000 BCE, but mobile written communication only became practical in roughly 1200 BCE when papyrus, bamboo, silk, and other types of paper-like materials replaced bone, shells, and stone, most of which were controlled by elites.

The Chinese development of paper by the second century CE facilitated communication for commoners, especially for sending ritual messages venerating familial ancestors. Because paper was cheaper than silk or bamboo, more people could write letters, and its function expanded beyond a merely economic or political role. Outside China, correspondence continued

to be written on more expensive material such as parchment, which increasingly replaced papyrus after the eighth century CE. In Mesoamerica, correspondence, also written on animal hides, often showed the genealogies of dynasties, the boundaries of power, and social contracts. Globally, then, technological changes created practical and mobile mechanisms of communication across long distances.

Before this, official correspondence was the primary form of written communication in societies. Thus, the political form of correspondence preceded the social function usually ascribed to letters, serving as a way for leaders to correspond with their subjects by delegating laws and responsibilities. But it also served as a means of diplomatic exchange to solidify alliances, establish economic contact, or deal with conflicts.

Correspondence and Cultural Contact

Another important function of correspondence is the exchange of ideas and knowledge across cultural boundaries. The Islamic world, for example, maintained communication throughout the vast kingdoms through the narratives of travelers like Ibn Battuta (1304–1368 or 1369 CE), who discussed his encounters with Muslim communities in Africa. Ibn Battuta's travels, like Marco Polo's (1254–1324 CE) to China, provided readers with cultural descriptions of other regions, and were important elements of cultural contact in a growing world network.

In addition, the spread of paper from China to Southwest Asia to Europe in the first millennium CE further transformed the nature of communication

The hour of my death draweth fast on, and my case being such, the tender love I owe you forceth me, with a few words, to put you in remembrance of the health and safeguard of your soul . . . • **Catherine of Aragon (1485–1586), letter to Henry VIII**

between peoples. As printing became more mechanized, rapid diffusion of texts enabled writers to reach larger audiences. The development of the newspaper and political pamphlet, both forms of public correspondence, was only possible because of the emergence of Chinese block printing during the Tang dynasty (618–907 CE), and the subsequent emergence of the printing press in Europe around 1450 CE. Once people gained access to public forums, letters and pamphlets encouraged political and social confrontation. As an example, Martin Luther (1483–1546 CE) wrote public letters to the German nobility soliciting their support against papal authority; his writings challenged political and religious alliances throughout Europe and helped launch the Protestant Reformation.

Class and Gender

Throughout this period, however, letter writing remained confined to a relatively small portion of any given population, though the changing technologies incorporated more classes of people. As early as the eleventh century CE, manuals emerged in Europe that taught people correspondence skills. By the eighteenth century, autodidactic manuals were fairly widespread and cultivated business and social writing as well as accounting skills designed to facilitate correspondence between business owners and their clientele. Similar types of manuals emerged toward the end of the Ming dynasty in China (1368–1644 CE).

Especially important in the social function of correspondence was the uniform inclusion of women. Women's roles as letter writers are occasionally described as autobiographical, but women's letters equally portrayed knowledge of political affairs, frequently listed business transactions, or subtly undercut perceived social roles. In China, the historian Ban Zhao (45–116 CE) wrote a tract for her daughters on proper feminine behavior in a patriarchal society. The family letters of the English matriarch Margaret Paston (d. 1484) reflect her belief in the importance of

letter writing as a form of power and persuasion in medieval England.

Nineteenth and Twentieth Centuries

Correspondence became more widespread in the nineteenth century as education globally became more accessible and as postage, paper, and writing utensils became less expensive. In so-called semiliterate societies, where the practice of writing maintains connections to oral traditions, letters were not so much private affairs, but very public forums of communication. For example, into the late twentieth century in the Sudan, a letter between family members was often transcribed in public; once received, someone who could read then conveyed its contents in a public space. In this way, the community kept abreast of familial issues, and oral and written traditions remained balanced. Another example is twentieth-century Polynesia, where people managed family affairs and conducted business via letters after the introduction of writing.

Finally, in regions where writing systems had been co-opted or transformed (such as the Yucatan Peninsula or South Asia), letters—both public and private—served as venues for social conflict. During the British Raj in India (1858–1947), for example, Indians vocalized their discontent with internal affairs or imperial policy through their access to public correspondence in newspapers. Thus, written correspondence served not only the elite; subordinate groups and classes utilized the same technologies to challenge the system.

Twenty-First-Century Trends

As the world becomes increasingly interconnected via technologies such as e-mail, text messages, or facsimiles, written communication continues to change both in speed and fluency. On the one hand, it is becoming increasingly democratic, with the Internet fostering instant global communication. On the other hand, it is also subject to potentially insidious

effects as seemingly very personal letters are capable of being sent to mass recipients for financial or other gain. In both cases, just as with the emergence of the first written symbols, technology continues to shape and restructure the way in which humans correspond both within and between communities.

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See also Missionaries; History, Social; Tourism; World History, Writing of

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Liberalism

The term *liberalism* has been used throughout history in political, cultural, and economic contexts to describe widely juxtaposed positions. Its etymology (derived from the Latin word *liber*, meaning “free”) leaves it further open to ambiguity. After 1945 the term *liberalism* lost whatever coherence it had garnered over time, and toward the end of the twentieth century *liberalism* became virtually a term of opprobrium.

Liberalism is probably the most elusive concept in the modern world’s repertory of political philosophy. It has been used to describe a panoply of antithetical positions, ranging from left to center to right in the political spectrum, and referring primarily for some to the economic arena, for others to the political arena, and for still others to the cultural arena. There is consequently no single correct meaning for the term, but rather a series of meanings, each of which has to be situated historically in its location and evolution.

Liberalism is etymologically derived from the Latin word *liber*, which means “free.” But free from what and from whom? Or is it rather, free to do something, and then what and to whom? For the Romans *liber* was the opposite of *servus*, therefore free from a subordinate status. As an adjective with political connotations, the term *liberal* seems to have been first used in France during the years of the Directory (the five-man legislature in the late 1790s). The historian Cruz Seaone (1968, 157) attributes the term’s first use most likely to Benjamin Constant in 1796 speaking of “liberal ideas.” The French linguist Ferdinand Brunot (1937, 660–661) starts its career in Year VIII (1797–1798) as a term opposed to “sectarian” and “Jacobin.”

Linguists and historians alike seem to agree that the adjective became a noun in Cádiz in 1810–1811, when it was applied to a group of the Spanish Cortés. A member of the Cortés, the Conde de Toreno, writing some sixty years later, says that the public described the “friends of reform” as *los liberales* (cited by Marichal 1955). J. H. Billington (1980, 554, n. 33) says this led to the creation of a *partido liberal* in 1813 (see also Cruz Seaone 1968, 158). D. J. Manning (1976, 9) claims that “the original implications of the term liberal were for the most part derogatory.” But this is not at all clear from the description of the Cortés. It comes into French and British political usage in 1819 (see Bertier de Sauvigny 1970, 155; Halévy 1949, 81, n.3), but it will be another quarter century before the Whigs become the Liberal Party.

The next stage in the story was the construction of liberalism, which defined itself as the opposite of conservatism, on the basis of what might be called a “consciousness of being modern” (Minogue 1963, 3). Liberalism always situated itself in the center of the political arena, proclaiming itself to be universalist. Sure of themselves and of the truth of this new worldview of modernity, liberals sought to propagate their views and intrude its logic within all social institutions, thereby ridding the world of the “irrational” leftovers of the past. To do this, they had to fight conservative ideologues whom they saw as obsessed with fear of “free men,” men liberated from the false idols of tradition. In other words liberals believed that progress, even though it was inevitable, could not be achieved without some human effort, without a political program. Liberal ideology was thus the belief that, in order that history follow its natural course, it was necessary to engage in conscious, continual,

intelligent reformism, in full awareness that “time was the universal friend, which would inevitably bring greater happiness to ever greater numbers” (Schapiro 1949, 13).

Liberalism as an ideology, as opposed to liberalism as a political philosophy—that is, liberalism as a metastrategy vis-à-vis the demands of popular sovereignty as opposed to liberalism as a metaphysics of the good society—was not born adult out of the head of Zeus. It was molded by multiple, often contrary, interests. To this day the term evokes quite varied resonances. There is the classic “confusion” between so-called economic and so-called political liberalism. There is also the liberalism of social behavior, sometimes called libertarianism. This *mélange*, this “confusion,” has served liberal ideology well, enabling it to secure maximal support. Liberalism started ideological life on the left of the political spectrum, or at least on the center-left. It presented itself as the opponent of the conservative thrust after 1815, and as such it was considered by conservatives to be “Jacobinical” (Rémond 1982, 16). But as liberalism gained momentum, support, and authority as an ideology, its left credentials weakened; in some respects it even gained right credentials. But its destiny was to assert that it was located in the center. It was thus conceived in the eighteenth century by Constant, who considered it “a ‘moderate’ and ‘central’ position between the two extremes of Jacobinism (or ‘anarchy’) and Monarchism (‘the fanatics’)” (Marichal 1956, 293). It was thus institutionalized in the liberal parties of the nineteenth century and celebrated by Schlesinger (1962) in the twentieth century as the “vital center.” At all these times, liberals claimed the position between the conservatives or the right, those who wanted to slow down the pace of normal change as much as possible, and those (variously called democrats, radicals, socialists, or revolutionaries) who wanted to speed it up as much as possible. In short liberals were those who wished to control the rate of change such that it occurred at what they considered to be an optimal pace.

The two emblematic figures in the development of this metastrategy were François Guizot and Jeremy Bentham. Guizot was a historian, a man of letters,

and of course a politician. Bentham was a philosopher and an advocate of concrete legislative action. In the end the eyes of both were focused on the state. Guizot defined modernity as “the substitution in government of intellectual means for material means, of ruse for force, Italian politics for feudal politics” (1985, 243; see Rosanvallon 1985, 223–230). He sought a way to mute popular sovereignty without returning to the divine right of kings. He found it by claiming the existence of an “irresistible hand” of reason progressing through history. By arguing this more political version of the Smithian “invisible hand,” Guizot could establish as a prior condition for the exercise of the right to popular sovereignty the possession of “capacity,” defined as the “faculty of acting according to reason” (Rosanvallon 1985, 91, 95). Only if suffrage were limited to those having this capacity would it be possible to have a “scientific policy” and a “rational government.” And only such a government would eliminate the triple menace of “the return of arbitrary government, the unloosing of popular passions, and social dissolution” (Rosanvallon 1985, 255–256; see also 156–158).

Guizot’s reputation was to fade, but Bentham’s reputation as Great Britain’s quintessential liberal has never ceased to be asserted. The French historian and philosopher Elie Halévy pointed out that Bentham took a starting point not too different from that of Rousseau but had it end up not with revolution but with classic liberalism:

Each individual is the best judge of his own interests. Hence we ought to eliminate all artificial barriers which traditional institutions erected between individuals, all social constraints founded upon the presumed need to protect individuals against each other and against themselves. An emancipatory philosophy very different in its inspiration and in its principles but close in many of its practical applications to the sentimental philosophy of J.-J. Rousseau. The philosophy of the rights of man would culminate, on the Continent, in the Revolution of 1848; the philosophy of the identity of interests in England in the same period in the triumph of Manchesterian free trade concepts. (Halévy 1900, iii–iv)

Liberalism is trust of the people tempered by prudence. Conservatism is distrust of the people tempered by fear. • **William E. Gladstone (1809–1898)**

On the one hand, for Bentham society was the “spontaneous product” of the wills of its individual members, and therefore “a free growth in which the state could have no part.” But at the very same time, and this is crucial for Bentham and for liberalism, society was “the creation of the legislator, the offspring of positive law.” State action was therefore perfectly legitimate, “provided the state was a democratic state and expressed the will of the greatest number” (Halévy 1950, 332).

We come here to the heart of the question. Was liberalism ever a metastrategy of antistatism, or even of the so-called night watchman state? One must distinguish between the text of laissez-faire and individual rights that constitute the public ideals of liberalism and the subtext of a metastrategy to regulate the pace of change in the modern world. Neither the Utilitarians nor subsequent versions of liberals found laissez-faire or individualism and state intervention in contradiction one to the other. In De Ruggiero's words (1959, 99) projects of legislative reform were seen to be “a necessary complement” to the principles of individualism.

In the beginning of the twentieth century, the Home University Library commissioned three short volumes, one on each of the three great ideologies: conservatism, liberalism, and socialism. In the small book on liberalism, L. T. Hobhouse summed up what he called “the heart of liberalism” as follows:

[L]iberty is no mere formula of law, or the restriction of law. There may be a tyranny of custom, a tyranny of opinion, even a tyranny of circumstance, as real as any tyranny of government and more pervasive.

[F]reedom is only one side of social life. Mutual aid is no less important than mutual forbearance, the theory of collective action no less fundamental than the theory of personal freedom. (1994, 56, 59–60)

After 1945 the term *liberalism* lost whatever coherence it had had before then. In the United States it was used to emphasize the component of reformist

action, and toward the end of the twentieth century became virtually a term of opprobrium. In Great Britain and some Commonwealth countries, it retained its quality of centrism. And in many countries of continental Europe, liberal parties emphasized economic conservatism (but were secularist).

In the 1980s a new term, *neoliberalism*, came into common vocabulary. Neoliberalism seemed to mean primarily an emphasis on laissez-faire, a distinct distancing of its advocates from any association with social reformism. It seemed indeed to be an ideology largely advocated by conservatives, albeit without the historical emphasis of conservatives on the importance of traditional authorities (and mores).

While liberalism could be considered to be the dominant ideology of the world-system in the second half of the nineteenth century and the first half of the twentieth, by the beginning of the twenty-first century, liberalism seemed to have become very much a minority point of view besieged on all sides.

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Libraries

Libraries contribute significantly to the advancement of civilization. Since humans began to record ideas and information for later recall, collections of records kept throughout the world for five thousand years, consisting of a few items or millions, have been important in preserving the memory of society. Although each period and locality is distinct, many issues of record keeping, such as preservation and classification, are the same.

Libraries are collections of graphic records, organized for accessibility and maintained for the benefit of individuals in the community they serve. Libraries generally consist of portable physical entities (books) made of durable materials that contain written and artistic notations of reasonable length. The standard unit in libraries has been called the “generic book” because through the millennia it has utilized various materials—bones, skins, clay, bamboo, papyrus, paper, magnetic tapes, and plastic—and taken many forms—tablets, rolls, codices, reels, and disks. When collections consist primarily of records of institutions and individuals that are organically related—that is, they share a common creator, subject or purpose, as opposed to isolated, random artifacts—and maintained for access because of their continuing value, they are referred to as archives. When they consist of creative texts dealing with cultural and historical themes, they are called libraries.

After human beings began to speak, the need arose to preserve orally transmitted information. Although visible marks of any kind could record some ideas, in order to transmit information reliably from one generation to another and ultimately from one culture

and era to another, a system needed to be developed whereby those marks would be conventional enough to convey complex ideas over time—that is, the marks needed to be somewhat standardized in order to be understood by others. After several centuries of experimentation with pictographic symbols and multishaped tokens and their representations, writing appeared in both Mesopotamia and Egypt sometime before about 3000 BCE.

Ancient Libraries

Early collections of a few clay tablets or papyrus rolls were likely to be primarily archival repositories, but within centuries, books that included religious, historical, literary, and scientific texts appeared and true libraries began, often in conjunction with archives. Many early library collections were housed in temples, where scribes produced and maintained them. These temple libraries were established throughout the Fertile Crescent and in Egypt, India, and China. Caretakers of these collections were faced with problems of preservation, classification, and physical arrangement.

Among the oldest library archives is the collection at Ebla, a city in northwestern Syria dating to at least the middle of the third millennium BCE, which contained more than fifteen thousand tablets, including a variety of archival records, as well as linguistic reference works, chronologies, gazetteers, manuals dealing with the physical world, and religious and literary works. Similar repositories existed at Mari in northwestern Iraq and Boghazkoy in modern Turkey. Though the physical evidence is not as abundant in Egypt, archival collections also appeared there during

this period, according to inscriptions on temple walls and surviving scrolls. While small collections were found throughout the Fertile Crescent, the library of the Assyrian Assurbanipal reached its peak in Nineveh in northern Iraq in the seventh century BCE. Although the library was buried in the destruction of the Babylonians in 612 BCE, the British excavated it in the nineteenth century and much of the collection is now in the British Museum.

Evidence exists that the Mycenaean civilization of the late second century BCE was the heir of developing library processes and technology, but it was only after about 600 BCE that Greek libraries and archival repositories become common. Focusing on epics composed much earlier, by the sixth century BCE the movement toward wider reading and collecting was well underway. In the late fourth century BCE, Hellenic civilization promoted broader inquiry and utilization of the written word, which resulted in a rising volume of both scholarly and popular works. The great Alexandrian Library in Egypt, founded about 300 BCE, became a repository for materials from all over the known world and was a center for scholarship and original research. Along with smaller libraries at Pergamon and Athens, it would continue these functions for several centuries, until its decline in the fourth to seventh centuries CE.

As heir to the Greek tradition, Rome recognized the value of the library, and through confiscated books and new copying began to build libraries of its own. The emperors Augustus, Tiberius, Vespasian, Trajan, and Hadrian established libraries in Rome in the first and second centuries CE. These collections at Rome, which typically contained separate rooms for Greek and Latin books, and similar ones in the provinces, were housed in temple-like buildings and later in public baths. They were widely used and considered symbols of civilization.

During the early centuries of the current era, the form of the book changed from the scroll (or roll) to the codex, the form of book we know today. This change in format enabled texts of greater length to be bound together as a unit, enhancing portability and ease of use. During this period, recognized

collections of writings developed, including major works of mythology, history, philosophy, and religion. (For example, the Bible of the Christians, consisting of approximately sixty-six books, written over a period of more than a millennium, assumed its form during this period and was itself a kind of library.) Christian libraries, such as the one at Caesarea in Palestine (c. 200–c. 800), provided major repositories for theological and historical writings.

The weakening of central imperial authority and barbarian threats, as well as the rise of organized Christianity and the early monastic movement, brought challenges and changes to the cultural environment of the late Roman Empire. The decentralization of control and influence encouraged local manifestations of governmental and church institutions, including libraries, which spread to the farthest reaches of the empire. After about 600, when in the Western portion of the empire the church had assumed many of the stabilizing institutions of society, scholarly efforts centered largely on preserving old texts and keeping existing learning alive by writing texts. Libraries continued to flourish at Constantinople in patriarchal and academic libraries until the fifteenth century.

In Asia, books and libraries grew in significance in the period of antiquity. The Aryans, who brought Vedic traditions to South Asia about 1500 BCE, supplanted the Harappan culture already established in the Indus Valley. They in turn provided the environment for the rise of Jainism and Buddhism in the sixth century BCE—each religious tradition also developed its own canon of religious writings. Like Judaism and Christianity, which took root in the centuries spanning the divide of the eras BCE and CE, Jainism and Buddhism had significant written literature. Their extensive texts joined a developing archival system to produce library collections maintained by individual societies. The experience of the Han dynasty in China (206 BCE–220 CE) with the expansion of Buddhism was in some ways similar to the challenge posed to the later Roman Empire by the expansion of Christianity with respect to the consolidation of governmental authority and the preservation of cultural heritage. In particular, the Han dynasty experienced

the proliferation of Buddhist texts, sometimes without official sanction. Meanwhile, Han emperors encouraged the compilation and editing of Confucian writings and a variety of other texts, including those in the arts and sciences, as well as the maintenance of such collections. The invention of paper and the extensive use of block printing in this period also expanded the production of books and increased the number of collections available to governmental and cultural institutions, and to individuals. These works were frequently copied and collections were maintained in monasteries and other protected sites. The Cave of a Thousand Buddhas near Dunhuang in Chinese Turkestan housed one such collection, which had been developed about 1035 and was discovered as recently as 1907. This famous cache of texts was collected in the years prior to the cave being sealed, about 1035, which invaders threatened. It was discovered by the British archaeologist Aurel Stein and was dispersed to several repositories in Asia and Europe. Eventually massive collections of these works were reproduced by Chinese imperial authorities for access and for preservation. Two major hand-written encyclopedias were produced—one between 1403 and 1408 (more than eleven thousand volumes) and another between 1736 and 1795 (thirty-six thousand volumes). The latter was produced in seven copies of which two are still largely extant. (The works not selected for inclusion were subsequently lost to succeeding generations.) The writings of Confucius, Buddha, and their followers were brought to Japan and Korea in the sixth and seventh centuries CE, and schools, books, and libraries soon followed.

Medieval Libraries

While the arts of publishing flourished in Asia and monks and court officials preserved materials as best they could in Europe, the rise of Islam, beginning in the seventh century, formed a link between East and West through its growing network of scholarship and commerce. The librarians and bibliographers of this period began to promote a cross-pollination of cultures, languages, and traditions.



A public library in a Spanish colonial building in Guadalajara, Mexico, in 2003.

As Muslims translated Greek and Latin manuscripts into Arabic and produced their own literature, they also soon introduced papermaking from China across their domain to Andalusian Spain. By the ninth and tenth centuries major urban centers like Baghdad and Cairo enjoyed numerous libraries—many of which were open to the public—that supported institutions of learning culture such as schools, mosques, and palaces. By searching existing collections and employing copyists and binders, Caliph al-Hakim II (961–976), for example, built an extraordinary library in Cordoba with about 400,000 volumes—the catalogue itself consumed forty-four volumes. Some scholars suggest that the intellectual activity in the great mosque in Cordoba, which attracted scholars and students from across the Near East and Western Europe, served as a catalyst for the establishment of new universities and the transmission of important knowledge from East to West—of papermaking, for example. During the twelfth and thirteenth centuries and afterward, warfare from within the Islamic regions and from invaders resulted in the decline and loss of many of



the great collections. In many cases only individual items have survived. The barbarian invasions of the Roman Empire, including Rome itself, in the fifth and sixth centuries, had different results in the East and the West. In the region governed by Constantinople (Byzantium, today Istanbul) the institutions of state and church, drawing on Greek cultural foundations, continued relatively intact until the coming of the Persian and Islamic conflicts from the middle of the first millennium. Substantial libraries remained open in the capital and smaller ones in major cities until the Fourth Crusade (1204) and the capitulation to the Turks in 1453. Though libraries were significant in the early Eastern Empire, they had declined considerably by its end. In contrast, in the early medieval period (600–800) libraries in western Europe suffered from the fragmentation of the Roman Empire that brought chaos and instability.

In the West, monastic libraries, stimulated generally by the growth of the Benedictine order and the missionary activity of Irish and Anglo-Saxon monks, began to flourish widely, so that by the time of Charlemagne (c. 742–814) the preservation of remaining classical manuscripts and current writing was assured. Most of these libraries contained fewer than several hundred volumes. Cathedral libraries, which supported schools and scriptoria, grew slowly and began to serve clergy and civil servants not associated with a cloister. Some of these schools, such as the one in Paris, were antecedents of universities that appeared in the twelfth century; others, such as Chartres and York, were not. Later, other orders joined in copying activities.

The coming of the first Western European universities resulted in the formation of libraries with broader responsibilities than those of monasteries and archival repositories. Beginning with the early models of Padua, Salerno, Bologna, Paris, Oxford, and Cambridge, universities proliferated in Europe until, by the sixteenth century, they had become symbols of regional pride. Most of these institutions had central libraries, often built up by donations and under the custody of one of the masters. (The Bodleian Library at Oxford and the library of Trinity College,

Dublin, date from the early seventeenth century.) At Oxford, Cambridge, and elsewhere, individual colleges maintained separate and independent collections that only later, if ever, were integrated into the general collection.

Until the coming of moveable-type printing in the fifteenth century, books and archives were not always easily distinguished and may have been housed together. Within fifty years of the appearance of the moveable-type printing that Johannes Gutenberg developed about 1450, the presses of Europe increased production from a trickle to a flood of new scholarship and creative works, as well as of more accessible editions of the classic works from the ancient and medieval periods. These publications, possibly 100,000 titles by 1550, were both scholarly and popular works and contributed to creating and preserving the new ideas introduced by the Renaissance. While elite collectors would prefer manuscripts and lavishly illustrated volumes for some time to come, the less expensive and more portable printed books found an enthusiastic market—for example, in libraries and with collectors who would ultimately be benefactors of libraries.

Early Modern Libraries

This new category of book collectors who established personal libraries included members of the noble and upper classes, both those with hereditary titles and those who had accumulated wealth through commerce, manufacturing, and banking. They typified the enthusiastic response of the human spirit to the new ideas and knowledge that encouraged the building of libraries. Libraries became the possession not only of the privileged segments of society, but also, eventually, of the middle classes.

Early examples of this kind of princely library include that of Matthias Corvinus, king of Hungary (1440–1490), whose magnificent collection was dispersed by the invading Turks in the early sixteenth century. The Medici family in Florence exemplifies the merchant class; among the Medici projects was its great library, now the Laurentian Library, one of the



Missions often include libraries for the benefit of the indigenous people they serve. This photo shows the impressive library building in the Serampore mission compound in India. Photo by Klaus Klostermaier.

first modern libraries to have its own building (1571). Other wealthy families competed in building library and art collections that brought them esteem. The Papal library at the Vatican, which dates its modern founding to Nicholas V and Sixtus IV in the fifteenth and sixteenth centuries, is another good example. As books became more appealing as collectors' items, the gentleman's library became a trademark of the social class. Some of these collections grew into their own institutions; others merged through sale or bequest into other collections.

In the sixteenth century, libraries were increasingly attainable by the middle class through the proliferation of popular printed reading material. Books became cheaper and more widely available, and thus were collected by more people—a trend that has accelerated to the present. Political, religious, and social groups all tried to exploit the potential for promoting their messages; the Reformation and the civil conflicts accompanying it unleashed the power of political pamphlets and books. The Lutheran Reformers promoted education and reading as a public

good that demanded public support, which made libraries even more significant. The Jesuits likewise considered a serious education, requiring books and libraries, to be essential in promoting the Catholic faith. Beginning in the early eighteenth century the Society for Propagating Christian Knowledge (SPCK) and the Society for the Propagation of the Gospel in Foreign Parts (SPG) published and distributed Protestant religious and educational materials throughout the British Empire, and through the influence of the Reverend Thomas Bray (1656–1730) they established several kinds of libraries for popular and clergy use, notably in England and the British colonies in America.

The growth of nationalism and colonialism from the sixteenth through the nineteenth centuries supported the spread of books and libraries. The voyages of the Portuguese, Spanish, French, and British explorers yielded journals, maps, and specimens that resulted in further research and study and new books to record new ideas. Royal and national libraries, as well as libraries of societies and other institutions,

collected this material, which enriched their museums and laboratories as well as their libraries. The colonialism that often followed nationalistic adventuring provided opportunities for those with an interest in books and libraries to press for translation work, literacy, education, and cultural integration. In Asia and Latin America and then later in Africa, agencies in the colonizing nation established schools and libraries as desirable institutions in their nation's colonies abroad. Like the SPG, the Jesuit missionaries provided books and libraries for the colleges they established in China, Japan, India, Mexico, Peru, and elsewhere.

As they profited from their new ventures, royal houses and noble families began to assemble library collections that served as treasure houses of books. Beyond the local nobility and regional princes, the sovereigns of the royal houses began to consolidate their bibliographical holdings so that libraries were not dispersed periodically. Thus began the royal and ducal libraries in Europe that frequently merged into royal libraries for the nation and, ultimately, national libraries. These institutions, such as those in France, Prussia, Austria, Spain, and Sweden, were destined to become some of the great national libraries of the eighteenth century and beyond. They would be joined by comparable institutions such as the British Museum-Library (now British Library) in 1753, the U.S. Library of Congress in 1800, and the Russian State Library and the National Library of China in the twentieth century. These libraries, like those of other nations, continue to hold a place of honor and responsibility as repositories of the national cultural record. They perform a functional as well as a symbolic role because they frequently lead in organizing library activities for the nations they represent.

Libraries Since the Enlightenment

The history of libraries since the Enlightenment includes not only the proliferation of national, private, and university libraries, but also the extension of access to libraries by the broader citizenry, through public and school libraries. Professionalization—first

among academic librarians in Europe and then among public librarians in North America—became increasingly important. Among the issues that concerned the profession of librarianship were diversification of clientele, specialization in resources, and management of technological change.

University and college libraries continued to multiply in Europe and North America during the Enlightenment and the nineteenth century, the growth peaking only in the late twentieth century when fewer completely new academic institutions were created. As democratic movements in education propelled more students toward higher education, the libraries of collegiate institutions had to keep pace with new subject matter, new curriculum emphases, new teaching methods, new technologies, and fresh challenges in general. The mechanization of printing in the mid-nineteenth century further increased the production of books and journals of all kinds. Beginning in Germany and spreading to the North Atlantic community and beyond, the growth of graduate and professional programs leading to advanced degrees stimulated more comprehensive collections of research materials, which in turn stimulated the increased publication of books, reports, and journals. The great American university research libraries, such as those at Harvard, Yale, Columbia, and their public counterparts at Michigan, Illinois, California at Berkeley, and elsewhere, made their advances at the turn of the nineteenth and twentieth centuries and they have continued to grow to the present. The rise of capitalism in the nineteenth century extended the possibilities for accumulating wealth. Some entrepreneurs built and supported private libraries and art collections, many of which eventually became units of the great research libraries. Some, mostly in the United States, have retained their independent status, such as the Pierpont Morgan Library in New York, the Folger Shakespeare Library in Washington, D.C., and the Huntington Library in San Marino, California. These unique research libraries are monuments to the efforts and resources of individuals.

Along with existing national libraries, private libraries, and university libraries, social libraries made



an appearance in the eighteenth century. Most common in Northern Europe and North America, they focused on a carefully selected collection that served the purposeful leisure reading of a homogeneous body of readers. Frequently these libraries required membership and dues and were open only to those who met certain qualifications. An example of this was the Library Company of Philadelphia (1731), which issued shares to a limited number of persons, who thereby underwrote the support of the collection that was available to all members. Building on a few earlier models and a long informal tradition of popular literature, these libraries were sometimes sponsored by benefactors, societies, or associations. Peaking in number and popularity in the middle of the nineteenth century, they served as a kind of transition between libraries for the elites and the public library movement that followed. Variations in names and missions are reflected in the different forms that they assumed, such as athenaeums, lyceums, literary societies, and mercantile libraries, to name a few of the more common types. They differed from circulating libraries, which were primarily commercial lending operations for profit.

Though there are isolated early examples of public funds committed to community libraries, public libraries—that is, tax-supported libraries serving the general public—made their appearance in the mid-nineteenth century, initially in Great Britain and the United States. The growth of educational opportunities, the expansion of popular reading material, the pressure for democratic institutions, pride in local cultural institutions, and philanthropy—all played a part in bringing this movement together at mid century. In Great Britain the Public Libraries Act of 1850 permitted local municipalities to gain the approval of tax ratepayers to support a library (library provision became compulsory in 1964); major public libraries were created in Birmingham, Liverpool, and Manchester. In the United States, on a state-by-state basis, beginning with New Hampshire and other New England states from 1849 to 1854, taxing authority to permit the establishment of public libraries was approved. The Boston Public Library, which opened in

1854 under this legislation, became a model of what was possible, and in the next century the idea spread from New England to the whole United States. The large city public libraries, such as those in Boston, New York, Cleveland, and Detroit, joined the older idea of the municipal reference library, common in Northern Europe, with the popular reading room of the social library.

With the establishment of the American Library Association in 1876 and its British counterpart a year later, the new public libraries began to organize on a national and state basis to ensure that appropriate legislation was passed to support them through local taxation, and state and national support. The idea spread throughout Europe and to the nations touched by European culture. In most countries public libraries became an agency of the national, provincial, or state government, whereas in the United States they are locally authorized and maintained, even if they enjoy some state or federal support and are often under the general supervision of a state library commission or a state library. The modern library movement in North America and Western Europe, embracing various types of libraries, turned its attention to the education of librarians and to the issues that librarians faced in managing their enlarging collections, such as cataloging and classification and other matters relating to processing of materials, as well as to service to the public through the provision of reference works and other information services. Melvil Dewey (1851–1931) was an influential American librarian in this formative process.

Public libraries have frequently operated in conjunction with the public school system and may rightfully claim that they are institutions of continuing education for the citizenry. Because a public library serves the community interest with public funds, its role has been debated for the past two centuries. Some have seen its collections and services as a force for social advancement and cultural improvement, whereas others have seen public libraries as enforcers of the conformity that tends to restrict resources to those who represent the mainstream culture.

School libraries, while relative latecomers as a distinct entity, have their roots in small schoolroom collections. They found their earliest expression in secondary (or high) schools that became more common in the late nineteenth century in North America and Europe.

Cooperation between children's services in public libraries and school libraries has received much discussion, with some arguing that school libraries should focus on curriculum-related material and public libraries on general and leisure reading. Emphasis on the values of reading and the intellectual stimulation that it brings has benefited both approaches to children and youth. Standards for school libraries (or the lack thereof) adopted by governmental bodies have determined the course of school libraries, so that in some regions they are taken more seriously than in others.

Finally, there are "special" collections, which include governmental, business, association, museum, and subject-specific libraries. Though there are ancient examples of these kinds of collections, frequently integrated with archival repositories, they have proliferated since the beginning of the twentieth century. (The National Library of Medicine in Washington, D.C., is an example.) These libraries increasingly network with one another, using the latest information formats and technology. In the United States, networks are supported by the Special Libraries Association, founded in 1909, and similar bodies exist in other industrialized countries.

The Globalization of Libraries

Beginning in the mid-nineteenth century, efforts to unify the library profession began in the United States and Great Britain and then spread to Scandinavia and the rest of Europe and to societies under their cultural influence. National library associations came into being—some representing all types of libraries and others focusing on special types. During this period (1875–1925) world's fairs and convocations on both sides of the Atlantic provided opportunities for librarians from various countries to gather to discuss common practices, problems, and challenges, including

cooperation and the use of newer technologies. The beginning of what would be the International Federation of Library Associations (IFLA) in 1927, following an international conference in Rome, brought library leaders together and led to the promise of cooperation in matters of mutual interest, such as cataloging standards, interlibrary borrowing and lending, access to materials, disaster relief, and the stimulation of library development.

As the tensions of World War II, the Cold War, the independence struggles of the 1960s, and the post-Soviet period overshadowed national and local issues, international linkages and networking proved significant in preserving communication among librarians throughout the world. Cooperation with UNESCO, the major national libraries of the world, and the leading library associations enabled IFLA to become an effective forum for global librarianship. Today nearly every nation is represented in the several thousands of associations and institutions whose members attend annual conferences that convene around the world. The principal national libraries along with other major research libraries contribute significant resources and leadership to international cooperation initiatives.

Beginning about the time of World War II the new discipline of information science became important for libraries and librarianship. This field sought to study the properties of information—its creation, organization, use, preservation, and effects. In the last decades of the twentieth century, information technology—including digital catalogs, digital libraries, and the World Wide Web—became commonplace in the libraries of the industrialized world.

Thus, as the twentieth-first century begins, librarians everywhere are bound more closely than ever through their associations and electronic technologies and are better able to provide universal service to their patrons. The role of libraries as depositories of physical materials has broadened to connect users with a variety of information formats. Although libraries span the spectrum from the largest national institutions to the smallest village collections—from specialized research materials to the most popular items to read, view, or

hear—for millions of patrons around the world, they still serve as intermediaries between the creators and the consumers of ideas and information.

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See also Dictionaries and Encyclopedias; Information Storage and Recovery; Technology—Computer

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Abraham Lincoln, a lawyer and politician noted early on for his integrity and graceful rhetoric, was president of the United States during the U.S. Civil War; he is credited with saving the Union and freeing the slaves. After his assassination in 1865 his role was mythologized and remains controversial for those who see his Emancipation Proclamation as a failure and criticize his active support for resettlement of slaves in Africa.

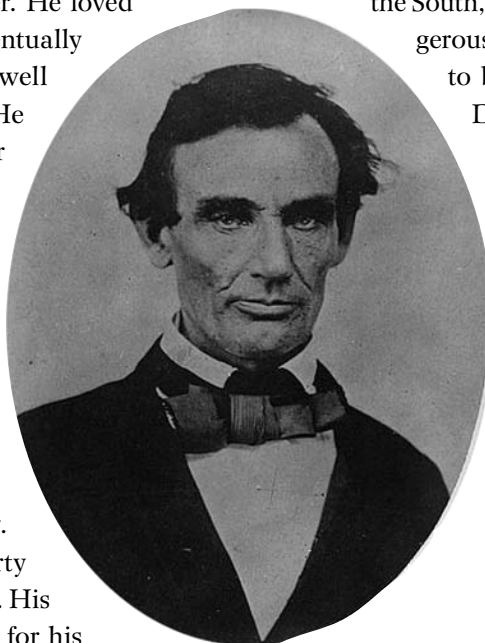
Abraham Lincoln, as U.S. president during the American Civil War, is renowned for his role in freeing the slaves and saving the Union. He was born 12 February 1809, in a log cabin in Kentucky. His family moved several times, eventually settling in Illinois. Lincoln had little formal schooling; he was taught to read by his stepmother. He loved books, read for the bar, and eventually became a successful lawyer, well known for personal integrity. He married Mary Todd, the daughter of a slave-owner in Kentucky.

By 1832 Lincoln developed an interest in politics and served in the state legislature and in the United States Congress. He allied himself with the Whig Party, which distrusted what it perceived as a growing slave power in the South that corrupted the cause of democracy. Lincoln joined the Republican Party shortly after its founding in 1854. His reputation both as a lawyer and for his

personal integrity made him an obvious choice to challenge the incumbent Democratic senator from Illinois, Stephen A. Douglas. Their campaign centered on a series of debates over the extension of slavery into the territories that caught the attention of the entire nation. Newspapers printed the speeches verbatim. In the end the Democrat-dominated Illinois senate reelected Douglas, senators being elected by the state legislature rather than by popular vote at the time.

The losing senatorial campaign propelled Lincoln to the Republican nomination for president in 1860. Lincoln won the election, though with only a plurality of popular votes, from the northern tier of states. Many considered the Republicans too radical; most in the party, like Lincoln, were not abolitionists, but were opposed to the spread of slavery. Yet for many in

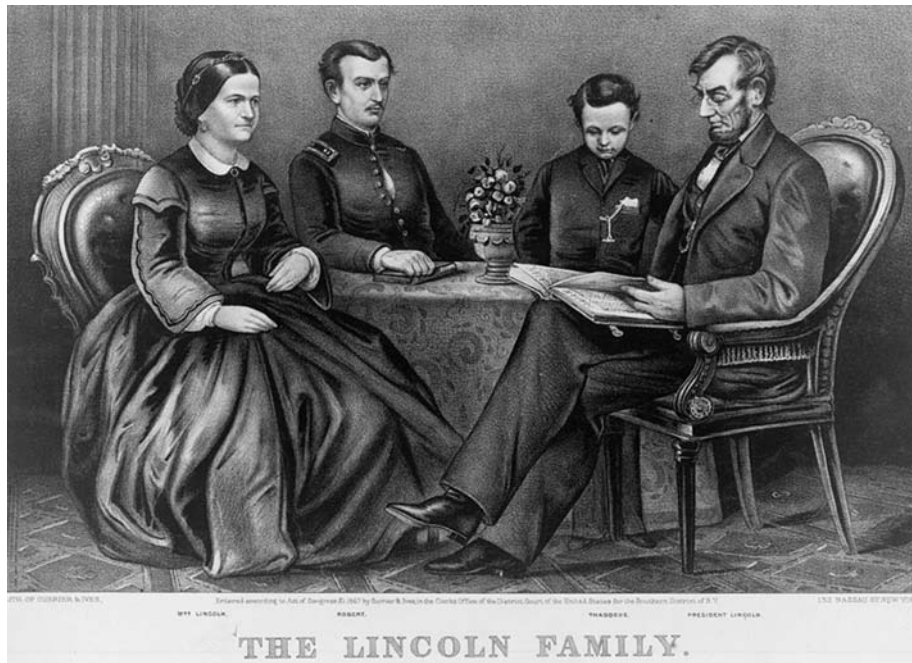
the South, Lincoln was seen as especially dangerous, which prompted Southern states to begin to secede from the union in December 1860. In spite of calls for him to intervene, Lincoln remained silent, thinking that it would be imprudent to act before his inauguration the following March. By then, however, eleven states



Calvin Johnson's ambrotype portrait of Abraham Lincoln in Pittsfield, Illinois, was taken on 1 October 1858, two weeks before the final Lincoln-Douglas debate in Lincoln's unsuccessful bid for the Senate. National Archives.

I am a firm believer in the people. If given the truth, they can be depended upon to meet any national crises. The great point is to bring them the real facts.

• Abraham Lincoln (1809–1865)



This Currier and Ives lithograph of Abraham Lincoln and his family was produced two years after the president's assassination as part of Lincoln memorabilia. National Archives.

had seceded and adopted a new constitution creating a Confederacy.

On 12 April 1861, the Civil War began when troops of the newly formed Confederacy fired on Federal troops attempting to resupply Fort Sumter, in Charleston harbor. Scholars disagree over responsibility for that event: Lincoln for ordering the fort resupplied, or the South for firing.

Early in the war, which both sides thought would be short, Lincoln had widespread popular support. He had early difficulties finding a general who could win. Frustrated by generals who lacked offensive drive and tactical knowledge, Lincoln resorted to reading everything he could about military tactics. Eventually, he settled on Ulysses S. Grant.

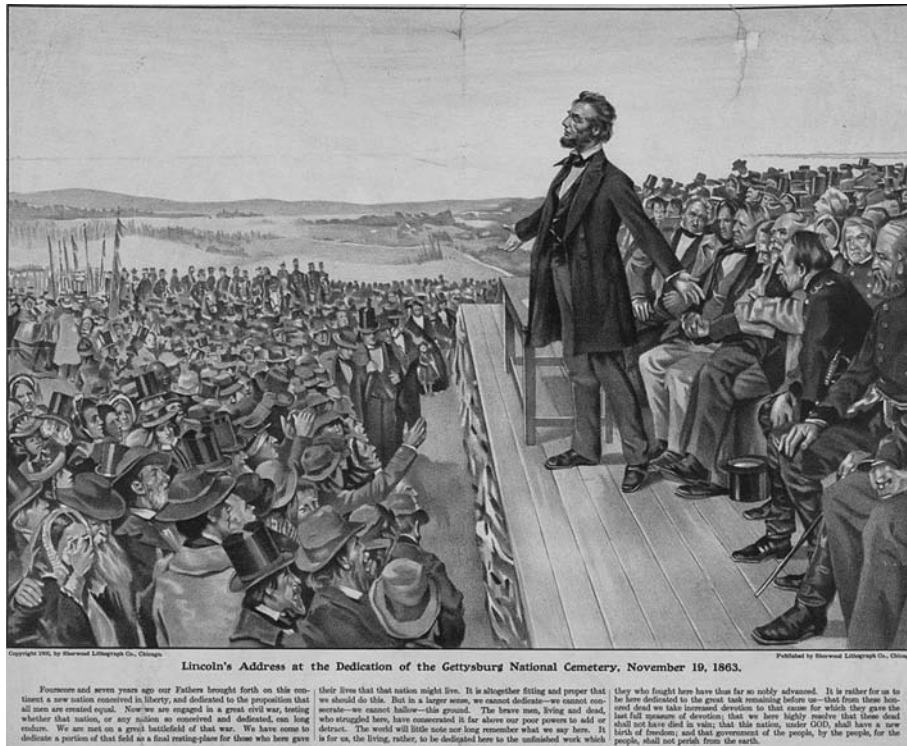
As the war dragged on, he faced increasing criticism domestically and even within his own cabinet. He responded by suspending the writ of habeas corpus, arresting and jailing those deemed a threat, and closing Democratic newspapers that criticized the war effort. Lincoln's justification for those actions was that they were necessary to preserve the Union.

Internationally, European nations seemed poised to intervene on the side of the South. Partially in

response, and following a Northern victory at Antietam, Lincoln issued the Emancipation Proclamation, which declared that slaves would be freed in states still in rebellion on 1 January 1863. Critics noted that no one was actually freed. But the proclamation gave new purpose to the war, deterred foreign intervention, and gave hope to those in slavery.

As the war continued, Lincoln's supporters feared that he could not be reelected. The Democrats nominated General George McClellan, whom Lincoln had dismissed. The fall of Atlanta in September 1864 restored confidence to the nation and brought a second term for Lincoln. With that election success, Lincoln pressed for the Thirteenth Amendment to the Constitution, which would actually free the slaves. Lincoln also turned toward the issues of Reconstruction. His proposed leniency toward the South faced substantial opposition in Congress. His pocket veto of the Wade-Davis bill in 1864 was a harbinger of difficulties to come.

At the end of the war, in April 1865, Lincoln visited the former capital of the Confederacy, Richmond, Virginia. There, witnessing his emerging iconic status, newly freed slaves pressed to touch his hand. Only days later, however, John Wilkes Booth assassinated



Lincoln addresses the crowd at the dedication of the Gettysburg National Cemetery, 19 November 1863. Sherwood Lithograph Co., circa 1905. National Archives.

Lincoln in Ford's Theater in Washington, D.C. In the national mourning that followed, those who only shortly before had been vehement political opponents turned their rhetoric to encomium.

The mythology that developed after Lincoln's assassination makes it difficult to separate fact from fiction. "Honest Abe" and "Father Abraham" are familiar sobriquets. "Great Emancipator," however, is controversial. Revisionists remind that the Emancipation Proclamation freed no one. Others accuse Lincoln of racism, pointing to his active support for resettlement in Africa. Lincoln's elegant rhetoric and political acumen did, however, hold the nation together. The hope of freedom his words engendered eventually became reality.

The mythology of Lincoln as the "Great Emancipator" reverberates throughout the world and continues to define Lincoln. This is particularly evident in Africa and Latin America. Russian texts point not only to Lincoln's antislavery stance, but also to Lincoln's heritage as a revolutionary figure. Like many

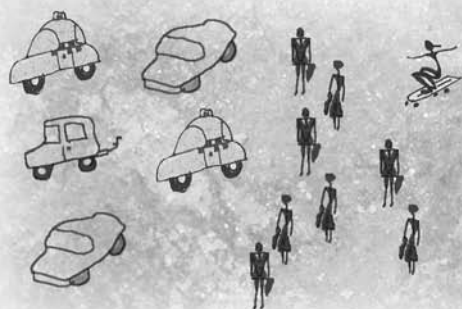
mythological figures, Lincoln rises above the reality and is interpreted by what people feel is important in their own world view.

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See also Slave Trades

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Locke, John

(1632–1704)

ENGLISH PHILOSOPHER

John Locke was a leading intellectual in late seventeenth-century England whose work in philosophy, political theory, education, and theology played a major role in shaping eighteenth-century thought.

Born in Somerset, England, John Locke was educated at Westminster School and Christ Church, Oxford, where he earned his BA degree in 1656. Although educated in a traditional arts curriculum, he became interested in medicine and science and received a medical degree from Oxford in 1675. His association with people such as the physician Thomas Sydenham and the physicist Robert Boyle brought him into contact with some of the leading scientific ideas of the day. Locke became a fellow of the newly founded Royal Society in 1668. His subsequent work in other disciplines, such as philosophy, political theory, education, and theology, would make tremendous contributions to eighteenth-century thought.

Locke was active in public affairs through his involvement with Lord Ashley, later the first earl of Shaftesbury, who was one of the most powerful leaders of the day. Locke's political fortunes waxed and waned with Ashley's from 1667 to 1683. Serving as secretary to the newly established Board of Trade and Plantations from 1673 to 1675, Locke was involved in a variety of policy debates on commercial affairs. He lived abroad for health reasons from late 1675 to spring 1679, returning to the Shaftesbury household during the Exclusion Crisis, when Protestant nobles led by Shaftesbury sought to exclude James, the Catholic brother of King Charles II, from succeeding

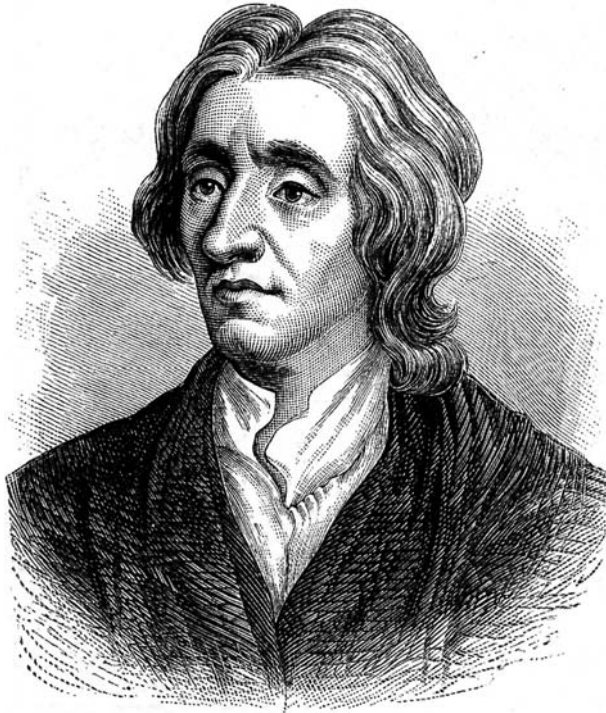
to the throne. After Shaftesbury's fall from power in 1681, Locke remained in England until the Rye House Plot (to assassinate King Charles II and his brother James) was discovered, and he fled to Holland in 1683. Locke lived in exile in Holland until William and Mary assumed the throne in 1688.

Returning to England when William and Mary assumed the throne, Locke published books in a wide range of fields that had occupied him during the 1680s. *A Letter Concerning Toleration* and *Two Treatises of Government* were published anonymously in 1689. These were followed by four editions of *An Essay Concerning Human Understanding* (1690, 1694, 1695, 1700), two additional letters on toleration (1690, 1692), selected papers on interest and money (1692, 1695), *Some Thoughts Concerning Education* (1693), *The Reasonableness of Christianity* (1695), and two *Vindications of the Reasonableness* (1695, 1697).

From 1696 to 1700 he was a commissioner on the Board of Trade and Plantations. Retiring for health reasons, Locke spent his last few years revising the *Essay* and writing commentaries on the letters of Saint Paul. Along with the philosophical essay, "The Conduct of the Understanding," these theological writings were published posthumously.

An Essay Concerning Human Understanding is one of the seminal contributions to British empiricism (a theory that all knowledge originates in experience). His primary goal was to grasp the limits of human understanding. He criticized the notion that people possess innate ideas about the world. People acquire knowledge about the world through simple and complex ideas that originate in sensation and reflection.

Every man has a property in his own person. This nobody has a right to, but himself. • John Locke (1632–1704)



John Locke's interdisciplinary work in political theory, education, and theology made tremendous contributions to eighteenth-century thought.

Locke also explored the role of language in human knowledge and tried to mark out the relationship between reason and faith. Locke's theory of ideas and his analysis of substance, primary and secondary qualities, personal identity, and the problem of free will set the terms of debate for the philosophical work of Francis Hutcheson, George Berkeley, and David Hume.

Although written initially during the Exclusion Crisis of the early 1680s, Locke's *Two Treatises* was published as a defense of the ascension of William and Mary to the English throne. Rejecting the English political writer Robert Filmer's theory of the divine right of kings, Locke argued that political power flows directly from the people. In the hypothetical state of nature regulated by God's natural law, people are free and equal beings possessing certain inalienable rights. In order to protect their lives, liberties, and properties people join into political communities.

Political power thus arises to accomplish limited goals. If political leaders extend their power too far, the people reserve the right to revolt against them. Locke's social contract theory became the hallmark of Whig ideology in Britain throughout the eighteenth century and played a major role in the founding of the United States.

Like his philosophical and political ideas, Locke's educational and theological writings were grounded in a respect for the individual and the power of reason to order human affairs. He was sensitive to the role that experience plays in the education of youth and the development of one's moral character. He viewed a church as a voluntary association of people who come to worship together in matters of faith. He argued for toleration among Protestant sects who were potentially willing to tolerate the religious opinions of the other sects. His goal was to convince Protestant groups that they had an interest in tolerating one another. Significantly, this toleration did not extend to Roman Catholics, who, Locke believed, were committed to the secular authority of the pope. Much of the British, French, and U.S. versions of the Enlightenment (a philosophic movement of the eighteenth century marked by a rejection of traditional social, religious, and political ideas and an emphasis on rationalism) can be seen as working out many of the ideas initially developed by Locke.

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See also Political Thought

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Long Cycles

Only since the nineteenth century did the idea of “progress” begin to persuade many people that they lived in a world of unidirectional development. Throughout history long cycles—whether biological, sociocultural, political, or economic—have followed an up-down-up pattern generated by factors occurring within it. The concept of cycles is itself cyclical, going out of fashion when things appear to be on the upswing.

Sociocultural and political long cycles have received much attention throughout history. The Chinese—at least until the rise of Marxist historiography in China—and the ancient Egyptians conceptualized their history in terms of dynastic cycles, as did foreign students of China and ancient Egypt. Two fourteenth-century examples illustrate that point. China’s Luo Guangzhong, in the novel *San guo zhi yan yi* (Romance of the Three Kingdoms) wrote: “the empire, long divided, must unite, long united, must divide.” In Morocco, the historian Ibn Khaldun (1332–1406) identified generational cycles in dynasties in which the achievements of the founders were buried by the third generation, thus giving rise to a new dynasty. Reference to such generational cycles appear in Ancient Greek tragedy, which was marked by the principal character’s taking a tragic course of action as a result of the actions of those in previous generations, and in alternating progressive and conservative U.S. political thought and policy, as identified by the historians Arthur M. Schlesinger and Arthur M. Schlesinger Jr.

But the concept of long cycles raises the question, how long is long? When, for example, does one generation end and another begin, since people are born all

the time? In the case of climatic cycles, the sociologist Sing Chew identifies cycles that extend for millennia and that had important social consequences, such as ages during which civilization all but disappears. Climatologists can distinguish much longer cycles still, with biological and hence social consequences. So how long is long? Aristotle observed that people have a hard time identifying the long cycles they live through because a cycle—or even one of its up or down phases—can last more than a lifetime. We can also identify shorter cycles nested within longer and these within even long ones.

Cycles versus Progress

Only since the nineteenth century did the idea of “progress” begin to persuade many people that they lived in a world of unidirectional development; it was at that point that the concept of cycles began to lose fashion. Cycles were replaced by stages or a staircase of steps leading ever upward from “traditional” society ultimately into paradise. That was the view of the philosopher G. W. F. Hegel (1770–1831), who developed the idea of a dialectic of thesis, antithesis, and (improved) synthesis; it was also the view of the political theorist Karl Marx (1818–1883), who used Hegel’s dialectic to explain how political systems developed and were replaced. Subsequent Euro-American historians, philosophers, and social scientists have followed in their path, down to the scholar Francis Fukuyama, who pronounced the end of history in 1992.

But as most of the world was left out of (or fell or was pushed backward and downward by) the Eurocentric view of stages of historical development,

cycles have come back into fashion again. That happens when things are going badly: when times are bad, people hope that they are only in a temporary downward phase of a cycle that will turn up again. When things are going well, on the other hand, they hope that good fortune will last forever, and cycles again go out of fashion. So interest in cycles is itself cyclical. Since 1967, the world economy has been in a long cyclical downswing of which (as on previous occasions) some—recently especially East Asia—have been able to take advantage to improve their position in the world economy at the expense of those most hit by the crisis of a long economic cycle, and interest in long economic cycles has mushroomed. Some, such as the economist and sociologist Joseph Schumpeter (1883–1950), believe that cycles are real and inextricable features of political life. Throughout world history, long cycles have created opportunities for social and political action on the upswing, and they have set limitations to such action on the downswing.

Relating Economic Long Cycles to Other Cycles

The Dutch economists J. van Gelderen (1891–1940) and Samuel de Wolff (1878–1960) and then the Russians Leon Trotsky (1879–1940) and Nikolai Kondratieff (1892–c. 1938) identified the phenomenon of the long economic cycle in the early years of the twentieth century. Long cycles are sometimes termed “Kondratieff’s waves” after the latter, who saw cycles of fifty to sixty years in length, about half of them expansive and the rest contractive. Strictly speaking, Kondratieff saw long swings only in prices, and mostly in the economies of single countries. Those cycles are complemented by twenty-year-long cycles, originally identified in the construction industry by and named after the economist Simon Kuznets (1901–1985). Beginning with Schumpeter in the 1930s, technological invention and (more importantly) its implementation through economic innovation have been seen as the engine that drives the cycles. Additionally, the search for both kinds of long cycles has been extended from

prices to production and income, as well as to an ever-wider world political economy.

During the present downturn—which began after the post–World War II boom came to an end—Kondratieff long cycles have been traced even farther back, to the 1700s by the economist and historian Andre Gunder Frank, and then to 930 CE starting in China by the political scientists George Modelski and William Thompson. The social scientist Joshua Goldstein related major war to long economic cycles. The sociologist Albert Bergesen related long economic cycles to cycles of colonialism; with Immanuel Wallerstein he related them also to the rise and decline of hegemonic power in the world. The sociologist Beverly Silver related long cycles to labor movement. Marta Fuentes, writing with Andre Gunder Frank, related them to other social movements, and students in a seminar at the University of Amsterdam related them to social phenomena as diverse as colonialism and philosophy. Bergesen also attributes changes in artistic style and the current fashion for postmodernism to long hegemonic and economic cycles. Modelski and Thompson however, find two Kondratieff economic cycles for each long hegemonic cycle. Yet all long cyclists still remain in a small—though growing—minority. Some economists, especially Solomos Solomou, dispute on empirical grounds the possibility of measuring such long cycles, and indeed, their very existence. Peter Grimes devoted ten years to searching for and devising ingenious measures and indices to identify worldwide Kondratieff cycles, or even waves, but was unable to find them empirically.

Very Long Cycles

Several scholars have identified even longer political economic social cycles, some with two-hundred- or three-hundred-year up and down phases, or even longer. Moreover, these long cycles are now being traced, identified, and dated back into the fourth millennium BCE with near simultaneous periods of expansion across most of Afro-Eurasia, which suggests that already then the peoples of this land-mass were part of a single world system. Expansions

were followed by subsequent long periods of crisis, such as the “dark age” between 1200 and 1000 BCE, when civilization largely died out in Anatolia, Central Asia, and North Africa, and when Moses led his people out of crisis-weakened Egypt. These were periods as well of breakdown of empires, near-continuous wars among smaller political units, and heightened authoritarianism within them. The question is whether or not the study of these earlier cycles will help us understand and act in our present and future.

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See also Economic Cycles; Progress; Time, Conceptions of

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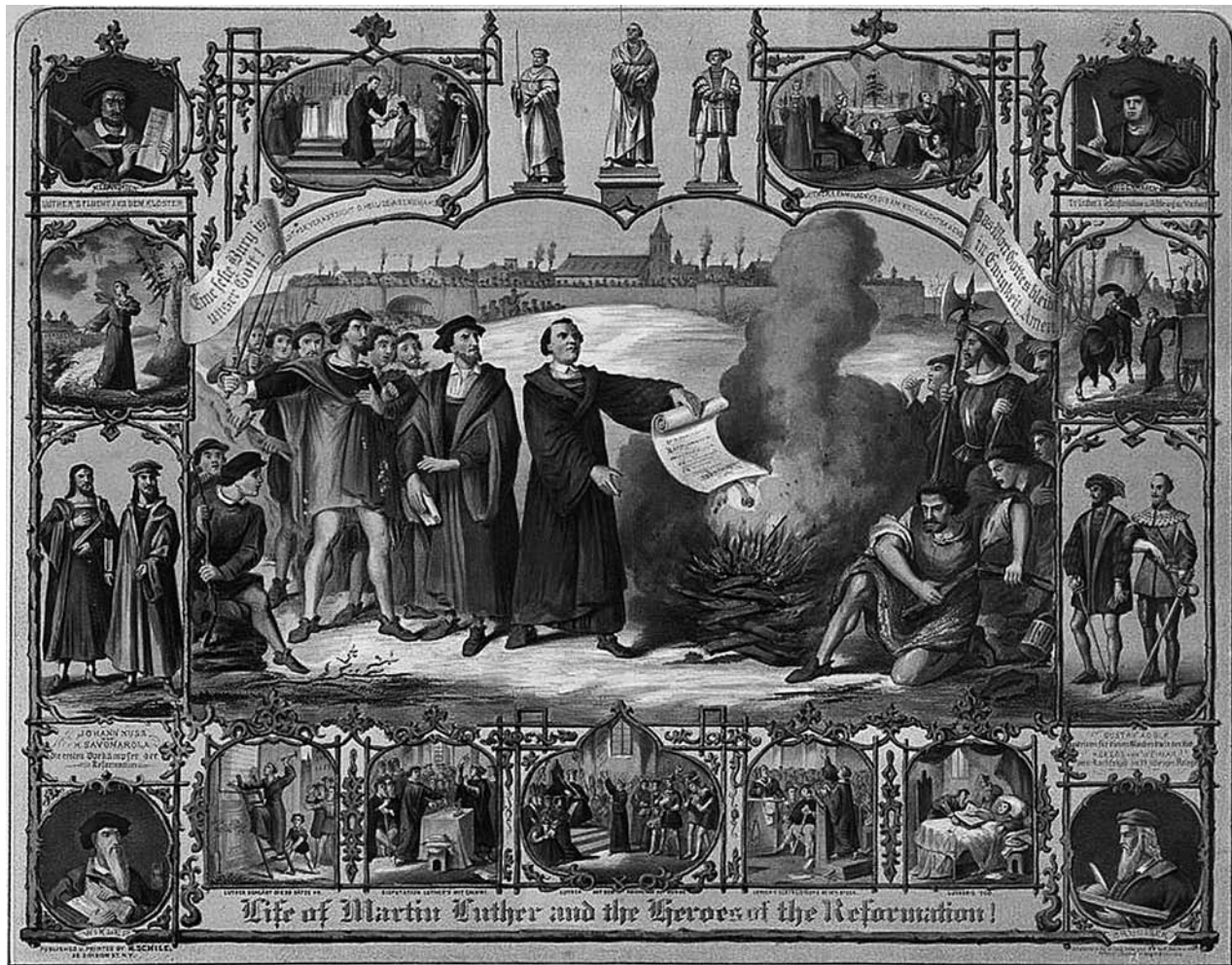
Martin Luther, the sixteenth-century leader of the Protestant Reformation, was a German monk who began to preach against the Catholic Church's doctrines and practices, especially the legitimacy of indulgences, the Mass as a representation of Christ's sacrifice, and vows of celibacy required for priests. Martin Luther initiated a movement of criticism that extended beyond the scope of his own reform efforts, especially during the Enlightenment.

Martin Luther was a German monk, teacher, and preacher whose work helped to usher in the Protestant Reformation. Luther was born in the German town of Eisleben, Saxony. He attended Erfurt University from 1501 to 1505, after which his father expected him to pursue the study of law. But Luther was strongly attracted to the order of the Augustinian Hermits in Erfurt, which he joined on 2 July 1505, in direct disobedience to his father's wishes. Luther was ordained to the priesthood in 1507 and celebrated Mass, considered to be a representation of the sacrifice of Christ. Luther moved to the Augustinian house in Wittenberg in 1510, under the authority of his superior, Johannes von Staupitz. Luther became a doctor of theology in 1512, and began to lecture on scripture.

Beginning in 1515, Luther began to experience terrors in his conscience on account of his awareness of his sinful affections, which led him to feel that he was under the wrath of God. Luther termed these experiences *Anfechtung* (trial or assault), following the language of German mystics such as Johannes Tauler. Luther at first thought that his experience of trial was meant to free him from selfishness in



Martin Luther in 1546, the year of his death.



This lithograph by H. Breul, after an original by H. Brückner, shows Luther burning the papal bull of excommunication. Vignettes from Luther's life, and portraits of reformers such as Jan Hus, Savonarola, and John Wycliffe, surround the main scene. Library of Congress.

conformity to Christ, so that he might be condemned and crucified with Christ. Since Christians ought to be willing to be punished to hell for their sins, Luther objected to the preaching of indulgences, which were a way Christians could lessen the punishment they owed for sins by means of funds given to the church. In 1517, Luther sent his Ninety-five Theses debating the legitimacy of indulgences to other universities and bishops, which were published and widely distributed very quickly, making Luther internationally famous. The pope began hearings in Rome to excommunicate Luther on the basis of the way Luther questioned the authority of the pope in the Ninety-five Theses.

In light of his growing controversy with Rome, and his own terrors of conscience, Luther's teaching

continued to develop. Luther was especially moved by Staupitz's claim in confession that Christ in his death had made the sins that terrified Luther his own, and wanted instead to give Luther his righteousness, in an event of faith that Staupitz called "the royal marriage." Luther took this idea of Staupitz's and made it central to a new understanding of faith, which some date around the year 1519, although others date it as early as 1515. After 1519, Luther began to teach that nothing a person can do could free that person from the feeling of sin and wrath in the conscience. Only Christ can do this by his death on the cross, which he offers to sinners in the preaching of Gospel. Only faith in the Gospel and trust in the work of Christ can bring peace to the terrified conscience. The Mass does not represent

Wherever the battle rages, there the loyalty of the soldier is proved; and to be steady on all the battlefield besides is mere flight and disgrace if he flinches at that one point. • **Martin Luther (1483–1546)**

the sacrifice of Christ, but offers the promise of forgiveness. When people believe the Gospel, argued Luther, they are then spontaneously led to share the burdens of their neighbors out of love, but none of this frees them from sin or makes them righteous before God. Luther outlined this teaching in several treatises written in 1520.

By 1521, Luther's refusal to recant his teaching led him to be excommunicated by the pope and placed under a ban by the Holy Roman Emperor, Charles V. However, Luther's own ruler, Frederick the Wise, Elector of Saxony, did not think that Luther received a fair hearing, and so protected him from both the pope and the emperor. In the same year, Luther concluded that monastic vows contradicted genuine Christian faith, and by 1525 Luther married a former nun, Katherine von Bora. Luther sought to reform the churches in Saxony gradually, following the lead of the elector, which brought him into conflict with those who wanted to pursue reform more quickly. Luther also came into conflict with the philosopher Erasmus over the free choice of the will, and with the reformers in the Swiss territories over their understanding of the Lord's Supper, leading to a permanent break between the Lutheran and Reformed churches. Luther continued to lecture on scripture in Wittenberg until his death in 1546, in the hope that he could teach the next generation the true meaning of the Gospel.

By rejecting monastic vows as a legitimate expression of Christian faith, Luther raised marriage and the family to genuinely spiritual estates, and made them the locus of education in faith by means of his

German translation of the Bible and his Small Catechism. By allowing the Elector of Saxony to protect him after 1521, Luther began a period in which temporal rulers would be given the power in the church previously accorded to bishops, which would raise problems of its own over time. By testing the whole of received tradition by the sole criterion of the clear word of God in scripture, Martin Luther initiated a movement of criticism that extended beyond the scope of his own reform efforts. The Reformed and Anabaptist movements used the same criterion to criticize both the Roman Church and Luther himself. The criticism of both scripture and tradition by reason in the age of the Enlightenment can be seen as a further development of the comprehensive critique of tradition initiated by Luther.

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See also Protestantism

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The emergence of Macedon as a major imperial power during the fourth century BCE was a pivotal event in world history, changing the focus of culture and politics to those of the Greeks it conquered. The demise of the Macedonian kingdoms did not, however, mean the end of Greek influence in their former territories. Macedonian conquest had effectively linked culturally and commercially the entire vast territory from India to the Mediterranean.

During the fourth century BCE, in the span of little more than fifty years, the ancient center of gravity in southwest Asia shifted from Mesopotamia (between the Tigris and Euphrates rivers) and southwestern Iran to the eastern Mediterranean basin. The Persian Empire, which had dominated the vast region from India to Anatolia (in modern Turkey) for more than two centuries, disappeared, being replaced by a series of Macedonian kingdoms. The social and cultural changes were equally profound. Greeks became the new elite, and knowledge of the Greek language and Greek culture became the key to social and political influence. The incentive to learn millennia-old hieroglyphic and cuneiform scripts and the cultures encoded in them declined sharply, leading to their eventual disappearance during the early centuries CE.

History

Balkan (relating to countries of the Balkan Peninsula, including Macedonia) nationalism has made the identity of the Macedonians a controversial subject. Recent discoveries suggest, however, that the

Macedonian language was, in fact, a form of Greek related to the dialects spoken in northern Greece. Although Macedonian may have been a Greek dialect, this linguistic relationship was obscured by sharp differences in culture between Macedonians and Greeks. The most important of these differences was that Macedon was a territorial state ruled by kings, not a state divided into mutually independent city-states, as Greece was.

During most of its early history the Macedonian monarchy was weak. Situated in the northern Balkans, Macedonian kings, to retain their thrones, had to struggle constantly against foreign enemies and powerful nobles with royal ambitions. Only in the mid-fourth century BCE did this situation change as a result of the political and military reforms of King Philip II (360–336 BCE), which transformed Macedon into the strongest military power in the eastern Mediterranean and overseer of an empire that stretched from southern Greece to the Danube River. Threatened with ruin by Philip's assassination in 336 BCE, his work was saved by the accession of his son Alexander III (Alexander of Macedon, commonly called Alexander the Great, 336–323 BCE), who carried out his father's plans to invade the Persian Empire.

Alexander was twenty years old when he became king. When he died in Babylon in 323 BCE at the age of thirty-three, he had transformed the world that the Greeks knew. In the course of a campaign that extended from the Mediterranean to western India, his army repeatedly defeated the armies of the Persian Empire and brought under Macedonian rule Egypt and all of ancient southwest Asia. Whatever plans Alexander may have had for his empire, however, were aborted by his premature death, leaving to his

I am not afraid of an army of lions led by a sheep; I am afraid of an army of sheep led by a lion. • **Alexander the Great (356–323 BCE)**

successors the task of creating a new state system in the territories of the former Persian Empire.

Four decades of bitter struggle were required for that state system to emerge. Efforts to keep Alexander's empire intact were frustrated by the ambitions of his generals, who sought to divide it among themselves. When the wars of Alexander's successors ended in 281 BCE, his empire had been replaced by a state system dominated by three large kingdoms: that of the Antigonids in Macedon, the Seleucids in Asia, and the Ptolemies in Egypt. From the beginning, however, the new kingdoms' survival was repeatedly threatened by both internal and external threats.

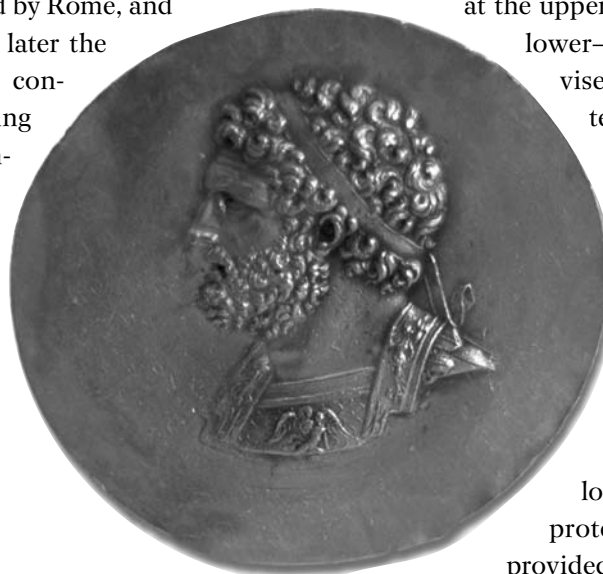
The Seleucids' kingdom was the most vulnerable. King Seleucus I (311–281 BCE) ceded India to Chandra Gupta (c. 324–300 BCE), the founder of the Maurya dynasty, and his successors lost much of the territory conquered by Alexander in Central Asia to the Parthians (Iranian-speaking nomads) and rebellious Greek settlers, who carved out kingdoms in eastern Iran and Bactria (modern Afghanistan). Meanwhile, struggles with the Seleucids to preserve their holdings in southern Syria and Palestine and native rebellions in southern Egypt undermined the Ptolemies' hold on Egypt. Attempts to restore royal authority in the early second century BCE by King Antiochus III (223–187 BCE) and King Ptolemy V (204–180 BCE) were frustrated by Rome, and a little more than a century later the last vestiges of Alexander's conquests had disappeared, having been absorbed into the empires of the new masters of southwest Asia: the Romans and the Parthians.

This *niketerion* (victory medallion) bearing the profile of King Philip II of Macedon (d. 336 BCE), was probably minted during the reign of the last Roman emperor, Alexander Severus.

Macedonian Kingdoms

The emergence of the Macedonian kingdoms created a new world for the Greeks. While the cities of Greece declined, the kings founded splendid new Greek cities in their kingdoms. Although Greek literature contains little evidence concerning the operation of the Macedonian kingdoms, archaeological evidence in the form of inscriptions and papyri has remedied this deficiency, making clear that the kingdoms were conquest states organized on the basis of two principles. First, a kingdom belonged to the king; and second, his business had priority over everything else. Although these principles were common to all the kingdoms, their application is clearest in Egypt because of the rich papyrological (relating to papyrus) evidence for the functioning of the government.

Egypt's wealth was its rich agricultural land, which the Ptolemies divided into two categories: royal land dedicated to basic agricultural production and "released land" used to support soldiers, government officials, and even Egypt's numerous temples. The main nonagricultural sectors of the economy, such as textile, papyrus, and oil production, were organized as state monopolies in order to maximize royal revenue. An extensive administration based in the capital Alexandria but with agents—Greek at the upper levels and Egyptian at the lower—throughout Egypt supervised the system. Over the system as a whole was the king, who ruled as an autocrat whose word was law. The establishment of a cult of the living ruler and his ancestors enhanced the legitimacy of royal autocracy and afforded subjects a means of demonstrating their patriotism, loyalty, and gratitude for the protection and other benefits provided them by their ruler.



Life and Culture

Whereas Alexander may have hoped to govern his empire with the aid of native elites who accepted his rule, his successors rejected that hope, relying instead on Greeks to fill key administrative posts. As a result, for more than a century Greeks moved east to populate the new cities founded by the kings. For the first time Greeks and other travelers could be confident that the Greek language was sufficient to find them ready welcome everywhere from the Mediterranean to the borders of India.

The greatest of the new cities was Alexandria in Egypt, which eventually grew to enormous size with a population reaching half a million people and possessed splendid public buildings and amenities unknown to the cities of old Greece. The greatest of these amenities was the lighthouse known as the “Pharos,” a 121-meter-high polygonal tower whose beacon fire guided ships to Alexandria harbor.

Alexandria was the first of Alexander’s foundations and the site of his tomb, but the Ptolemies made it the capital of Egypt and the premier city of the Hellenistic

(Greek) world. Built on the site of an Egyptian town named “Rhakotis,” Alexandria possessed a multiethnic population that included Macedonians, Greeks, Egyptians, and a large Jewish community. Despite the diversity of its population, Alexandria was organized as a Greek city-state, and only Greeks and Macedonians enjoyed full citizenship rights.

In the new kingdoms culture became a tool to enhance royal prestige. Like Alexander, the Ptolemies encouraged prominent Greek intellectuals to settle in Alexandria. Supported by Egypt’s riches, they subsidized artistic and scientific work by establishing cultural institutions of a new type, namely, the Museum, a research center where scholars supported by government stipends could pursue their studies, and the Library, which was intended to contain copies of every book written in Greek. Eventually, its collection supposedly reached 700,000 papyrus rolls.

The Ptolemies were passionate about expanding the royal library’s collections. Jewish tradition claimed that King Ptolemy II ordered the preparation of the Septuagint, the Greek translation of the Jewish Bible; King Ptolemy III stole the official Athenian copy of



the works of the great Greek tragedians Aeschylus, Sophocles, and Euripides. However its books were acquired, the Library offered unprecedented resources for scholarly research in every field of intellectual endeavor. Doctors and writers receiving government stipends had, however, to earn their keep, serving as physicians and tutors to members of the royal family and celebrating its achievements. The poet Callimachus created a monumental catalogue of 120 books in the library while writing elegant poems in honor of the royal family. Similarly, the poet Theocritus also extravagantly praised the achievements of Ptolemy II in his poems.

The greatest achievements of Hellenistic intellectuals, however, were in scholarship and applied science, where their works remained standard for the rest of antiquity. Callimachus and other scholars such as Zenodotus and Aristarchus founded the critical study of Greek language and literature and prepared standard texts of the Greek poet Homer and the other poets that are the ancestors of those texts we still use. The mathematician Euclid summed up the results of three centuries of Greek mathematics in his *Elements*, which was still used to teach plane geometry until the early twentieth century. The geographer Eratosthenes established the principles of scientific cartography and produced a strikingly accurate estimate of the circumference of the Earth on the basis of evidence collected by Hellenistic explorers. The physicist Ctesibius pioneered the study of ballistics and the use of compressed air as a source of power, while other scientists experimented with the use of steam to operate simple machines. Medicine also advanced greatly. The doctors Herophilus and Erasistratus made fundamental discoveries concerning the anatomy and functions of the human nervous, optical, reproductive, and digestive systems by dissecting corpses, even vivisectioning criminals whom the government provided for the advancement of science.

Alexandria was the greatest of the new cities founded by Alexander and his successors, but it was not atypical. The rulers of the other kingdoms pursued the same goals as the Ptolemies in their urban plans. Like Alexandria, the Seleucid capitals—Antioch

in Syria and Seleucia in Mesopotamia—were large-scale, planned, multiethnic urban centers with splendid monuments. Even in remote Bactria, archaeology has revealed at Ai Khanum near the Oxus River a Greek city with broad streets, a special government center, and elegant temples and villas. These cities were also cultural centers. Thus, Antioch also had a library like Alexandria, albeit smaller, as did the city of Pergamon in Anatolia, while at Ai Khanum the remains of imported Greek books have been found in the royal treasury. The kings also encouraged native elites to transform their cities into Greek cities complete with the same amenities found in the royal capitals by rewarding them with citizenship and tax privileges.

End of the Macedonian Era

Despite their achievements, the Macedonian kingdoms had serious weaknesses, most importantly the limited support of their non-Greek subjects. In these kingdoms ethnicity and privilege were linked, and Greek identity was the ethnicity that counted even though Greeks and Macedonians made up less than 10 percent of their population. Thus, although elite non-Greeks sought Greek status through education, few Greeks acquired a sound knowledge of the languages and cultures of Egypt and Asia. The new Greek cities were essentially islands of foreign domination and culture in a largely non-Greek landscape. As a result, native unrest and separatism prevented the last Ptolemies and Seleucids from mounting effective resistance to the advances of the Romans and Parthians.

The end of the era of the Macedonian kingdoms did not, however, mean the end of Greek influence in their former territories. Macedonian conquest had effectively linked culturally and commercially the entire vast territory from India to the Mediterranean, and that linkage not only survived but also expanded westward to the Atlantic and northeastward toward China under Roman and Parthian rule. Likewise, Greek culture and the Greek language also continued to function as a common elite culture and language in the



Roman West, while Greek art and the Greek alphabet found new uses in Central Asia, providing Buddhism with the iconography (traditional images or symbols associated with a subject, especially a religious or legendary subject) to express the humanity of the Buddha and enabling the Saka and other peoples of the region to write their languages for the first time.

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See also Alexander the Great; Greece, Ancient

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Machiavelli, Niccolò

(1469–1527)

ITALIAN POLITICAL PHILOSOPHER

Niccolò Machiavelli has exerted an extraordinary influence on modern thought and practice throughout the world. His writings and career are subject to varied interpretations, but the most common have given rise to a word found in most languages, *Machiavellianism*, suggesting deceit, tyranny, and the dictum that the end justifies the means.

Born in Florence in 1469, Niccolò Machiavelli was one of four children of Bernardo Machiavelli, an impoverished lawyer whose ancestors had held important political positions until the rise of the de' Medici dynasty. Niccolò received a mediocre education, but his father's well-stocked library provided some compensation. Machiavelli's own writings would eventually find a prominent place in the Western canon, and thus on the shelves of libraries around the world—although his most important work, *The Prince*—a manual predicated on his thesis that humankind is essentially evil, and in which he thus advised rulers to be constantly vigilant—was banned by the Catholic Church soon after publication.

In early adulthood Machiavelli witnessed a momentous event that would help shape his character and career. In 1494 King Charles VIII of France invaded Italy to press a claim to the kingdom of Naples. The four dominant city-states—Florence, Venice, Milan, and the Papal States—were thrown into turmoil. In Florence the incompetent ruler, Piero de' Medici, was forced into exile, and a republic was established. On 19 June 1498 Machiavelli was elected to the important post of secretary of the second chancery, a

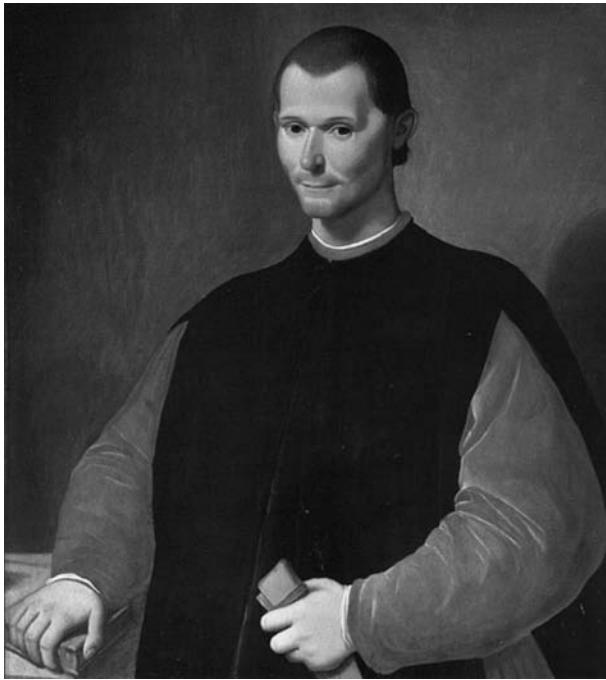
government organ dealing with both domestic and foreign affairs.

Machiavelli frequently undertook diplomatic missions, on which his primary responsibility was to observe and report back to Florence. He proved to be an astute observer. Among the major political figures whom he visited were King Louis XII of France; Maximilian I, Holy Roman emperor; Pope Julius II; and Cesare Borgia, the warrior son of Pope Alexander VI and the ruler of the papal state Romagna. None made a greater impression on him than Cesare Borgia.

In 1512 Spanish troops from the kingdom of Naples entered Tuscany and restored Florence to de' Medici rule. Machiavelli was summarily dismissed from the government and briefly imprisoned. Bereft of a job, he retired with his wife and children to the family villa Sant'Andrea, outside of Florence. Most of his life after 1513 was spent in writing, and his use of Italian for his writings helped to promote Italian as a major literary language.

Machiavelli's most important work was *The Prince*, a manual for rulers that he completed in December 1513. He began his manual with the assertion that he was writing a realistic guidebook, based on his own experience. Predicated on his thesis that humankind is essentially evil, he advised rulers to be constantly vigilant. They must be perceived as being just, compassionate, religious, and trustworthy, but even if they actually possessed such virtuous characteristics, they must be prepared to abandon them when it suited their own interests. A prince should wish to be feared rather than loved, if he has to choose between fear and love. He should not object to being considered a miser because too much generosity leads to higher

The first method for estimating the intelligence of a ruler is to look at the men he has around him. • Niccolò Machiavelli (1469–1527)



Santi di Tito, *Niccolò Machiavelli* (late 16th c.). Oil on canvas. This posthumous portrait hangs in the Palazzo Vecchio, Florence.

taxes and thus alienates the people. Machiavelli also urged rulers to take advantage of opportunities and not assume that chance, or “fortune,” is the major determinant of events. The ruler most worthy of emulation, according to Machiavelli, was Cesare Borgia because he knew how to combine law and order with deceit, political assassination, and secrecy. *The Prince* ended with a highly emotional appeal to Lorenzo de’ Medici, to whom the book was flatteringly dedicated, to form a national army and drive foreigners out of Italy. Because the ideas expressed in *The Prince* ran counter to Christian morality, the book was subsequently condemned and placed on the Index of Prohibited Books of the Catholic Church.

After *The Prince* Machiavelli resumed writing a book he had begun earlier, *The Discourses on the First Ten Books of Livy*. Contrary to his support of autocracy in *The Prince*, he now advocated the type of government that had existed under the Roman republic. He saw in this republic a balance between

the interests of the aristocracy and those of the common people. He praised Rome’s pagan religion as a necessary foundation for the state, unlike the Roman Catholicism of his own day, which he blamed for Italian corruption and weakness.

During this period of enforced retirement Machiavelli turned his facile pen to other literary forms, such as poetry, drama, and biography. His most successful genre was drama, and his *The Mandrake Root*, an amusing as well as anticlerical comedy, attracted wide audiences. *The Mandrake Root*, like his novella *Tale of Belagor, the Devil That Took a Wife*, also reflected contempt for women that verged on misogyny.

After Lorenzo de’ Medici’s death in 1519, Machiavelli’s relations with the de’ Medici family improved. He was commissioned by Cardinal Giulio de’ Medici and the University of Florence to produce a history of Florence. Beginning the narrative with the fall of Rome, he traced Florentine history to 1492. In describing the de’ Medici period he wrote more as a fawning politician than as a historian.

In 1525, as Machiavelli prepared to present his *Florentine Histories* to Pope Clement VII (the former Cardinal Giulio de’ Medici), the Italian peninsula was threatened by Charles V, Holy Roman emperor and king of Spain. Two years later Charles V’s Spanish infantry and German Lutheran troops sacked Rome, causing the de’ Medici Pope Clement VII to take refuge in Castel Sant’Angelo and the de’ Medici government in Florence to collapse.

A republic was quickly reestablished in Florence, but because Machiavelli had been associated with the de’ Medicis, he was excluded from office, much to his distress. He died on 21 June 1527 and was buried in the Church of Santa Croce. A contradictory figure in his own time, Machiavelli continues to elicit blame and praise in the twenty-first century, but his influence on political thought is undeniable.

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See also Government; Renaissance

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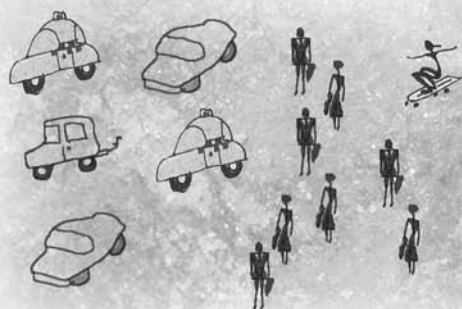
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Magellan, Ferdinand

(1480–1521)

PORTUGUESE EXPLORER

The circumnavigation of the globe in the early sixteenth century by the Portuguese explorer Ferdinand Magellan provided the first empirical proof that the Earth is round. Magellan is also renowned for discovering the strait at the southern tip of South America that now bears his name.

The Portuguese sailor Ferdinand Magellan led a crew whose survivors circumnavigated the Earth from 1519 to 1522. Most people in the sixteenth century understood that the Earth is a sphere; despite longstanding beliefs to the contrary, as early as the third century BCE the Greek mathematician and geographer Eratosthenes proved this fact by geometry. Nevertheless, Magellan's circumnavigation was the first empirical proof that the Earth is round. Magellan also proved that the Americas were not necessarily a barrier between Europe and Asia; rather, merchants could sail from one continent to the other by passing through a strait Magellan discovered at the southern tip of South America, duly named the Strait of Magellan.

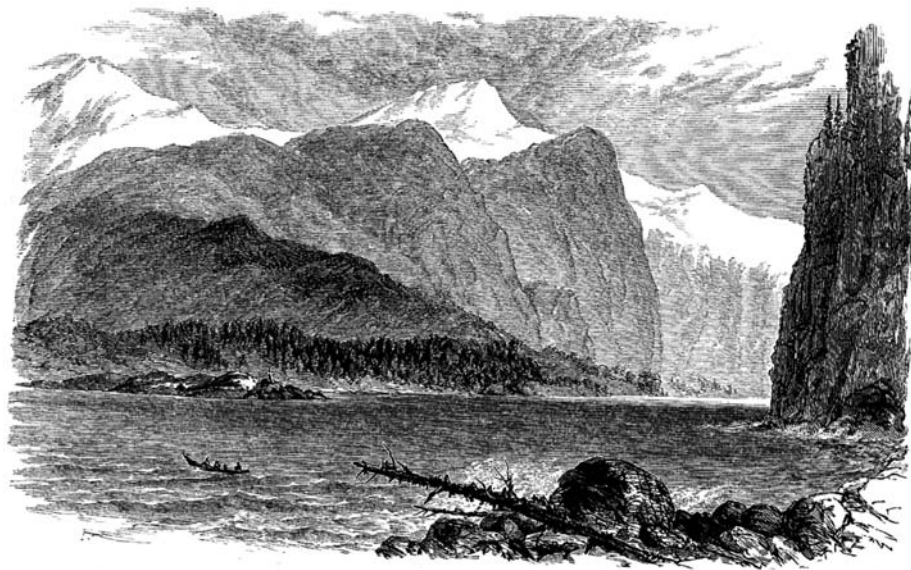
Born about 1480 in either Sabrosa or Porto, Portugal, Ferdinand Magellan was the son of Rui de Magalhaes and Alda de Masquita, both nobles. Queen Leonor of Portugal brought Magellan as a boy to Lisbon, where he served as her page. He joined the Portuguese fleet in 1505 and sailed to the Indian Ocean, where he served until 1512. Wounded in one battle and decorated for valor in another, Magellan rose to the rank of captain in 1512 and returned briefly to Lisbon. The next year he was wounded again, in a battle against Muslim Arabs, or Moors, in the Mediterranean Sea. Despite Magellan's wounds and

heroism, King Manuel of Portugal refused twice to increase his pay, suspecting that Magellan had traded with the Moors. Magellan denied the charge, and in 1517 pledged loyalty to Spain, Portugal's rival.

The rivalry arose between Spain and Portugal over which nation would be the first to circumvent the land route from India to the Iberian peninsula over which merchants carried spices. The Genoese sailor Christopher Columbus thought he had done this in 1492 by sailing west from Spain, on whose behalf he set out. But by Columbus's death in 1506, Europe's monarchs and merchants understood that he had found not India but a new land altogether. In the meantime, Portugal had beat Spain in the maritime race to India when Portuguese sailor Vasco da Gama reached Calicut, India, in 1498, claiming the Indian Ocean and with it the spice trade.

The Spanish were thus stuck with a new continent they initially regarded as an impediment on the way to Asia rather than an economic opportunity of its own. Spanish explorer Vasco Nuñez de Balboa sparked a glimmer of hope by discovering a new ocean, which Magellan would later name the Pacific, in 1513. If a strait could be found between the Atlantic and Pacific oceans, Spain would be able to sail west to Asia and contest Portuguese control of the spice trade.

This task fell to Magellan. His status as a nobleman, his service in the Indian Ocean, and his heroism inspired the confidence of Emperor Charles V, the king of Spain, who in March 1518 granted Magellan five ships. After amassing provisions and a crew of nearly 270 men, Magellan sailed on 20 September 1519, southwest into the Atlantic Ocean in search of a strait through South America.



The Straits of Magellan at the southern end of South America.

He faced trouble from the outset. Each excursion into a river of South America ended in a cul de sac, and by March 1520, winter in the Southern Hemisphere prompted Magellan to halt at Port San Julian on the eastern coast of South America and put his crew on short rations. Furious that Magellan had not retreated north to warm waters, the captains of three of his ships mutinied. Magellan restored order, only to have one ship run aground. Worse, while in port Magellan discovered that his suppliers had cheated him with provisions for six months rather than the eighteen he had ordered. The men had no choice but to eat anything they could find: worms, insects, rats, or sawdust.

With only four ships and short of food, Magellan renewed the expedition that August, and by October 1520 entered the strait that would lead him to the Pacific and then bear his name. So circuitous was the passage that Magellan had to divide his ships to reconnoiter parts of the strait. His largest ship instead deserted Magellan, sailing back to Spain. After more than a month, Magellan's remaining three ships at last navigated through the strait and into the Pacific Ocean.

The way to the Indian Ocean now lay open, but Magellan ultimately had little chance to rejoice. Anchoring off the island of Cebu in the Philippines, Magellan and his most loyal men went ashore in April of 1521, lured there by the king of Cebu on the

pretense that he was Christian and wanted Magellan's help in ridding the island of heathens. The natives instead attacked Magellan. Covering the retreat of his men, Magellan was wounded repeatedly and bled to death. Of the remaining three ships, two were in such poor condition that the crew abandoned them. Only eighteen survivors returned in the last ship to Seville, Spain, on 8 September 1522, completing the circumnavigation of the world Magellan had begun nearly three years earlier.

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See also European Expansion; History, Maritime; Spanish Empire

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Mahavira

(c. 599–527 BCE)

INDIAN RELIGIOUS LEADER

The historical significance of the Indian religious leader Mahavira—who lived in the sixth-century BCE, a time when India society was rooted in the inequity of its caste system and relied for its well-being on the widespread use of slavery and the large-scale sacrifice of animals—lies in his revolutionary worldview of amity and harmony with all living beings. His teachings became the foundation of one of the world’s oldest religions, Jainism.

The Indian religious leader Mahivira lived in the sixth century BCE. Two of his core teachings—the principle of ahimsa (nonviolence) and the philosophy of *anekanta* (many-sided reality)—have universal significance and are relevant to contemporary inquiries in peace building, ecology, bioethics, and animal rights. His teachings are also the basis of the canonical literature (*Agama*) of Jainism, which not only plays a significant role within the religion but also is regarded as a primary source for understanding the history of ancient India.

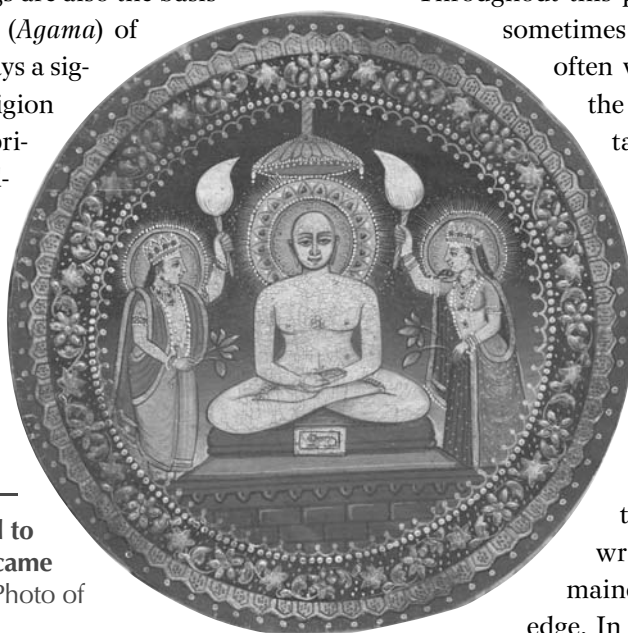
Jainism regards Mahavira as the twenty-fourth *tirthankara* (ford maker) or *jina* (spiritual

conqueror). Having overcome attachment and aversion he attained omniscience and preached the way to overcome worldly suffering and attain *moksa* (liberation from the cycle of rebirth). Jainas (the followers of the *jina*) use the epithet “Mahavira” (great hero) instead of his given name, Vardhamana, and follow his adherence to ahimsa in thought, word, and deed amid adverse circumstances.

Vardhamana was born to mother Trishala and father Siddhartha, members of a royal clan, at Kundagrama in the ancient kingdom of Vaishali near the modern city of Patna in eastern India. His parents were followers of Parshvanatha, the twenty-third *tirthankara*, who is said to have lived during the ninth century BCE. At age thirty Vardhamana renounced his kingdom and became a mendicant practicing austerity in search of enlightenment for thirteen years.

Throughout this period he frequently fasted, sometimes for long periods of time and often without even water. During the thirteenth year Mahavira attained *kevalajnana* (infinite knowledge) and became omniscient. For the next thirty years Mahavira taught about ahimsa and compassion and attained nirvana (liberation) in 527 BCE.

Although ahimsa was recognized as a virtue in the Vedas (Hindu sacred writings), such recognition remained a mere scriptural knowledge. In reality Vedic society during



Painting of Mahavira (dated to 1900), whose teachings became the foundation of Jainism. Photo of painting by Jules Jain.

Kill not. Cause no pain. • Mahavira (c. 599–527 BCE)

Mahavira's time operated on a fundamental inequity rooted in the caste system and relied for its well-being on the widespread use of slavery and the large-scale sacrifice of animals (*yajna*). In this context Mahavira's teachings were revolutionary. He taught the true meaning of ahimsa and compassion. A precondition of the practice of ahimsa, according to him, is knowledge of the various forms of life: earth, water, fire, wind, vegetation, and mobile beings with two or more senses. Equally important is the awareness that in essence all living beings, regardless of their life form, are equal; all experience pleasure and pain; and all desire to live. Violence against others, in his view, is violence against oneself. This sense of our being the same as other beings, explained Mahavira, is at the core of compassion and nonviolence. Therefore, he preached the principle of universal amity and friendship. Salvation of the self, according to Mahavira, is deeply connected with one's concern for universal well-being. Every thought, word, and deed has a result and creates happiness or suffering for oneself and for others.

In addition to the virtue of being nonviolent, Mahavira emphasized the virtues of telling the truth, not stealing, being celibate, and not being possessive. He prescribed these as the *mahavrata* (great vows) for mendicants; lay Jains may observe these vows in a limited manner as *anuvrata* (small vows).

Mahavira's philosophy of understanding reality with respect to a given context (*naya*) became the basis for the Jain philosophy of *anekanta*. Jains not only evolved their own theory of knowledge (*anekantavada*) in the context of their metaphysics and ontology (a branch of metaphysics concerned with the

nature of being), but also, more importantly, were concerned about questions such as, "What constitutes valid knowledge, and how is such knowledge acquired?" In the latter sense the philosophy of *anekantavada* allows room for multiple views of reality and reduces conflict often arising from absolutist views of reality. Based on Mahavira's teachings of ahimsa and *anekanta*, Jains observe vegetarianism, reject the slaughter of animals for human consumption, and, in the context of world religions, advocate harmony and peace, acknowledging the equality of all spiritual traditions. Many people see Mahavira's emphasis on simplicity and *aparigraha* (nonpossession, nonattachment) as a valuable antidote to the rising culture of consumerism at a global scale.

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See also Jainism; Nonviolence

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Malaria

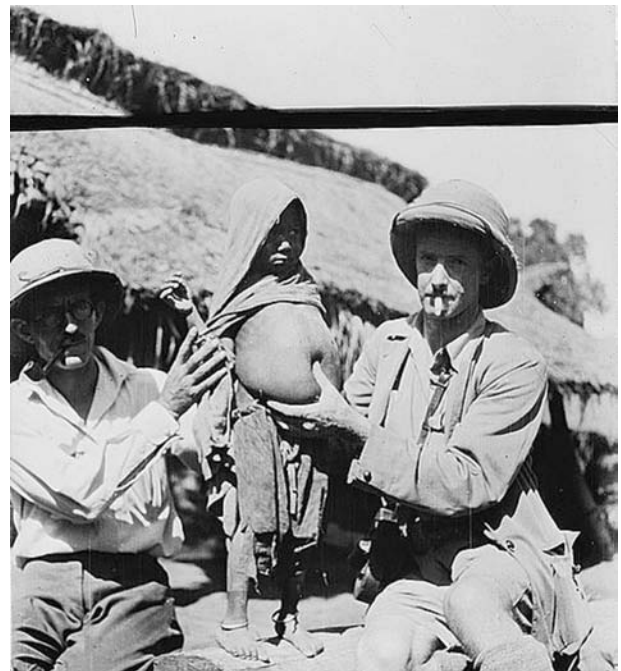
Malarial fevers have been a scourge of humanity throughout much of the inhabited Afro-Eurasian landmass, ever since they emerged from Africa with migrating humans as many as 100,000 years ago. Historians of disease estimate that malaria has probably killed more people than any other disease.

Malaria, one of the oldest diseases afflicting human beings, is a parasitical infection of the blood that produces high fevers and debilitation. It first emerged in Africa, and as human beings migrated outward approximately 100,000 years ago, they brought malarial infections with them.

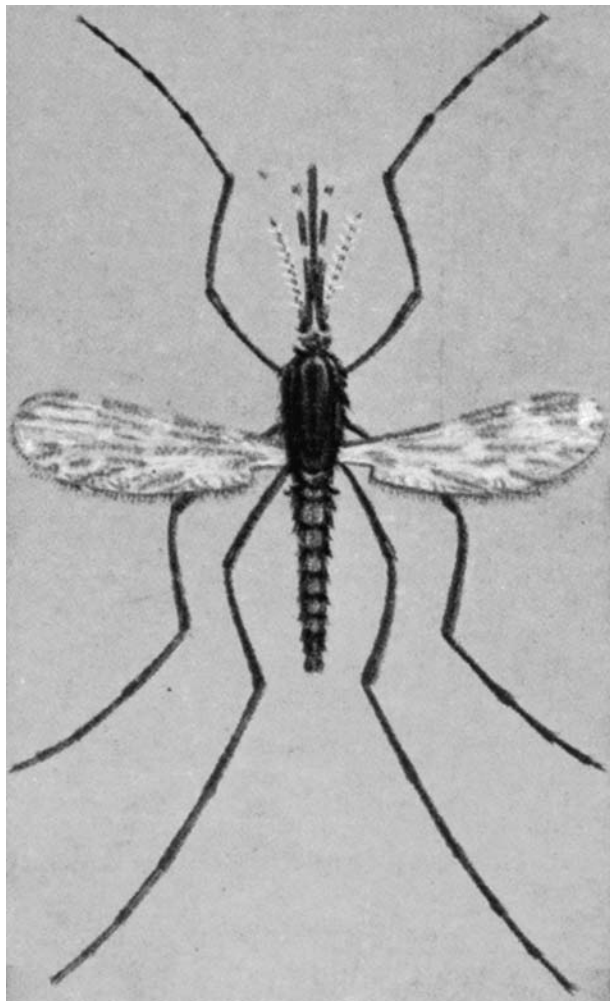
Early migrants crossing the land bridge from Asia into North America at the end of the last ice age apparently did not sustain the chain of infection, and it is generally held that malaria became established in the Western hemisphere following European contacts with the New World in the late fifteenth and early sixteenth centuries. Malaria became the first truly global infection that was carried by a vector (an organism carrying a pathogen)—in this case, the mosquito, and today the parasitical infection is found in a broad tropical band that stretches around the globe.

There are four species of single-celled microorganisms (*Plasmodium falciparum*, *P. vivax*, *P. malariae*, and *P. ovale*) that live in both anopheles mosquitoes and human beings and that cause malarial infections in human beings. The most common form outside of tropical Africa, vivax malaria, is also the most widely distributed. The most common form in tropical Africa, falciparum malaria, is the most virulent. All four types of parasite are transmitted

to human beings via the bite of the female anopheles mosquito. One part of the parasite's life cycle takes place within the female mosquito; another part takes place within the human being. Because there are different malarial parasites and many different subspecies of anopheles mosquitoes, the ecological conditions that support malarial infection vary from one microecology to another; therefore, the global picture of malarial infection can be described as a mosaic of local infections.



League of Nations Malaria Investigation Committee to India. A British doctor in India holds a young child whose spleen is drastically enlarged by malaria (c. 1929). Library of Congress.



The malaria mosquito inhabits a broad band of tropical climate that stretches around the globe.

Most anopheles mosquitoes breed in standing water. Low-lying marshy areas and the edges of streams and rivers have long been associated with danger to human health, and malaria was probably one of the earliest scourges of the river-basin civilizations, such as the Nile, Tigris-Euphrates, Indus Valley, and Huang (Yellow) River. Malaria is also associated with environmental transformation. The cutting down of forests to create arable land often provides a suitable habitat for the breeding of anopheles mosquitoes. Infected people or animals, even during short visits, are able to introduce the parasite into the new environment and establish the disease. It is likely that malaria spread outward from the river-basin civilizations into other early agricultural societies.

Both European and African immigrants introduced malaria to the Americas, and the disease

became one of the most severe public health problems in the hemisphere. The incidence of malaria in the middle latitudes of North America and Western Europe decreased markedly during the twentieth century, however. In North America this was achieved through public health interventions such as the installation of window and door screens, chemical therapy (with quinine and, later, synthetic antimalarial drugs), the use of mosquito larvicides, and the draining of mosquito habitats. In Western Europe the extension of mixed farming systems is largely credited with the reduction in infection; there, anopheline mosquitoes began to take their blood meals primarily from domesticated livestock, which are not susceptible to the disease. Malaria continues to be a significant problem in South and Central America, South and Southwest Asia, the Western Pacific, and Africa. Over the course of the twentieth century, the annual number of deaths from malaria has risen in Africa, which is today the global center of malarial infection.

Following the outbreaks of epidemic malaria during World War I, the League of Nations established a commission to survey the global status of the disease. Malariologists were enthusiastic about the prospects of reaching malaria sufferers and providing them with quinine to relieve their symptoms and break the parasite's life cycle. These hopes proved elusive, however, as the global demand for quinine greatly outstripped the supply.

Following World War II, malariologists turned their attention to the destruction of the mosquito vector, and a major World Health Organization initiative was launched to spray DDT to eliminate the anopheles threat. This was initially successful, and the global rates of infection plummeted—until the overuse of DDT produced resistance in the mosquito population.

Since the 1970s, malarial parasites have become increasingly resistant to synthetic antimalarial drugs. Synthetic antimalarials in combination with artemisinin, a natural product long used in China, is currently the best hope of the medical community for fighting the disease. Considerable attention has also been

Quinine was one of the medicinal poisons; one of the strongest of these. Four grammes could make one deaf and giddy and short-winded; it acted like atropine on the visual organs . . . it was as intoxicating as alcohol; workers in quinine factories had inflamed eyes and swollen lips and suffered from affections of the skin. • **Thomas Mann (1875–1955), from *The Magic Mountain***

focused on the efficacy of insecticide-impregnated bed nets that protect against the mosquito's bite.

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See also Cinchona; Diseases—Overview; Quinine

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Mali

Stories of Mali's origins were handed down through oral history, many of which were transcribed by the North African scholar Ibn Khaldun circa the 1350s. As an empire Mali flourished in Africa from the first half of the thirteenth century to the early fifteenth century, controlling territory from the mouth of the Senegal River on the Atlantic to the salt mines of Tadmekka in the Sahara.

Preceded by the Ghana Empire and followed by the Songhay Empire, Mali was the second of the three early great empires of the western Sudan and was a dominant power below the Sahara Desert. The ancient heartland of the empire occupied a relatively compact region of the upper Niger River and its tributaries in what is now northeastern Guinea and southern Mali. But at the height of its powers during the fourteenth century, scholars believe, the Mali Empire controlled territory from the mouth of the Senegal River on the Atlantic coast eastward to include the kingdom of Gao and the salt mines of Tadmekka in the Sahara.

Beginnings

By the end of the eleventh century the decline of the Ghana Empire left a vacuum, which made possible the rise of the Soso, a southern group of the Soninke people. According to oral tradition Soso rulers belonged to the Kante clan, under which the Soso extended their authority over their neighbors and reached the height of power during the reign of Sumaworo Kante early in the thirteenth century. The former territories of Ghana at the desert edge and those of the

Mande chieftaincies in the upper Niger River region to the south came under Sumaworo's rule. Toward the middle of the thirteenth century, after a successful rebellion against Soso domination, the Mande chieftaincies unified under the leadership of Sunjata Keita and established what would develop into the Mali Empire. The transfer of hegemony (influence) from Ghana to the Soso and then to Mali marks a gradual shift of the political center of gravity southward from the edge of the Sahara to the more fertile savanna and the waters of the upper Niger River. In addition to gaining control of important long-distance trade routes running from south to north and west to east, Mali had access to extensive sources of both iron and gold in the south and salt mines of the Sahara in the north.

Oral Tradition and Mali's History

The history of Mali's origins comes from Muslim scholars of the fourteenth to sixteenth centuries, but much of what has entered the literature derives from oral tradition for which no independent confirmation exists, and it is therefore problematic in terms of Western academic standards of historiography (the writing of history). The epic narrative of the central hero Sunjata and his contemporaries in Mande oral tradition illustrates the Mande people's own view of the glorious past. It credits their ancestors with establishing one of the great empires of the medieval world, but the historical accuracy of specific details is impossible to gauge.

The principal Mande clans frame their identities in terms of descent from the founding ancestors, who are recalled by professional bards (*jeliw*) who narrate



The Sankoré Mosque, shown in Timbuktu, Mali, in 1984, allegedly dates from the fourteenth century.

oral tradition. For Sunjata, who is credited with establishing the basis of empire, an elaborate genealogy is recited and leads to his father, a member of the Konate clan. The consensus among knowledgeable informants in both Mali and Guinea identifies him as the ruler of Konfara. As Maghan Konfara (king of Konfara) he is said to have ruled from the town of Farakoro, which appears in his more complete name, “Farako Manko Farankonken.” Konfara’s supposed location on the Kokoro River near the present-day border of Guinea and Mali would position it to control the gold fields of Bure and also account for its particular importance among the other pre-imperial Mande chieftaincies. Scholars are not certain that Mali ever had a capital as the term is normally understood. Probably several major commercial entrepôts (intermediary centers of trade and transshipment) existed, and the seat of government was wherever the *mansa* (king) was in residence. At the time of the Mande’s defeat of its Soso oppressors, possibly in the 1230s, a place called “Dakajalan” is said to have been Sunjata’s center of operations. Much later, perhaps during the fourteenth century, the town of Niani on the Sankaran River apparently became an important administrative or commercial center.

In Mande traditional narrative the bards begin with episodes describing how the hero’s mother, Sogolon Conde, and his father, Maghan Konate of Konfara, are brought together to produce Sunjata, the child of destiny. Deadly conflict between Sogolon

and a jealous co-wife (whose son Dankaran Tuman is Sunjata’s rival half-brother) eventually drives Sogolon into exile with Sunjata and his siblings. The collective Mande chieftaincies subsequently fall under the tyrannical rule of Sumaworo, king of the Soso. Desperate for a powerful and effective leader, the Mande people send a delegation to bring Sunjata back from exile. With the support of various legendary figures still recognized as important ancestors, Sunjata organizes a rebellion that defeats Sumaworo and his Soso army, unifies the old Mande chieftaincies, and establishes the foundations of empire. Writing during the fourteenth century, the North African scholar Ibn Khaldun was acquainted with the existence of Soso as an intermediate kingdom between Ghana and Mali. He refers to Sunjata as “Mari Jata,” which is one of several names used by traditional bards to praise the hero. Citing oral informants of his day, Ibn Khaldun wrote that Mari Jata conquered the Soso and ruled for twenty-five years.

Sunjata’s Successors

The quality of Sunjata’s successors was uneven, with Mali enjoying times of prosperity and expansion under capable rulers but periodically enduring dismal leadership and political instability. According to Ibn Khaldun, Mari Jata (Sunjata) was succeeded by his son Mansa Uli, who was described as a great king who made the pilgrimage to Mecca in Saudi Arabia during the reign of al-Zahir Baybars, the Mamluk sultan of Egypt (1260–1277). A later ruler, the insane Khalifa, was assassinated because he shot arrows at his people and killed them for sport. By late in the thirteenth century the royal Keita line had become so weak that the kingship was usurped by a former slave named “Sakura,” who restored Mali to its former power but died while returning from pilgrimage in about 1298. After Sakura the throne reverted to two more descendants of Sunjata successively before passing to Musa, a descendant of one of Sunjata’s brothers.

People have described the twenty-five years of Mansa Musa’s reign as the golden age of the empire



of Mali. He consolidated control of lucrative trade routes and established embassies in North Africa. He also expanded the empire to include the kingdom of Gao on the eastern bend of the Niger River and valuable salt deposits in the Sahara. Musa brought wide recognition to Mali through his famous pilgrimage to Mecca of 1324–1325. Accompanied by his wife, Inari Kanute, and more than a thousand subjects, Musa arrived in Cairo in July 1324 and created a sensation through his generous gifts of gold, including fifty thousand dinars (gold coins) to the sultan of Egypt to announce his arrival. After completing his pilgrimage to Mecca, Musa returned to Mali accompanied by an architect from Spain who went to live in Timbuktu (Tombouctou) in Mali, as well as four Muslim dignitaries from the tribe of Quraysh (the Prophet Muhammad's people) who settled permanently in Mali with their families.

When Mansa Musa died in 1337 his son Mansa Magha succeeded him, but Magha died after four

years and was replaced by Musa's brother Sulayman. Mansa Sulayman was a powerful ruler who held together the vast empire that his brother had consolidated. The North African traveler Ibn Battuta visited Mali during Sulayman's rule in 1352–1353 and said that travel in the country was safe but that Sulayman's subjects disliked him. Ibn Battuta met Sulayman and later wrote a detailed description of the splendors of the Malian royal court. Ibn Battuta witnessed an episode when Kasa, the king's senior wife, apparently plotted with Jata, a son of Mansa Magha (Mansa Musa's son), to overthrow her husband. Mansa Sulayman averted the coup d'état but died seven years later in 1360.

Decline of the Empire

The Mali Empire had reached its zenith under the rule of Mansa Musa and Mansa Sulayman, but in 1360, the year of Sulayman's death, civil war broke out between his family and that of his deceased brother Musa. After much bloodshed Jata, the grandson of Mansa Musa who had plotted the coup d'état with Sulayman's wife Kasa, prevailed over his rivals and succeeded to power as Mari Jata II (1360–1373). He proved to be a tyrant, and his despotic rule seriously damaged the empire and ushered in thirty years of governmental dysfunction during which court officials sometimes attempted to restore order by seizing control from incompetent members of the royal lineage. In 1390 power was finally restored to a descendant of the original branch of the dynasty founded by Sunjata, but by that time the great days of the Mali Empire had passed. Early in the fifteenth century Mali lost control over the salt mines in the Sahara and the important trading and intellectual centers of Jenne and Tombouctou, which by the mid-fifteenth century would fall under the control of the expanding Songhay Empire.

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See also Mansa Musa



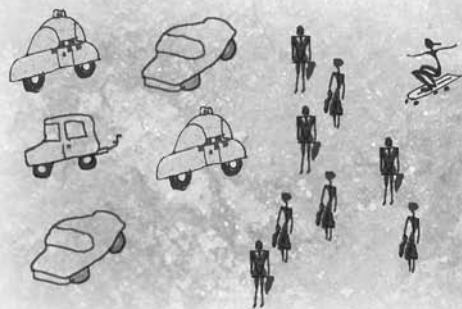
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Malthus, Thomas

(1766–1834)

BRITISH POLITICAL ECONOMIST

In the late eighteenth and early nineteenth centuries the British scholar Thomas Malthus developed theories about economics and the dangers of population growth that countered the prevailing European view of an improving society. His ideas continue to inspire thinking in ecology and environmental studies, such as the concepts of “carrying capacity” and “global commons.”

Thomas Robert Malthus, the British scholar who provided one of the first warnings of the dangers of overpopulation, put the “dismal” in the “dismal science” of political economy. Malthus’s simplistic mathematical models and common-sense observations made his dire predictions about a crowded, starving world a popular fear for generations after his 1798 *An Essay on the Principle of Population*.

Malthus was born of well-to-do English parents. He studied mathematics at Jesus College, Cambridge, taking holy orders, and eventually becoming the first professor of political economy in England at the East India College. In answer to the inevitable question posed to the “father” of population control, he had three children, two of whom survived to adulthood.

Malthus’s fame, ironically, arose from his anonymously published *An Essay on the Principle of Population, as it Affects the Future Improvement of Society with Remarks on the Speculations of Mr. Godwin, M. Condorcet, and Other Writers*. Malthus’s essay is best understood as a critique of French Enlightenment ideas of progress promulgated by, amongst others, his father, William Godwin, and Condorcet. Where these *philosophes* saw inevitable progress, Malthus saw vice, misery, and starvation. After making some

general observations about the fecundity of plants and animals compared to the relative scarcity of the means of subsistence, Malthus went on to offer a mathematical illustration to ground his thoughts on overpopulation. Malthus claimed that whereas population can increase geometrically (e.g., 1, 2, 4, 8, 16 . . .) agriculture is limited to arithmetic increases (e.g., 1, 2, 3, 4, 5 . . .). The result of these differing mathematical limits was that unchecked population would inevitably outrun the food supply. The first edition of *An Essay on the Principle of Population* was indeed a grim document, a stinging tonic to Enlightenment optimism whereby the iron laws of human nature and agricultural productivity trapped humankind in a vicious circle of starvation. By the second edition of his essay in 1803 Malthus offered the meager hope that perhaps humans might shape their destiny through delay of marriage—the only safe (morally and physically) means he could conceive of to prevent conception. Yet overall the Reverend Malthus’s population sermon remained the same: moral restraint was the only possible check to humanity’s natural tendency to succumb to animal passion, vice, and despair.

Long a mainstay of economic doctrine, Malthus’s influence on the life sciences was, if anything, more pronounced. Both Charles Darwin and Alfred Russel Wallace credited Malthus with providing the mechanism for their near simultaneous co-discovery of evolution by natural selection. Malthus’s claims for fecund parents and limited natural resources seemed the ideal engine to drive natural selection. Malthus’s links between social class and wanton breeding was also a mainstay of later social Darwinians who shared some of Malthus’s prejudices against the lower classes and assistance to the poor.

The power of population is indefinitely greater than the power in the Earth to produce subsistence for man. • **Thomas Malthus (1766–1834)**



John Linnell, *Portrait of Thomas Robert Malthus (1766–1834), Political Economist* (detail of original, 1833).

In the environmental sciences Malthus was no less influential. His population ideas seem directly linked to the later idea of “carrying capacities.” In a more popular vein, Malthus provided the intellectual impetus for a Cold War generation of “neo-Malthusians” who once again saw a growing population as the portent of doom. Garrett Hardin was a rigorous hard-hearted cynic in the Malthusian vein whose

classic essay “The Tragedy of the Commons” (1968) noted the ecological pitfalls of unchecked population growth, puncturing the optimism of 1960s liberalism as gleefully as Malthus debunked the Enlightenment. Paul Ehrlich’s *The Population Bomb* (1968) enjoyed the popular force of Malthus’s original essay through its striking mathematical predictions and evocative metaphor of exploding numbers of babies in an increasingly unstable world. In the twenty-first century, there are more than six times as many humans on the planet as the billion souls who so troubled Malthus at his death in 1834, and the debate he began remains contentious. Ironically, for this most influential of population control advocates, his intellectual progeny were numerous.

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See also Carrying Capacity; Global Commons; Population Growth; Population and the Environment

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Manichaeism

Manichaeism was a religion founded in Mesopotamia during the first half of the third century CE; it incorporated aspects of Zoroastrianism, Judaism, Christianity, and Buddhism. While almost universally attacked by the mainstream religions of the West, the teachings of Manichaeism came to shape debates within the Abrahamic traditions concerning the nature of good, evil, humans, and the world.

Manichaeism was founded by Mani (or Manes; 216–276 or 277 CE), a Persian prophet who proclaimed himself “the messenger of God come to Babel” and the Paraclete (Holy Spirit). He held that God had revealed himself at various times and places in human history: as the Buddha in India, Zoroaster in Persia, and Jesus in Palestine. Mani believed that each of these figures taught that the path to salvation came through gnosis (spiritual knowledge) rather than through faith or acts. In 242 Mani set out to disseminate his message publicly, traveling extensively in Central Asia and, according to some sources, visiting India and China. While only fragments of his written works survive today, they reveal that Mani certainly had familiarity with the Christian synoptic Gospels and the epistles of Paul, Jewish Orthodox and noncanonical texts, Zoroastrianism, and Mahayana Buddhism. He reportedly said: “As a river is joined to another to form a powerful current, just so are the ancient books joined in my writings; and they form one great wisdom, such as has not existed in preceding generations” (BeDuhn 2000, 6). Mani’s challenges to the Zoroastrian priesthood, the Magi, led to his execution in 276 or 277.

Mani’s teachings, however, spread rapidly. By 370 Manichaean churches could be found throughout much of the Roman Empire, from southern France to North Africa. Augustine of Hippo (354–430), the profoundly influential Christian bishop and theologian, served for nine years as a Manichaean novice before his conversion to orthodox Christianity in 386. While violently suppressed in the old Roman provinces in the sixth century, Manichaeism continued to flourish in Persia and Chinese Turkestan for centuries, even becoming the state religion of the (Chinese) Uighur Empire (eighth century to mid-ninth century CE) in 762. In western Europe, especially France, a significant revival of Manichaeism occurred in the eleventh to thirteen centuries. It was labeled the Albigensian heresy and its challenge to the Roman Catholic Church was perceived as so great that Pope Innocent III (reigned 1198–1216) ordered a crusade against the “scourge of God,” bringing a violent end to the movement in the West. In China, Manichaeism persisted until 1600.

Beliefs and Cosmology

Like the Zoroastrian and Gnostic belief systems that influenced it, Manichaeism portrays the universe in radically dualistic terms. The universe is constituted by two oppositional forces: light and darkness. Light corresponds to the spiritual realm, the realm of goodness. Darkness corresponds to the material and bodily realm, which is evil. History is to be played out in three stages: a golden age when the realms of darkness and light are distinct and separate; a middle age in which light and darkness battle for control of

the universe; and a final age in which the realms again will be separated, with the spiritual returning to the realm of light and the material being relegated to the realm of darkness. We presently are in the middle age, the time of the great cosmic battle between the forces of good and evil.

The realm of light is ruled by and equated with God, who is known as the King of Light or the Father of Light. The material realm is ruled by an independent and powerful Archon (God) of Darkness, or Hyle (matter), who uses the process of creation to trap light in a fleshly cell. The two gods are in cosmic battle, with the universe as their battlefield. Christ, the Buddha, and other prophets came to earth to impart to humans knowledge of how to release the light imprisoned within the material realm by the God of Darkness. In some Manichaean depictions, the creator God of Genesis *is* the Archon of Darkness, and Christ is the serpent in the garden, imparting good knowledge to Adam and Eve as a path to liberating the light. In China, Mani himself became known as the Buddha of Light.

Manichaean dualism and its resulting cosmic war are used to account for the existence of evil in the world: evil emerges in this realm when the Archon of Darkness wins a battle over the good, but not omnipotent, King of Light. All material creation is evil in its very conception. Humans, being spirit incarnate, are in a tragic and flawed state, subject to evil and ignorance through the imprisonment of their spiritual essences in fleshly bodies.

Prescriptions and Practices

Because during this life humans live in the corrupt, material realm, Manichaeism attempted to separate them from the actions of the Archon of Darkness as much as possible. Manichaean clergy (the Elect) were held to the highest standards of purity: sexual abstinence (since each new birth constituted another spirit imprisoned in the flesh and hence a victory for the forces of Darkness), vegetarianism (since meat was judged to be more highly impure than vegetables),



This Manichaean icon incorporates aspects of Zoroastrianism, Judaism, Christianity, and Buddhism.

refusal to participate in food preparation (since the chopping of even vegetables harmed the light trapped within them), and abstinence from all forms of violence against human or animal (for the spiritual light could be liberated properly from living entities only by knowledge, not by slaughter).

Of these priestly prohibitions (likely a reflection of the influence of Buddhism), only the dictate against all forms of killing was required equally of the Manichaean laity, making Manichaeism a completely pacifistic religion in theory. The actual practice was somewhat different, with Manichees who fell short of the ascetic ideals often attributing their failings to a determinism resulting from their role as pawns in the cosmic battle between the forces of light and darkness.

Manichaeism Today

In contemporary intellectual discussions, Manichaeism is most often used as a pejorative term, describing a radical dichotomy between good and evil that allegedly misconstrues the nature of reality. The U.S. Conference of Catholic Bishops, for example, writes that it is “a Manichean heresy to assert that war is intrinsically evil and contrary to Christian charity” (National Conference of Catholic Bishops 1983, 162). The historian Bernard Lewis claims that the tendency of some forms of modern-day Islam to demonize Christians and Jews as “enemies of God” is attributable to Manichaeism’s influence on Islam. Whether such accusations are fair or not, the Manichaean

depiction of the world as a place of cosmic conflict between the forces of the spirit and those of the flesh doubtless has had a profound influence on modern Jewish, Christian, and Muslim discussions of humans and the world.

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Manioc is a perennial shrub with tuberous roots that are valued for their carbohydrate content. Its leaves are a good source of vitamins A and B; they are also protein-rich and thus valued where protein sources are limited. Manioc is also used as a source of starch in the food, textile, paper, and other industries to produce glucose, monosodium glutamate, adhesives, plywood, and veneer.

The manioc plant (*Manihot esculenta* Crantz sub-species *esculenta*) is also known as “cassava” and “mandioca.” Some authorities suggest that there are two separate species: bitter manioc (*M. esculenta*) and sweet manioc (*M. palmata*). The U.N. Food and Agriculture Organization (FAO) disputes this, stating that the degree of bitterness, a factor relating to toxicity, varies geographically. Manioc is a member of the spurge family (Euphorbiaceae) and is a perennial shrub whose tuberous roots are valued for their carbohydrate content. Manioc is grown in agricultural systems that range from subsistent (providing food/fiber only for the farmer and his/her family) shifting cultivation to permanent cash-cropping in developing countries. It grows well up to elevations of 2,000 meters and tolerates low rainfall and nutrient-poor soils. Prior to consumption, bitter manioc must be boiled and pressed to remove cyanide compounds that are toxic to humans. The tuber is used to make flour, meal, flakes, and tapioca and may be fermented to produce an alcoholic drink. The leaves are consumed as a vegetable and are a good source of vitamins A and B. They are also protein-rich and thus valued where protein sources are limited. Manioc is dried to produce chips, and compressed pellets are used

for animal feed. It is utilized as a source of starch in foodstuff, textile, paper, and other industries to produce glucose, monosodium glutamate, adhesives, plywood, and veneer.

Manioc domestication and the crop’s subsequent spread are not well understood. Precisely where and when domestication occurred is unclear, and why it was domesticated is especially enigmatic because



Manioc (cassava) tubers provide carbohydrates for human diets and starches necessary to produce textiles, adhesives, and plywood.

I do not know that any writer has supposed that on this Earth man will ultimately be able to live without food. • **Thomas Malthus (1766–1834)**

of its toxicity. Five species of *M. esculenta* have been identified as the closest wild relatives of domesticated manioc, and *M. esculenta* Crantz subspecies *flabellifolia* (Pohl) and possibly *M. esculenta* Crantz subspecies *peruviana* (Muell. Arg.) Allem are the most likely progenitors. All are natives of Brazil and are present in western and southern Amazonia in forested areas and agricultural lands that have replaced humid forest. This environment could have been a primary locus for manioc domestication. One obstacle to pinpointing the source area, as for other root/tuber crops, is the susceptibility of root/tuber remains to decay, especially under humid tropical conditions. Thus remains are not well preserved in soils, sediments, or archeological contexts. Moreover, manioc may have been selected for purposes other than food; its cyanide content may have become valued as a poison with which to acquire fish, and the residual mash may have been recognized as a source of carbohydrate.

Portuguese invaders in the 1500s recorded that manioc was a staple crop of Brazil's indigenous peoples. From South America it was introduced to the west coast of Africa; it then spread into the humid interior, reaching the Congo River basin by about 1700. By 1800 the crop had spread to east Africa,

Madagascar, and then to Asia. The significance of manioc for the twenty-first century is reflected in the following FAO data: in 2000 the area planted was 17 x 106 ha; this produced 177 x 106 tons. The largest producers are Brazil, Nigeria, Democratic Republic of Congo, Indonesia, and Thailand. Manioc cultivation and consumption are likely to increase in the future for commercial and subsistence purposes; the latter will predominate in Africa as populations rise, although increasing use of manioc products in cities will also be important.

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See also Domestication, Plant and Animal; Food

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Manorialism

In basic terms preferred by most historians in the twenty-first century, *manorialism* defines one variant of the lord–peasant relationships that have existed throughout world history and is restricted to use in a medieval European time and place. It most commonly refers to the legal subjection of unfree peasants or serfs who were tied to the land they farmed, and who owed labor services to the lord.

Manorialism is the organization of rural economic production and socio-political relationships that characterized large parts of medieval western and central Europe from perhaps as early as the seventh century through the fifteenth century, with important aspects of the organization surviving until the French Revolution. The term comes from the division of rural land into manors, local legal jurisdictions subject to a lord (*seigneur* in French), whence the roughly equivalent term *seigneurialism*. The lord exercised legal and economic rights over the labor and produce of the peasant population living within the boundaries of his manor. Whether manorialism existed in other parts of the world—as a phenomenon, an ideal type, or a stage of development—is a vexing question in the writing of world history and complicates any assessment of manorialism in world history.

Characteristics of Manorialism

The basis of manorialism was the legal relationship of lord to peasant, which came in two basic forms. The first form, the one most closely associated with the word, was the legal subjection of unfree peasants

or serfs who were tied to the land they farmed and owed labor services to the lord. The second form, free peasants who rented from the lord, however, regularly constituted at least a portion of the population of most manors.

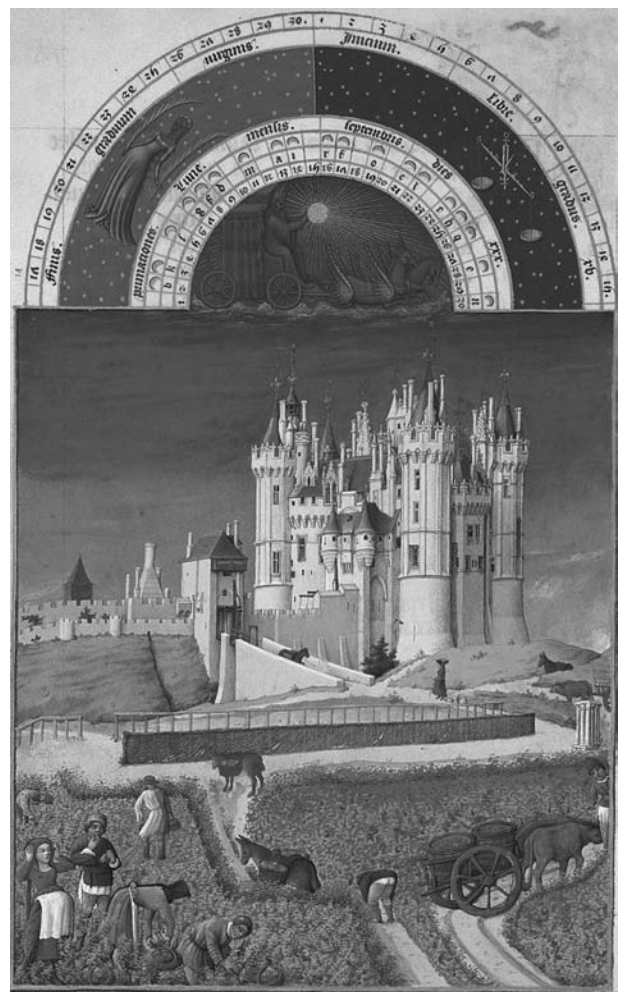
These two types of people were associated with three types of land that made up manors. First, *demesne* land was the part of the manor controlled directly by the lord. Its produce supported him and his dependents, either directly or indirectly through sale on the market. Second, dependent holdings obligated the holder to provide some combination of labor services on the *demesne*, a portion of the output of the holdings themselves, or a cash payment in lieu of either to the lord, the specific obligation varying according to the custom of the holding. Third, free peasant holdings owed monetary rent but no labor services or other dues, although the holder was still subject to the legal jurisdiction of the lord of the manor. Not every manor had all three types of land—some lords dispensed with any *demesne* holding, leasing all the land out to tenants, for example—nor was the fit between types of people and types of land always perfect. Peasants who were free in their person might hold dependent land and thus owe labor services, whereas serfs could also lease land that did not owe labor services. Manorial land types may also be divided by the use to which they were put, which might cross boundaries of individual holdings. Farming of grain and legumes occupied the bulk of most manors, but small plots were devoted to vegetable gardens, and fields lying fallow could support animals (usually pigs), which could also be grazed on forest land where the lord hunted game and on more extensive pasturage.

In addition to the income that the lord derived from the demesne and from rents, he charged for the use of large capital investments such as mills, bakeries, wine presses, and fish ponds, for the right to feed pigs in the woods, and seigneurial dues. These dues included the payment that peasant tenants owed the lord each time a holding changed hands by death (and in some cases by sale) and, above all, the income derived from the lord's court. Peasants had legal rights but paid to bring cases to court and often paid fines.

The somewhat artificial nature of manorial boundaries, corresponding to legal jurisdictions and not to the human geography of the countryside, may be seen in the fact that one manor might encompass several villages or parts of villages, whereas a village might be split between two (or even more) manors. Nor did manorial boundaries match local parish boundaries. Variation is, in fact, the constant in manorial organization because the proportions of free and unfree land, demesne, and free and unfree peasants and therefore of modes of economic exploitation differed from place to place and in the same place through time. Although the "typical" manor is thought of as belonging to a lay lord living in a manor house or even a castle, many manors were held directly by the king of the country and administered by a royal overseer (and indeed many lay lords, holding many scattered manors, employed professional managers as well), and a large number of manors were held by institutions, especially the Church. Church manors might be held by a collective such as a monastery or by an individual such as a bishop. Manorial management also reacted differently to wider economic changes. The rise of a more monetary economy during the eleventh and twelfth centuries usually stimulated a shift to rents and money payments but sometimes had the opposite effect: in much of central and eastern Europe, labor services became more burdensome over time as lords shifted demesne production to cash crops for sale in western Europe, a trend that extended well into the early modern period. Any generalizations about manorialism must therefore come highly qualified.

Origins and History of Manorialism

Manorial organization arose from the conditions of insecurity and decentralization of power that beset the Western Roman Empire from the fourth century on. In such conditions, small free farmers became more likely to commend themselves and their land to a powerful local landowner who pledged to protect his commended farmers in exchange for a portion of the produce and labor. In a period of declining



"September," from *Les Très Riches Heures du Duc de Berry*, painted by the Limbourg Brothers between 1413 and 1416. The peasants harvesting grapes work for the lord (seigneur) of Château de Saumur, shown in the background.



population such arrangements suited the powerful as well because they were able to lock in a secure labor supply for their estates and to consolidate the landholdings in particular areas. As the economy of western Europe contracted further between the fifth and ninth centuries, manorial organization also offered at least the ideal of local self-sufficiency, although few manors were ever completely self-sufficient, trading when possible for scarce necessities such as salt and metal.

The recovery of the European economy that began during the tenth century brought transformations to manorial organization. More money, increased trade, and the penetration of markets into the countryside tied most manors more and more into a hierarchical network of exchange that extended throughout western Europe and beyond. Reactions to the challenges and opportunities presented by the new economy varied but tended in the long run in western Europe to reduce serfdom and labor services in favor of a free class of peasant renters, although this reduction was balanced by the increasing burdens of serfdom in central and eastern Europe noted earlier; indeed, the changes in the two regions were linked by the market economy connecting them. The extent of the influence of market relations in western Europe by 1348 is demonstrated by the effect of the Black Death that hit that year: the resulting labor shortages led not to decreased peasant freedoms (as one would expect in a traditional society politically dominated by a coherent elite and as in fact did happen in places such as Egypt at the same time and had happened in Rome during the fourth century, as we've seen), but rather to higher wages and increased peasant freedoms. Serfdom effectively ended in England after the Black Death, and its burdens generally declined elsewhere on the continent without ending entirely. A monetized market in land and labor increasingly replaced manorial organization everywhere in strictly economic terms.

Manorialism survived the Middle Ages in the weakened form of seigniorial rights and dues. What survived of manorialism, in other words, was not the economic core but the legal structure of privilege and

political income that originally had facilitated the economic function but now lived a life of its own. This legal structure and related noble tax privileges were attacked by during the Enlightenment (a philosophic movement of the eighteenth century marked by a rejection of traditional social, religious, and political ideas and an emphasis on rationalism) by French *philosophes* under the misleading name “feudalism” and thus eliminated by the French Revolution. This Enlightenment blending of manorialism with feudalism was then compounded during the nineteenth century by the German political philosopher Karl Marx, who extended this conflation of the terms in analyzing the postclassical, preindustrial economy of Europe (and the rest of the world)—the economy of the period between the fall of Rome and the beginnings of the rise of merchant capitalism and the bourgeoisie in the sixteenth century—as the “feudal mode of production.” Unless one is using the (highly problematic) Marxist category, however, manorialism is not the same as feudalism, if the latter term has any coherent meaning. The difference may be summed up succinctly: the legal and economic relationship between free lords and mostly unfree peasants is manorialism; the legal and political relationship between free lords and free vassals is feudalism. The usually posited relationship between the two organizations is that manorialism is the economic organization that supported the political system of feudalism and that the two together constituted “feudal society.” In general, *manorialism* has been less damaged as a useful term by this blending than *feudalism* and remains a current analytic category in medieval European history.

Manorialism beyond Europe?

For world historians, however, the question remains: how useful is the term beyond the confines of medieval Europe? Undeniably some form of legal and economic relationship always tied peasants to elite classes in preindustrial societies. But do any such ties constitute manorialism? Or does a form need to share certain characteristics with the European phenomenon in order to qualify? Is a “feudal” political

structure one of the characteristics necessary to produce manorialism? The philosophical and methodological problems that such questions raise are both difficult and central to the process of studying world history.

The classic case of the extension of manorialism to a non-European society is in the history of Kamakura Japan (1180–1333), and it is tied intimately to notions of Japanese feudalism. In this case the political relationships among members of the Japanese warrior class rested on an economic base of *shoen*, or rural estates that generated income that was allotted to warriors, presumably as an analogue to the assignment of manors to European warriors for their support. But on close inspection manorialism and the *shoen* system share few similarities (nor was Kamakura Japan definably “feudal”), so use of the term creates more confusion than it sheds analytic light. Not only is the same true of other cases where manorialism has sometimes been claimed to exist, as, for instance, in Byzantium, czarist Russia, and some places in India, but also the entire intellectual approach to “finding” manorialism outside of Europe is suspect at its foundations. Of all the varied ways in which the extraction of surplus wealth from a subject peasant class by a political elite has been organized, why privilege a medieval European system in comparative analysis? The answer more often than not (for both manorialism and even more for feudalism) is simply that the European case has been studied first and most carefully and that sometimes on that basis the European case has been taken as paradigmatic (a typical example) for the world as a whole (this is the case with Marxist analysis of preindustrial economic organization globally and explains the importance of “feudalism” and its supposed mode of production to the historiography). Either one answer or the other, and especially both answers combined, are Eurocentric in the worst possible example of that historiographical disease. Taking Europe first tends to lead to “shoehorning”—fitting non-European cases into the European pattern for the sake of maintaining a comparison;

taking Europe as paradigmatic is simply untenable philosophically.

The majority of working world historians, therefore, would prefer to treat manorialism in a restricted way as simply one variant of lord–peasant relations in the scope of world history and restrict use of the term to its medieval European time and place. In this way manorialism provides valuable data for comparative studies and generalizations about lord–peasant relations but provides neither a model nor a framework for such studies.

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See also Feudalism

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Mansa Musa

(REIGNED C. 1312–C. 1337 CE, D. C. 1337)

RULER OF THE EMPIRE OF MALI

Mansa Musa, also called Kankan Musa, ruled the West African empire of Mali at its height. Under his reign, Mali expanded its territories and strengthened its control of West Africa's salt and gold trades.

Mansa Musa, despite his accomplishments as a ruler of Mali who expanded his empire's territory and trade, is best remembered for his extravagant hajj (pilgrimage) to Mecca in 1324, which fostered stronger diplomatic, cultural, and scholarly ties between Mali and Islamic North Africa. As a result, stories of Mansa Musa's power and wealth spread throughout the Islamic world as well as Europe, elevating the kingdom of Mali onto the world stage.

Mansa Musa's Mali emerged from the earlier empire of Wagadu (or Ghana, 300 CE–1240). Around 1050, Wagadu was invaded by the Almoravids (Berber Muslims), who swept through the Mauritanian Sahara, Morocco, and al-Andalus (Muslim Spain). After the Almoravid invasion (1054–1076), the empire of Wagadu fell apart. Around 1240, Sundiata, Mansa Musa's legendary Mandinka ancestor, defeated another regional power and former vassal state of Ghana, the Susu armies of Sumanguru, allowing Mali to emerge as the empire of Ghana's successor.

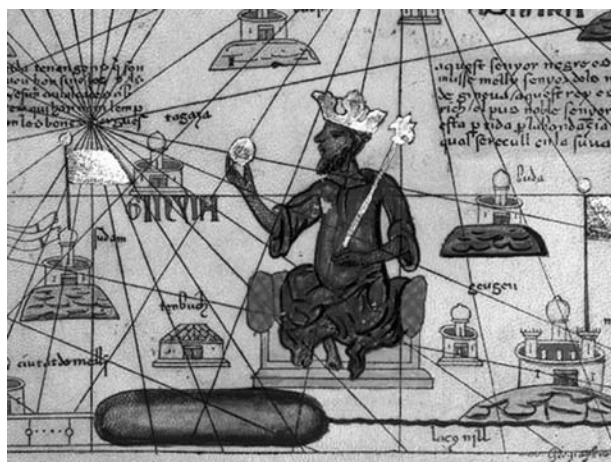
When Mansa Musa began his reign in 1312, Mali already controlled the trans-Saharan trade routes between the salt deposits of Taghaza (in the central Sahara) in the north and the gold-bearing lands of Wangara (southern savannah and forest regions of West Africa) in the south. During his reign, Mali strengthened its control of the trade routes by seizing important cities such as Gao and Timbuktu

(Tombouctou), on and near the Niger River, respectively, and Walata (in present-day Mauritania). His forces expanded westward to the Atlantic coast of Takrur (in present-day Senegal) and eastward beyond the Middle Niger.

Mansa Musa brought the western Sudan under a unified economic and legal system. Mali's successful extension of law and order came as a result of the unity provided by Mansa Musa's sponsorship of Islam. The administrators, traders, and many of Mali's urban subjects were Muslims. Islam provided a shared value system, which facilitated safe travel, especially for the Wangara gold traders, who operated freely, despite clan or territorial differences. The great Moroccan traveler Ibn Battuta (1304–1368/69), who traveled through Mali shortly after Mansa Musa's reign, marveled at Mali's great level of security.

However, Mansa Musa still ruled over a primarily non-Muslim population. During his travels, Ibn Battuta complained about the incorporation of indigenous Mandinka customs into court ceremonies, festivals, and daily life. In fact, Mansa Musa's legitimacy, in the eyes of the Mandinka, rested largely upon his descent from Mali's founder, Sundiata, who continues to be prominent in the oral traditions of Mali. Similarly, al-'Umari (1301–1349), a great chronicler from Cairo, noted that while Mansa Musa extracted tribute from the gold-producing non-Muslims of his empire, he was reluctant to force them to convert to Islam for fear of damaging his empire's economy.

Despite the blend of religious and cultural traditions present in Mali, there is little doubt concerning Mansa Musa's piety and commitment to Islam, as evidenced in his well-chronicled hajj in 1324. According to the North African historian Ibn Khaldun



This detail from the 1375 *Catalan Atlas* of the known world, drawn by Abraham Cresques of Mallorca, depicts Mansa Musa, ruler of the Mali Empire in the early fourteenth century, holding a gold nugget and wearing a European-style crown.

(1332–1406), he arrived in Cairo accompanied by a caravan that included some 12,000 servants and 80 camels laden with loads of gold dust. Al-'Umari explained how Mansa Musa's lavish spending depressed the price of gold in Cairo for the next twelve years.

While in Cairo, Mansa Musa was persuaded to visit the Mamluk sultan, al-Malik al-Nasir (reigned 1309–1340). Several Arab sources include an anecdotal account of their meeting. When asked to kiss the ground before the sultan, Mansa Musa flatly refused. However, he offered to prostrate himself before Allah, his creator. This clever compromise won him the respect of al-Malik al-Nasir. The sultan honored Mansa Musa as an equal, allowing him to sit at his side, and gave him robes of honor and the necessary provisions for his journey to Mecca.

Mansa Musa's sensational display of wealth, power, and piety helped to expand Mali's influence beyond West Africa. Under Mansa Musa, ambassadors were established in both Egypt and Morocco. Mansa Musa also brought Egyptian scholars to Mali. With the help of learned men such as the Andalusian poet and architect Abu-Ishaq Ibrahim-es-Saheli (died c. 1346 CE), Mansa Musa built a royal palace and new mosques in Timbuktu and Gao, which introduced the distinctive burnt mud brick

and wooden-post architecture found throughout the western Sudan.

North African scholars also helped to encourage the establishment of Islamic schools. Mansa Musa sent students to study Sunni Maliki Islamic law in Fez and Cairo, and North African scholars came to Niani, Timbuktu, and Djenne. This exchange of scholars laid the foundations for the creation of the great Sankore University in Timbuktu, which became famous throughout the Islamic world during the time of the Songhai Empire (flourished 1450–1591). Therefore, Mansa Musa's reign and pilgrimage were essential in the development of Islamic scholarship in West Africa.

Even in Europe, Mansa Musa's pilgrimage aroused interest. The famous *Catalan Atlas*, created by Abraham Cresques in 1375, depicts Mansa Musa seated on a throne, holding a nugget of gold. The *Catalan Atlas* announced Mansa Musa's wealth, the presence of a sophisticated state in the African interior, as well as the commercial opportunities available in West Africa.

Mansa Musa's reign brought prosperity and security to the West African empire of Mali. He skillfully administered one of the largest empires in the fourteenth-century world. He fostered enduring cross-cultural interaction with the Islamic world while still maintaining many of Mali's traditional religious and cultural practices. Through trade, diplomatic, and scholarly ties with North Africa, Mansa Musa's reign exposed West Africa to the world beyond the Sahara. Thus, Mansa Musa is considered one of the greatest precolonial statesmen in African history.

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See also Africa; Islamic World; Mali

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Mao Zedong

(1893–1976)

LEADER OF THE CHINESE COMMUNIST REVOLUTION

Mao Zedong (1873–1976) was a founding member of the Chinese Communist Party and the architect of China’s Communist revolution. Some of his socialist policies failed and caused much suffering and devastation for the people, but his legacy as a firm nationalist leader and the “founding father” of an independent China still inspires post-Mao generations.

Mao Zedong, reared in a middle-class peasant family in central Hunan Province, became a leading architect of China’s twentieth-century Communist revolution. Inspired by the antiforeign nationalism of the May Fourth Movement, he became a founding member of the Chinese Communist Party (CCP) in 1921. When cooperation with the Guomindang (GMD, or Nationalists) collapsed in 1927, Mao retreated to the countryside. Mao’s view that China’s peasants, as the most oppressed social class, were the most revolutionary, clashed with the more traditionalist Communist views of the other CCP leaders, who were focused on China’s rather small industrial-worker class. From 1927 to late 1934, Mao championed the peasant struggle, building with Zhu De (1886–1976) and others an army that used guerilla tactics against GMD forces. Forced to flee from their bases in southeastern China, Mao and others led the army to northwestern China on what became known as the Long March. In 1935 Mao became the chairman of the CCP, and his views on the nature of China’s revolution became dominant.

Japan’s takeover of Manchuria in 1932 and its war with China in 1937 shifted Mao’s attention from internal struggle toward the external imperialist threat. While the CCP fought anti-Japanese rear-

guard actions from 1936 to 1945, Mao formulated his theoretical views of a socialist revolution in China. He departed from traditional Marxist doctrine in the emphasis he gave to the role of peasants, but he retained the concepts of class struggle and the vanguard role of the party. His views were enshrined in the CCP’s Seventh Congress constitution as Mao Zedong Thought.

Nationalist spirit spread support for the CCP. Halfhearted attempts at coalition government in 1945 presaged civil war against the GMD. CCP victory led to Mao’s founding the People’s Republic of China in the fall of 1949. By the summer of 1950, China was drawn into Cold War struggles in Korea (Mao’s son was killed in U.S. bombing there) and fought U.N. forces to a draw, setting the stage for anti-Americanism over continued U.S. support for the GMD government in Taiwan.

Domestically, Mao turned attention to China’s socialist transformation. First on the agenda was land reform. Keeping the promise of “land to the tiller” made by the Nationalist revolutionary Sun Yat-sen (1866–1925), Mao immediately pushed policies that by 1955–1956 resulted in the basic collectivization of newly distributed land into agricultural producers’ cooperatives. Following the Soviet Union’s definition of socialism, China also achieved basic state ownership of industry by the time of the Eighth CCP Congress in 1957. While other CCP leaders, especially Liu Shaoqi (1898–1969) and Deng Xiaoping (1904–1997), were ready to consolidate early achievements, Mao, disturbed by the problems of corruption and bureaucracy, first invited then quashed criticism from intellectuals in the Hundred Flowers initiative and ensuing campaigns against those deemed



Visitors flock to Mao's tomb in Tiananmen Square, Beijing. Photo by Chris Howell.

reactionary. He argued that consolidation could result in loss of momentum, even reversal, by entrenching a new generation of elites. Mao's response, the Great Leap Forward (1958–1959), aimed at creating a “new socialist man.” Rightist intellectuals and others would be reformed through physical labor, especially at the ill-conceived backyard steel furnaces which, he promised, would permit China to overtake Great Britain in iron and steel production. This mass campaign also aimed at transferring technology to the countryside using the new People's Communes as the social, economic, and political interface with the center. Famine and failures resulting from the Great Leap created the first serious break within the CCP leadership and some disillusion with Mao among the general Chinese population.

Relations with the Soviet Union also suffered from these failed policies. Criticism of Mao's perceived departures from Soviet models resulted in Soviet withdrawal of technical experts, which disrupted major infrastructure projects. Mao retaliated by denouncing the Soviet Union for following the “capitalist road” and defended his policies as the logical next step in the world socialist movement, a position that exacerbated the Sino-Soviet split. At home, Mao condemned many within the party for taking the capitalist road and for failing to continue the revolution; in response, he launched the Cultural Revolution (1966–1976). Closing schools, mobilizing the masses, especially Red Guard youth, and using his own cult image, he hoped to create a generation of

“revolutionary successors.” Attacks on authority, however, threatened chaos. Mao sent students to the countryside to “learn from the peasants” and institutionalized the Cultural Revolution at the Ninth Party Congress, establishing Revolutionary Committees in factories, government offices, and communes.

China's admission to the United Nations, Mao's betrayal by Lin Biao (1907–1971), his intended successor, and continued Sino-Soviet border disputes prompted Mao to invite U.S. president Richard Nixon to China in 1972, despite U.S. involvement in Vietnam. From 1972 until Mao's death in 1976, ideologues, including Mao's wife Jiang Qing, tried to assert power under cover of Mao's name.

Mao's death concluded an era of radical ideological leadership in China. Official assessment of his life is that he was 70 percent correct and 30 percent in error (the same as was given to Stalin in the USSR). But Mao's legacy as a firm nationalist leader and the “founding father” of an independent China still inspires post-Mao generations. Mao's image still dominates Tiananmen Square where his preserved body lies in state. While the bodies and images of Soviet leaders have been buried and removed from public places, Mao's remains on display, and Mao souvenirs are still popular items for both Chinese and foreign tourists. Some superstitious Chinese claim magical protective qualities associated with the displaying of his image.

In addition to the well-known influence of Mao's ideas of “people's war” using guerrilla tactics adopted

*We must learn to do economic work from all who know how, no matter who they are.
We must esteem them as teachers, learning from them respectfully and conscientiously.
We must not pretend to know when we do not know.* • **Mao Zedong (1893–1976)**

by Ho Chi Minh in Vietnam, there are also Maoist groups such as the Sendero Luminoso (Shining Path) in Peru, the Naxalite movement in India, and recently in Nepal under the leadership of the self-proclaimed Maoist leader Comrade Prachanda, the nom de guerre of Pushpa Kamal Dahal. These have also emphasized Mao's strategy of a peasant-led anti-imperialist anti-bourgeois struggle for power rather than his failed economic development model.

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See also China; Revolution—China; Revolutions, Communist

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Marx, Karl

(1818–1883)

GERMAN POLITICAL PHILOSOPHER

Karl Marx's extensive critique of capitalism as an economic and social system driven by class conflict, exploitation, and alienation—and his vision of its replacement in the logic of history by a humane, egalitarian, and democratic Communism—found worldwide resonance after his death in 1883; it fundamentally altered the way large numbers of intellectuals, workers, and peasants regarded historical change and social and political struggle.

The power of Karl Marx's critique and analysis of capitalism, and his fervent call to action to replace it with his egalitarian ideal of communism, inspired revolutionary parties and movements to overthrow governments in Russia, China, Vietnam, Cuba, Zimbabwe, and Mozambique. The success of those revolutions shaped key features of the twentieth-century world and called more attention to his writings, but Marx himself would probably not have endorsed much of what was done in his name. When he read how French Marxists were applying his ideas he told his son-in-law Paul Lafargue, "If anything is certain, it is that I myself am *not* a Marxist!" (Marx and Engels 1993a, 353).

With interests spanning philosophy, journalism, political agitation, economic theory, and satire, Marx had an astonishing capacity for rapidly assimilating everything he read and for setting his ideas on paper. In addition to keeping voluminous notebooks, he published major works in economics, philosophy, and political analysis. A profound and systematic thinker who was by nature an optimist, Marx believed that ideas should be employed to change the world and that, if theory is to be at all meaningful, theory has

to inform practice. In line with that thinking, he was active in radical politics most of his life.

As a young man, Marx studied philosophy and received a doctorate from the University of Berlin in 1841. Because his radical ideas barred him from a university career in Prussia (the largest German state), he went to work as a journalist in Cologne, but Prussian authorities closed the popular newspaper he edited in March 1843. Immigrating to Paris, he became attracted to French socialist groups and met his lifelong collaborator, the German socialist Friedrich Engels. Expelled from Paris for subversive journalism in 1845, Marx traveled to Brussels, Belgium, where he founded Communist correspondence committees and continued writing. Involved in an organization of radical artisans, in 1848 he and Engels published what became his most widely read work, the *Communist Manifesto*. In it Marx outlined his views on the necessity of economic and political revolution, the role of modes of production, exploitation and class struggle in history, and the inevitability of Communism arising out of capitalism. Soon after its publication, revolutions exploded across Europe, overthrowing or threatening governments in France, Austria, Prussia, and Belgium. Marx moved back to Cologne to edit another popular newspaper, but authorities closed it as well, and he fled Germany in 1849, finally landing in England, where he remained for the rest of his life.

Believing that fresh revolutions were about to break out in Europe, Marx wrote articles about the significance of the 1848 revolutions and was active in the Communist League in London. Disagreements about the timing of a revolutionary uprising led to a split in the league, and Marx retired from active



Portrait of the young Karl Marx, who received his doctorate from the University of Berlin in 1841.

politics for the next decade. Marx spent most the 1850s and 1860s researching history, politics, and economics in the British Library, taking volumes of notes for his monumental study of the operation and history of capital, the first volume of which he published in 1867. During this time his family lived in near poverty, and Marx declared that his dedication to finishing *Das Kapital* (*Capital*) caused him to have “sacrificed health, happiness, and family” (Marx and Engels 1993b, 366). Such an admission must have pained him greatly because his greatest joy in life was his family. A gruff and blunt public debater, Marx was considerate, generous, and playful within his family. His only regular source of income, however, was his articles on contemporary politics for the *New York Tribune*, a radical newspaper with the largest circulation in North America. Marx also received money from Engels to make ends meet, and his income would have been adequate for his family, but he and his wife, Jenny, had bouts of extravagance

and generosity that caused continual financial crises. With a sense of irony Marx would often reflect that he, who wrote so much on capital, had so little talent in managing it. In 1864 an inheritance from his mother and a bequest from a friend, along with an annuity given him by Engels in 1869, finally brought financial relief.

Marx cofounded the International Working Men’s Association (also known as the “First International”) in 1864, bringing together revolutionaries from Europe and North America who sought the overthrow of capitalism and the establishment of an economic and political commonwealth. Marx’s health deteriorated after a partial stroke in 1873, and he became less and less capable of the sustained intellectual and political effort that had characterized his life.

Marx never finished *Capital*, his life’s work. Volumes 2 and 3 were left as manuscripts, which Engels edited after Marx’s death, and the other five volumes that Marx envisaged never were even drafted. Still, Marx will be remembered for the scope of his historical and social vision as well as for his contributions to economic and social thought and to revolutionary theory and practice. As a young man he once mused, “The philosophers have only *interpreted* the world, in various ways; the point, however, is to *change* it” (Marx and Engels, 1993c, 3). His work inspired countless others to see his point.

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See also Communism and Socialism; Lenin, Vladimir Ilyich; Marxism; Political Thought

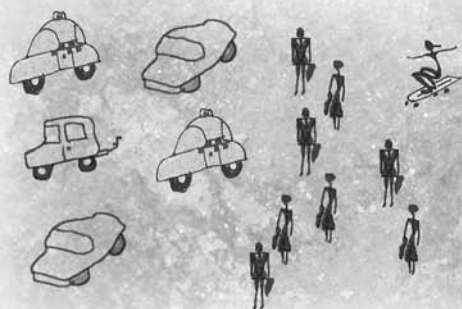
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Workers of the world unite; you have nothing to lose but your chains. • **Karl Marx (1818–1883)**

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Marxism

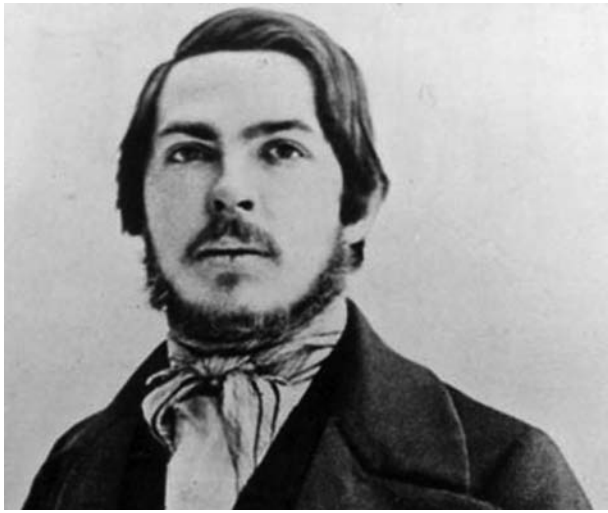
Marxism is an economic, social, and political theory or system based upon the philosophies of the nineteenth-century Germans Karl Marx and Friedrich Engels. Socialism and communism are particularly prominent strains of Marxist thought. Central to Marxism is the aim of achieving revolutionary social change through an ongoing class struggle between labor (the proletariat) and the owners of capital.

It has been said that the three most important ideas that shaped the twentieth century came from the English naturalist Charles Darwin, the Austrian neurologist Sigmund Freud, and the German philosopher Karl Marx. Darwin's theory of evolution and Freudian psychoanalysis both fundamentally altered humanity's understanding of itself. Marx, his ideas, and what his followers did with his ideas were among the most significant factors shaping the political and economic course of the twentieth century. While some have declared Marxism a flawed analysis and a failed ideology, the proclamation of the death of Marxism may yet be premature, as witnessed by the burgeoning antiglobalization movement.

Marx's ideas influenced not only the rise of unionized labor and the welfare state, but also the Russian Revolution, communism, socialism, and Zionism; even the ethic of the kibbutz owes a debt to Marx. The political consequences have been immense. Fascism arose as a reaction to communism, and millions of people died in World War II (1939–1945) because of it (estimates vary widely, from 50 to over 80 million, of which only about 25 million were military casualties). Following the war, the geopolitical competition between capitalism and socialism—the Cold

War roughly dividing East and West—defined the contours of world politics for the best part of half a century. The formation of the State of Israel in 1948 continues to shape the politics of the Middle East to this day. The Chinese Communist Revolution of 1949 still affects the lives of over a billion people. Worldwide, postwar anticolonial struggles for independence were often cast in the Marxist rhetoric of anti-imperialism, class analysis, and socialist revolution. But the failures of the Soviet Union either to deliver goods or to fulfill Marx's vision of a humanistic society led to its implosion in 1991. Still, Soviet Communists managed to transform a backward, rural society into a major industrial power, despite external pressures that strained its budgets and sustained dictatorships.

Despite having considerable intellectual, political, and even commercial appeal, the term "Marxist" is resistant to precise definition and is somewhat obscured by the range of interpretations laying claim to the title of "true" Marxism. Broadly speaking, Marxism refers to any form of idea that demonstrates its fidelity to the thought and influence of Marx's literary-philosophical heritage. A Marxist belief "is one held by anyone, academician or political stalwart, who thinks or can persuade others that the belief in question is in accordance with Marx's intellectual or political legacy" (Carver 1991, 23–24). Some prefer a more strict interpretation of Marxism that refuses to allow for any perceived deviations from Marx's own writings (the term "Marxian" is sometimes used to designate ideas that can be traced back directly to Marx). For our purposes, we will be content to use "Marxist" or "Marxism" to describe the general trajectory and impact of Marx's influence through his writings and his later interpreters.



Portrait of the young Friedrich Engels, Marx's lifelong collaborator.

Few thinkers have enjoyed the influence, polarizing appeal, and notoriety of Karl Marx. Marxist thought has affected every aspect of the social sciences, including religion, history, sociology, and politics, and has permeated discussions of the individual and society for almost two hundred years. Important Marxist themes include “historical materialism” (the concept that events in history are driven by economic concerns and class conflict), and the dialectic between the bourgeoisie and the proletariat.

Karl Marx: Background and Philosophy

Marx was born in 1818 in Trier, Germany, and educated in Prussia. After studying law in Bonn, he attended the University of Berlin and earned his doctorate in philosophy at Jena in 1843. Like most philosophy students at that time, he was much influenced by Georg Wilhelm Friedrich Hegel (1770–1831), the German idealist philosopher who stressed the primacy of ideas—that consciousness precedes the objects of consciousness. Encompassing theories of alienation, domination, and historical change, Hegel argued that through reason people could overcome domination and find freedom. Ludwig Feuerbach

(1804–1872), Marx's teacher, argued for a more materialistic interpretation of Hegel, rooted in human sensory experience.

Marx became a member of a group of radical students, the antireligious Young Hegelians. As a radical, he was unable to find a teaching position so, turning to journalism, he became the editor of *Rheinische Zeitung* and also served as a correspondent for the *New York Tribune*. At about this time, he met the political philosopher Friedrich Engels (1820–1895), who became his lifelong companion, colleague, and often patron. Marx's early work consisted of critiques of Hegel's idealist philosophy as removed from people's lives, and of the materialism of Feuerbach's elaborations of Hegel. Marx offered commentaries on religion and politics. One of his important early writings concerned how labor under capitalism led to alienation: how one becomes estranged from one's work and the products of that work, estranged from others, and, indeed, estranged from one's very humanity.

Marx's work proceeded to offer materialist interpretations of history and of then-contemporary French politics, such as its civil wars and the 1851 coup d'état of Napoleon Bonaparte's nephew Louis Bonaparte (who then took the reign name Napoleon III). Most important, Marx began his studies of the capitalist political economy. In 1848, he penned the *Communist Manifesto*, which would become the foundational document for Communist parties. In it, Marx offered a critique of capitalism: while he praised its power to liberate people from feudalism, he pointed to the inherent injustices of its class system and called for workers to revolt and overthrow the forces of capital. He soon moved to London where he wrote on French history, class struggle, and political economy, arguing that the eighteenth- and nineteenth-century theories of the British economists Adam Smith and David Ricardo, among others, were in fact ideologies that merely served to legitimate the activities of the bourgeoisie.

Marx observed the human species in terms of Darwinian evolution, asserting that humans are primarily “workers” (*Homo faber*) who interact with their created tools in order to survive. For Marx,

competition is not the natural state of being but rather an artificial byproduct of the capitalist system, thus producing an ongoing imbalance of materials and wealth. Within this very material struggle are the seeds of “class struggle”; certain individuals will inevitably elevate themselves above their fellow humans via their domination of the profit from their labor, creating an imbalance of power and the roots of discontent for those who are deprived of the surplus. The “privileged class” must therefore mold “consciousness itself” (i.e., human ideas about what is right/wrong or attractive/unattractive and what it is that humans should have and should want) in such a way as to benefit their unending pursuit of and mastery over surplus capital.

In 1864, socialists and communists formed the International Working Men’s Association. Its world congress in Geneva was the first Internationale, or organization of socialist groups. Marx assumed leadership of the organization and devoted a great deal of effort on behalf of workers. Marx proceeded to research and write his magnum opus, *Das kapital* (*Capital*), a book that is still widely studied and debated. If Marx had become a professor of philosophy who approached debate academically, he might have been regarded as merely the most important post-Hegelian philosopher. But the power of his intellect, the passion of his politics, and his vision of overcoming capitalism and its adversities would attract many followers seeking to change the face of politics and social life the world over. Timing is also important: at certain moments, social conditions enable certain ideas to flourish, and a leader’s influence is magnified. Such was the case with Marx.

Marxism as Theory and Praxis

Marx began writing as industrialization was rapidly changing the social fabric of Europe. While new forms of production, transportation, and finance created enormous wealth for the owners of capital, such as factories, banks, railroads, and steamships (and profited others such as wholesalers), for the great masses of peasants who came to cities in search of

jobs the working and living conditions were harsh and inhumane. Their jobs paid little, their hours were long, tenement conditions were unhealthy and dangerous—indeed, brutal. It was in this context that Marx began to criticize capitalism as not only economically exploitative but also morally bankrupt, dehumanizing, and alienating to workers. When people sell their labor on the market, said Marx, labor becomes a commodity. When people sell themselves as commodities, when they own neither the tools nor the raw materials nor the fruits of their labor, they become powerless, devoid of their humanity and shorn of community. Such people often turn to prayer, which Marx saw as the expression of “real suffering.” But religion, controlled by elites, cannot ameliorate the economic basis of that suffering, said Marx. Rather, it acts as the “opiate of the people,” promising relief in the next life and sustaining class-based oppression in this one.

In his most accessible work, *The Communist Manifesto*, Marx presented his theory of history as class conflict, his critique of domination under capital, his analysis of why capitalism should and will be overcome, and the concrete measures that would be instated upon the overthrow. The agents of history are classes and class interests, Marx argued, not individual kings, generals, or presidents, and surely not religion, political ideas, or cultural factors, all of which merely disguise ruling-class interests. He claimed that Communism represents the “real interests” of the working classes whose labor creates the wealth of the bourgeoisie. Capitalists prosper while workers are exploited and alienated. Furthermore, capital creates a *lumpenproletariat*, a surplus population of the jobless—beggars, thieves, and prostitutes.

Marx was not the first to criticize capitalism and suggest alternatives. The three primary influences on Marx were Hegel, the British political economists already noted, and the French socialists of the eighteenth and nineteenth centuries. The French socialists had deplored the living conditions of the workers and argued for communal ownership. Claude-Henri de Rouvroy (known as St. Simon) had sketched a materialist theory of history while Charles Fourier



suggested a vision in which work and play were joined and human dignity realized. Pierre-Joseph Proudhon declared that property was theft and the basis of modern misery. As a system builder like Hegel, Marx absorbed these ideas and developed a comprehensive, materialist explanation of power and ideology.

For Marx, history as commonly understood was obscured by ideologies that masked the economic and political motives of elites. He provided a way of comprehending the general misery of the poor in a broader context. In the nineteenth century, the poor were commonly seen as lazy, impulsive, and morally deficient and thereby *they*, and not the class system, were deemed responsible for their adverse conditions. In *Das kapital* Marx demonstrated the nature of exchange value (goods produced for the market to be exchanged for money as opposed to being used by the producer and/or traded for other goods), the valorization process (profit based on exploitation), and “commodity fetishism”—the way in which goods produced and sold for the market were embodiments of social relations. In so doing, Marx transformed the way people understood the world thereafter.

Perhaps the most politically salient part of Marx’s work was his analysis of capitalism’s inherent contradictions, which he thought would lead inevitably to its overthrow. Business cycles and crises of overproduction would either demand imperial expansion or create unemployment, forging workers into a revolutionary class, whose eventual victory would overturn the economic order and abolish private property. Communism would usher in an era of freedom, an order that acknowledged all people’s needs, allowing them to realize their full creative potential and find meaning, recognition, community, and empowerment.

Comprehensive and sophisticated, Marx’s analysis “put it all together” and offered an ameliorative vision that held considerable allure. For the growing masses of impoverished workers and those sympathetic with workers’ struggles, Marx provided a rationale and agenda for the revolutionary change that he thought inevitable. In the style of many great leaders, he gave people hope. The *Internationale*, the anthem of the

Communist Party, promised that a “better world was in sight.”

Marx’s Political Influence

To temper the lure of Communism, Europe’s bourgeois and monarchist governments initiated a variety of reforms in the wake of the 1848 revolutions and the brief rule of the Paris Commune in 1871. Indeed, the first social security legislation laws, unemployment compensation, and pensions were passed in Germany in 1872. Marx’s own analyses hinted at ways in which workers could be pacified by socialist reforms providing material benefits. But as wage laborers, they would remain alienated and dominated—even if less harshly. The very threat of Communism disposed the capitalist classes first to initiate reforms, unions, and entitlements (such as pensions and unemployment insurance) that would benefit the workers, and second, to promulgate ideologies such as consumerism and nationalism that would mask the class interests of the bourgeoisie as the “general good” and secure their hegemony by obscuring the operations of class.

After Germany established social security benefits, workers have been ever less than enthusiastic about toppling governments that provide unemployment benefits and pensions. (In the twentieth century, consumerism would further dull revolutionary impulses.) But Marx’s ideas and theories of revolution would be embraced by revolutionaries in preindustrial societies struggling against either colonial rule or wealthy elites.

Among Marx’s more important successors would be Vladimir Ilyich Lenin (1870–1924) and Leon Trotsky (1879–1940), who led impoverished masses of Russians and the disaffected czarist armies in a revolution to form the first major Communist government. Following World War II, Marxism inspired a number of “peasant revolutions,” the most important being the Chinese revolution led by Mao Zedong in which the Communists eventually defeated Chiang Kai-shek’s Nationalists. There were a number of other societies and revolutionaries influenced by Marxism, including Ho Chi Minh (Vietnam), Tito (Yugoslavia),

Fidel Castro (Cuba), and Che Guevara (Congo, Cuba, and Latin America). Each movement blended Marxism, nationalism, and peasant struggles into liberation movements seeking autonomy from colonial rule and/or capitalist domination; not all such movements were successful, some of them needlessly bloody and violent.

Communism as practiced in the USSR bore little relationship to Marx's vision of a just society. For a number of reasons, primarily due to the totalitarian leaders who claimed the mantle of Marx in an attempt to legitimate their tyranny, and partly due to pressures from the West, come 1991 the Soviet Union collapsed. China, meanwhile, had embraced an increasingly open market economy to become one of the most powerful countries in the world. Marx should not be blamed for the totalitarian nature of formerly existing socialism; he is no more responsible for the gulags, secret police, and political murders of these dictatorial regimes than Christ was responsible for the Inquisition. For many contemporary Marxists, the humanistic side of Marx and his critiques of alienation, exploitation, and domination remain a salient warning of the dysfunctions of global capitalism.

Marxism and the Future

Marx and Marxist thought have remained influential throughout the nineteenth and twentieth centuries through the work of thinkers and social theorists such as Max Weber, Talcott Parsons, György Lukács, Antonio Gramsci, Louis Althusser, Rosa Luxemburg, Ernst Bloch, Walter Benjamin, the Frankfurt school, Antonio Negri, and Slavoj Žižek, to name just a few prominent intellectuals. So, too, a number of feminist theorists began to see gender stratification in terms of class and ideologies of dominance—in this case, patriarchies. Similarly, while the field of economics in the twenty-first century is largely dominated by neoliberals, some contemporary economists have been much influenced by Marx, such as Joan Robinson and Richard Wolff, valuing equality and redistribution. Consequently, class analysis, the economic basis of power, and the roles of ideology, alienation,

reification, and commodity fetishism are fundamental concepts for a number of disciplines in the social sciences, arts, and literature.

The power of Marxism as an intellectual influence has often been said to be on the wane. But Marxism has been pronounced dead a number of times—even as throughout the world growing numbers of people suffer from the adverse consequences of neoliberal globalization. Marx suggested that the use of machines and the overproduction of goods would lead to economic crises; indeed, this does seem to be a serious problem requiring urgent attention in the early twenty-first century. Millions have mobilized to challenge and contest contemporary forms of global capitalism. While these movements represent the diverse interests of workers, feminists, environmentalists, gay activists, and so on, one of the common themes heard across this wide spectrum of voices is a concern for the onerous consequences of global capitalism—often articulated in Marx's language of class analysis and colored by his humanistic vision. The vast numbers of writings critical of globalized capital, the widespread antiglobalization demonstrations, and the World Social Forum under whose banner 100,000 activists and intellectuals gather regularly all affirm the continued influence of Marx as one of the most significant and important thinkers in history.

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See also Marx, Karl

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Mass Media

Mass media—modes of communications intended to reach large numbers of people—have played an important role in world history, rousing populations in various times and places to resist governmental or other oppression, and calling those in power to account.

Communications media that are geared to reaching the masses—mass media—has been a force in social, political, and cultural change throughout history. It is not surprising that in many countries rulers have refused to permit a free press, and journalists have even been killed for speaking out. In some countries the media are nothing more than the official voice of those in power, whereas in others, the media have served as the voice of resistance or even revolution.

The First Print Mass Media

Perhaps the first newspaper was the *Acta Diurna* (Daily Transactions) in ancient Rome. Julius Caesar decided to make the proceedings of the government available to the citizenry, and starting in 59 BCE, they were posted in public places. Later versions were called the *Acta Urbana* (Transactions of the City) or the *Acta Senatus* (Transactions of the Senate). These news sheets were hand-copied by scribes, probably on papyrus, and they were undoubtedly subject to government oversight and control. Good news about the Roman Empire was much more likely to appear in writing than bad news. In addition to the daily doings of those in power, the *Acta* contained birthday and wedding announcements and information about new buildings being dedicated. Later emperors expanded

the role of the *Acta*, using them to disseminate favorable stories about themselves or unfavorable stories about particular rivals. The *Acta* seem to have been very popular and to have reached a wide audience; those who could not read stood waiting until someone (a professional town crier or literate passerby) would read the news aloud. The orator and historian Tacitus (c. 56–c. 120 CE) wrote in his *Annals* that people from all walks of life eagerly read the various *Acta*, and political leaders found them an invaluable resource.

Another ancient empire that made use of something resembling a newspaper was Tang-dynasty China (618–907 CE), where the *Di bao* (Court Gazette) contained news gathered by various members of the governing elite. Originally intended for members of the imperial court, it was later expanded to include the intellectuals, but unlike the *Acta*, it was not posted anywhere that the general public could read it. By the time of the Ming dynasty (1368–1644), newspapers received wider dissemination, but the elites still wanted information restricted to a select few and wanted control over what the general public read. It was not until the 1800s that the newspaper industry in China began to flourish.

Early European News Sources

Although the Chinese inventor Bi Sheng had developed a method of printing using movable wood blocks around 1041, Europe did not make use of moveable type until Johannes Gutenberg developed his printing press around 1438.

Prior to the mid-1800s, European publications that reported on news events were called by various names.

One of the oldest forms of publication to survive is the *coranto*; the first *coranto* was published in Amsterdam in December 1620 and was more of a pamphlet than what we would today call a newspaper. Most of the *corantos* were published in Dutch. They focused on business news and on political news that might affect business. Amsterdam was a very cosmopolitan city, with merchants who traveled throughout the known world. They wanted to know what was going on in other countries where they might engage in commerce. As a result, *corantos* became very popular; at one period in the mid-1600s there were as many as eight weeklies or biweeklies, bringing news from Africa, Asia, Italy, Germany, and elsewhere.

In Italy there was the gazette, a weekly news sheet that seems to have originated in Venice in the mid-1500s (although some historians question the date, as they also question whether the sheet really took its name from the coin *gazeta* with which one paid for it). Gazettes, like *corantos*, contained business and political news and were read both by the general public and by the many merchants who came to Italy. In Germany there were weeklies as early as 1615, and a daily newspaper, the *Leipziger Zeitung* (Leipzig Newspaper), began in 1660. These newspapers covered politics, culture, and science, and provided important information during the Thirty Years' War. But the German press was frequently subjected to restrictions by the government.

In Paris, as early as 1488, there were *occasional*—government leaflets about four pages in length. Mostly published in Lyon and Paris, they were mainly brief summations of what the government was doing. From about 1529 there were also the *canards*, publications of a more sensational and sometimes polemical nature. French exiles living in Amsterdam published broadsides that criticized the intolerance of King Louis XIV; these publications were called *lardons* (“jibes”), and the exiles, mostly Huguenots, had them smuggled into France during the late 1690s. Early in 1777, Paris gained its first daily newspaper, the *Journal de Paris* (Newspaper of Paris), but the government maintained strict control over what could be printed. An underground press existed for

dissenting voices. There were also some women who participated in journalism, publishing a monthly newspaper called the *Journal des Dames* (The Ladies' Newspaper), which first appeared in 1759. Its editors believed in “the female public's right—and obligation—to be informed about controversial matters” (Landes 1988, 58–59). Unfortunately, as with other newspapers of that time, it frequently encountered government censorship, as well as resistance to its call for greater female participation in public life. It ceased publication in 1778.

In Spain under King Ferdinand and Queen Isabella, all printers had to be licensed. The first Spanish newspaper was probably the *Correos de Francia, Flandres y Alemania* (News of France, Flanders and Germany), founded by Andres de Almansa y Mendoza in 1621. In Spain's colony in Mexico, the *Gaceta de Mexico y Noticias de Nueva España* (Mexico Gazette and the News of New Spain), regarded by some as Mexico's first newspaper, appeared in January 1722, published by Juan Ignacio María de Castorena y Ursúa, who later became Bishop of Yucatan.

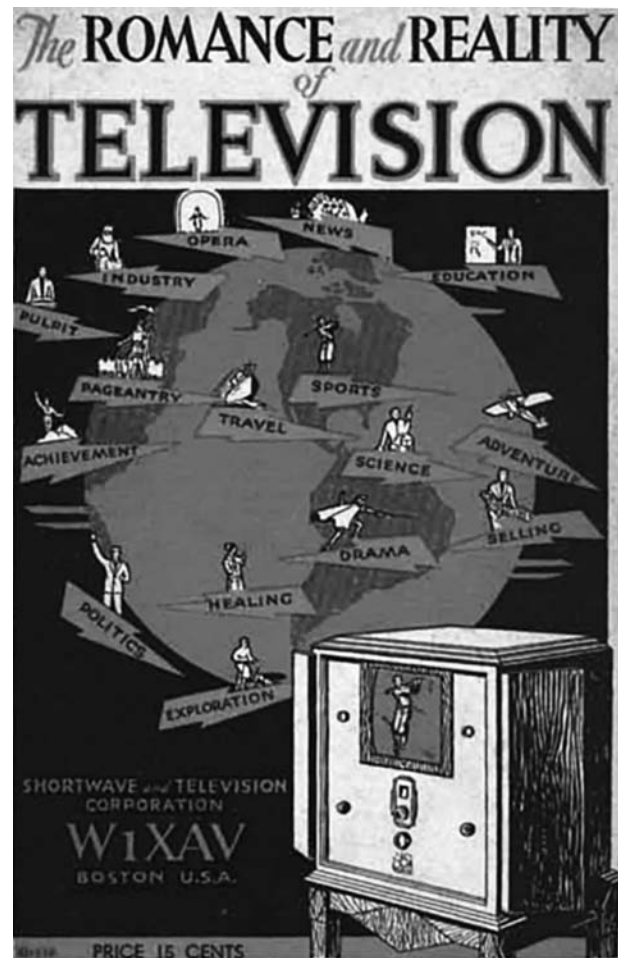
In England the earliest surviving newspaper, from September 1621, is the *Weekly Newes from Italy, Germany, Hungary, Poland, Bohemia, France and the Low Countreys*. It followed the format of the Dutch *corantos* and at first carried mostly business news, although gradually it expanded to include natural disasters, wars, and so forth. In 1641 reports from Parliament were issued for the first time. The first daily was the *Daily Courant*, founded by Samuel Buckley in March 1702. Magazines such as the *Tatler* also began to proliferate around this time; they offered opinions about current events. As demand for newspapers and news publications continued to increase, so did government restrictions, sometimes indirectly, through excessive taxes on printers, and sometimes directly, with dissenting presses being shut down entirely. After a brief period of relative freedom during the 1640s, when journalists could even criticize the king and hundreds of pamphlets and news sheets were seen in London, press censorship was reimposed by Oliver Cromwell in 1655. The same sort of control occurred in the British colonies. The first newspaper

in North America, *Publick Occurrences*, was published in September 1690 and was immediately shut down. The next colonial American newspaper, the *Boston News-Letter*, appeared in 1704 and had to submit itself to the British censors in order to continue publishing. It survived for the next seventy-two years by avoiding controversy and not criticizing the monarchy. Several newspapers that began in colonial times are still publishing today: the *New Hampshire Gazette* was founded in Portsmouth in 1756, and the *Hartford [Connecticut] Courant* began in 1764. European immigrants to North America from other countries also established newspapers. The first to appear, a German-language paper, was *Philadelphische Zeitung* (Philadelphian Newspaper), which was begun in 1732.

Print Media in the British Empire

Throughout the British Empire, English was the preferred language for journalism, since entrepreneurs from Great Britain founded most of the newspapers. This excluded everyone who could only read in the vernacular, but it did help any local journalists who were fluent in English to get hired. In Calcutta, India, James Augustus Hickey started the *Bengal Gazette* in January 1780. To help cover the expenses of publishing, he began taking advertisements, but the newspaper still lasted only two years, due in large part to Hickey's controversial reporting about the governor-general. Even in a faraway place, the British government took a dim view of criticism by the press. Although the *Bengal Gazette* is regarded by some as the first Indian newspaper, other sources note that in 1777 a member of the Parsi community named Rustomji Kashaspathi founded a newspaper called the *Bombay Courier*. A few newspapers in local languages did begin to emerge in the 1800s, but the most influential newspapers were English-language papers. Among the best-known was the *Bombay Times and Journal of Commerce*, founded in 1838; today it is known as the *Times of India*, a name it began using in 1851.

In Canada the first newspaper appeared in March 1752; the *Halifax (Nova Scotia) Gazette* began as a



This 1930 brochure marketed early mechanical TV as magical, amazing, and romantic—despite its tiny 2- to 3-inch screen.

two-page tabloid, with news from England, Europe, and other British colonies. Its founder was the printer John Bushell. Although it was published in Canada, it did not cover local births, deaths, or marriages until about 1769; most of what it printed at first was material aimed at government officials, merchants, and the military. More local in its focus was the *Toronto Globe* (today the *Globe and Mail*), founded by Scottish émigré George Brown in 1844. The *Globe* sent correspondents all over eastern Canada to cover the news. And in Montréal, the *Gazette* began in 1778 as a French-language newspaper, switched to a bilingual format, and finally became all English in 1822.

In Australia one of the first newspapers was the *Sydney Gazette and New South Wales Advertiser*, founded in 1803. Three British men who had worked

The free press is the mother of all our liberties and of our progress under liberty. • **Adlai E. Stevenson (1835–1914)**

there, Alfred Stephens, Frederick Stokes, and William McGarvie, went on to found the *Sydney Herald* (today the *Sydney Morning Herald*) in 1831. The *Herald*, originally a weekly and only four pages long, expanded and became a daily in 1840.

Cape Town, South Africa, had a newspaper as early as 1800; the founders of the *Cape Town Gazette* were Alexander Walker and John Robertson, and it published articles in both English and Afrikaans. There was no black newspaper in South Africa until 1884, when *Imvo Zabantsundu* (Xhosa: Native Opinion) appeared for the first time. Founded by black journalist John Tengo Jabavu, it published in the Xhosa language and English, and was unique in addressing current events and politics from a black perspective and in giving black poets and essayists a way to get their ideas into print.

Historical Censorship of Print Media

The excuse often given for government censorship of the press has been that journalism is unreliable, and in its formative years, there may have been some truth to this claim, since some of the news sheets were filled with unfounded rumors, and some writers used sensationalism to attract an audience. But the real problem for the ruling classes was that the press began taking sides in political issues. Many readers saw the newspapers as a way to learn perspectives that differed from the official version given by those in power. Then, as now, the powers-that-be sponsored “official” publications. The rulers often hoped theirs would be the only version, but in England, to give one good example, other publications developed, some of which questioned the government. There were ongoing tensions between the rulers and the publishers: rulers didn’t mind getting some positive publicity from a newspaper, such as when in 1622, King James I of Britain explained in print why he had decided to dissolve parliament. But monarchs often tried to shut down newspapers that they perceived as too critical. In France, printers and publishers were sometimes arrested and flogged for publications deemed seditious or defamatory. In at least one

case, in England in 1584, a Catholic printer, William Carter, was sentenced to death because it was believed that an allegorical story he had written in one of his widely disseminated books was really an attack on the queen’s Protestant faith.

Despite the best efforts of various European monarchs to muzzle the press, journalists continued to make their opinions known, and as the years passed, reporters and columnists showed they could shape public opinion. In England the influence of the press grew so much that by the early 1800s, British journalists were being referred to as the “fourth estate,” in reference to the three classes (or estates) of society: the nobility, the clergy, and the common people. It was suggested that in addition to the original three, there should be added a fourth, the journalists, who were in some ways the most influential of all, since their telling of a story could bring praise or disapproval from thousands of people.

Freedom of the Press and Sensationalism

The idea of freedom of the press was advocated by scholars and poets from at least as early as the poet John Milton’s famous *Areopagitica: A Speech for the Liberty of Unlicensed Printing* to the Parliament of England, in 1644, but it wasn’t until the mid-to-late 1700s that any countries created laws to formally protect journalists. Scandinavia led the way in 1766, with Sweden being the first country to abolish censorship and introduce a law guaranteeing freedom of the press, followed by Denmark and Norway in 1770. Freedom of the press became part of the newly independent United States’ Bill of Rights—the first ten amendments to its constitution—which was ratified in 1791.

Earlier centuries had seen the occasional publication of unfounded rumors or sensationalist stories, but in the nineteenth century, as newspapers proliferated, so did some of those excesses. Perhaps the most disturbing was “yellow journalism.” Named after a character in a U.S. comic strip, the “Yellow Kid,” in its milder forms it was just a preoccupation with

scandal, rumor, and sensationalism. The Canadian journalist James Creelman was well known in the late 1800s for his dramatic and hyperbolic writing. As a correspondent for several New York newspapers, he reported from dangerous places, while interviewing some of the most controversial newsmakers of his day in a “you are there” style. The style of writing was very exaggerated and filled with words that made it seem as if the writer was in mortal danger just for writing the story. Creelman was what his age would have considered shocking—when he wrote about atrocities during the Sino-Japanese war, for example, his narratives were so graphic that people could not believe such horrible things were true. He was among that era’s best known correspondents, and saw himself as a truth-teller. In England, William T. Stead, the publisher of London’s *Pall Mall Gazette*, reacted against what he saw as the blandness of the British press by creating a strategy to appeal to the working-class person rather than the educated elite. He began using screaming headlines and more illustrations, as well as actively crusading against a variety of social problems that affected the poor; for example, in the mid-1880s, the *Gazette* did a series on child prostitution, at that time called “white slavery,” showing how easy it was for poor children to be exploited. At that time standards were quite different, and even writing about prostitutes was considered in questionable taste. The pages of the *Gazette* enabled Stead to advocate for a number of causes, including women’s suffrage and his era’s antiwar movement. Yellow journalism was eventually seen as negative by the public when journalists began to compete with each other at being more sensational and more graphic—again, within the limitations of the era, in which “bad language” was not permitted no matter what.

Sensational reporting sold newspapers, but yellow journalism could also have serious consequences. In an era before the concept of objective reporting had been enshrined in the journalist’s vocabulary, many newspapers were unashamedly partisan. This could be a mixed blessing. In Hungary, for example, there was revolution in the air in 1848, as many Hungarians wanted independence from Austria. It was the

press that led the charge, thanks in large part to Lajos Kossuth, a lawyer whose views were considered radical by those in power. A fiery orator and writer, Kossuth used his position as editor-in-chief of the underground *Pesti Hirlap* (Newspaper from Pest) to promote nationalism and lead the drive for independence. While encouraging nationalism had a positive result in this case, there were other occasions when stirring up nationalistic fervor did more harm than good. The Spanish-American war in 1898 was largely attributed to newspaper owner William Randolph Hearst, who encouraged his reporters to inflame the U.S. public to support a war that most modern historians agree need never have been fought.

Telegraphy and Wire Services

The mid-to-late 1800s saw further expansion of journalism throughout the world. Technology was partly responsible: Steam driven locomotives now carried people to other cities more quickly, which was good news for reporters trying to cover an assignment. Better news was the invention of the telegraph, which made communicating from distant points infinitely faster. In both Europe and North America, new companies were founded to serve as resources for gathering news. The first news agency was founded in 1832 by Charles-Louis Havas; named Agence Havas, it originally translated the newspapers from foreign countries but by 1835 expanded to cover events around the globe. The government continually monitored it, but Agence Havas became a reliable resource for French-language newspapers. It survives to this day under the name of Agence France Presse. In May 1848 the Associated Press (AP) opened in New York. Founded by David Hale and James Gordon Bennett, it offered its U.S.-affiliated newspapers access to news dispatches from all over North America. In 1858 AP was able to receive dispatches from Europe for the first time, via transoceanic cable.

As use of the telegraph expanded, it became possible for the newspapers to receive and disseminate news on the same day, even from distant colonial outposts. This contributed to the impact journalism

had on a society that increasingly sought more information about world events. In Europe, in October 1851, a German immigrant working in London, Paul Julius von Reuter, began sending stock market quotations between London and Paris via cable. Prior to telegraphy, he had used the so-called pigeon post, sending the information via carrier pigeons. His new company, Reuters, quickly expanded, offering news-gathering services similar to those of the Associated Press. Members of the British press were among his first customers, but soon Reuters had affiliates throughout Europe. In 1865, Reuters was the first European news service to have the story that President Lincoln had been assassinated. Other European countries also established their own news-gathering organizations, often because of demands from businesses for global information that might affect them. Outside of Europe, the new technology was slow to arrive, so newspapers such as Australia's *Sydney Herald* still relied on news from ships until transoceanic cables were successfully laid and telegraph connections were established in major Australian cities, between 1858 and the mid-1870s.

A lack of modern telegraphy was also a problem in China. The Qing government appeared not to see the need for telegraph cable until it fought a war with Russia in the 1870s. Lack of speedy communication hampered treaty negotiations and led to several unfavorable treaties. The public was outraged, and this provided the impetus to begin expansion: from 1884 to 1899, 27,500 kilometers of cable was laid. The encroachment of other countries on China's sovereignty and territory led to a feeling of nationalism that manifested itself in the establishment of many newspapers and magazines from the 1860s through the 1880s. In the rest of the world, certain Latin American countries laid down telegraph lines in the 1850s, as did the Ottoman Empire, and lines were laid down in European colonies as well.

Radio and Television

The 1900s brought yet another dramatic change in journalism, as a result of another technological



The popular *Radio News*—"the 100 % wireless magazine"—sold for 25 cents in 1923.

advance. The inventors Guglielmo Marconi and Nikola Tesla were both experimenting with wireless communication, or what would later be called radio. It is generally agreed upon that the first broadcast was an experiment done by a Canadian engineer, Reginald Fessenden, in Massachusetts, but the exact date is not certain and is in fact the subject of much debate: some sources say it was on Christmas Eve 1906, whereas others place it earlier.

Some of the earliest commercial radio stations worldwide were operated by corporations, with the hope of selling merchandise or radio equipment. In North America, one of the first stations was XWA (later CFCF) in Montreal, owned by the Marconi Wireless Telegraph Company; it went on the air in December 1919. Another early station, KDKA in Pittsburgh, Pennsylvania, was owned by Westinghouse, which manufactured electronic equipment, while another, 8MK (later WWJ) in Detroit, Michigan, was owned by a newspaper, the *Detroit News*. At least one early North American station—WIAE in

Vinton, Iowa—was owned in 1922 by a woman, Marie Zimmerman. Mexico got its first station in December 1923, when CYL took to the air, owned jointly by two businessmen, Raul and Luis Azcarraga, and the Mexico City newspaper *El Universal* (The Universal). Puerto Rico's first commercial station, WKAQ, went on the air from San Juan in 1922, started by Joaquin Agusty, who was well known for his work with amateur radio. And one of the first radio stations in Cuba was PWX, owned by the Cuban Telephone Company in Havana; American radio fans reported hearing its powerful signal in 1922.

News was broadcast at a few stations in 1921 and 1922, and live sporting events were also broadcast during that time. But the staple of American programming was music. At first, because many of the owners were from the upper class, they felt their duty was to educate and to offer "good" music (opera and classical, as opposed to jazz, which they felt was vulgar), but gradually the public demand for dance and popular music won out at most stations. Radio was unique because it was the first mass medium to bring people an event as it was happening, and it also provided the poor and people of color access to places from which they were often excluded. With radio, people could hear the greatest vocalists, learn from famous professors, or just enjoy the hit songs in the privacy of the home. Radio helped to create a common culture, as certain songs or certain performers became popular across the country.

Early radio broke down borders in other ways too. Signals carried great distances, and listeners competed to see who could receive stations from the farthest away. In 1921 Eunice Randall, the first women announcer in Massachusetts, told a newspaper that she had received fan mail from people who heard her in London. Radio magazines such as *Radio News* began printing lists of stations from foreign countries, so that listeners could write down the ones they heard. And it was not just in North America that radio changed people's lives. *Radio News* reported in September 1925 how broadcasting was affecting the peasants in an impoverished Russian village. A radio and loudspeakers had been set up in a public listening

room so that people could gather and hear the news of the world; crowds eagerly awaited these broadcasts so they could find out what was happening outside the confines of their village. Meanwhile, the government had just begun permitting private ownership of radio sets in Moscow, and already over 50,000 receivers were in use. By the mid-1920s, many European cities were hosting radio expositions at which the public could meet radio broadcasters and see the newest radio receiving equipment.

By late 1926 the United States' first national network was on the air—the National Broadcasting Company, or NBC. It was able to offer its affiliates excellent programs with famous performers because the network was entirely supported by advertisers, who often chose the talent and decided what got on the air—a prerogative that resulted in women being relegated to stereotypic roles and minorities seldom being hired at all. By the end of the 1920s, few of the small entrepreneurs who had put the first stations on the air were able to afford to operate a radio station.

In many countries it was the government that operated the stations, which were supported by a receiver fee that listeners had to pay in order to own a radio receiving set. Great Britain was one such country. The British Broadcasting Company was founded in 1922, and the first station, 2LO, went on the air in November of that year. Right from the beginning, government interests tried to limit how much news could be broadcast, fearing that radio could influence the public's political views; newspapers also lobbied the government to restrict radio from doing news at all, since print journalists saw radio as competition.

As in Britain, in France, Denmark, and Germany the government quickly established control of broadcasting in the early 1920s. In at least one place, radio broadcasting was entirely controlled by the Catholic Church: Vatican City's first station was built in late 1930; the station would enable the pope spread his message worldwide.

In Argentina, a commercial station, Radio Argentina, was licensed in November 1923, and a high

powered station, LPZ in Buenos Aires, was on the air in 1924. Argentina was also an excellent market for American-made radio receivers. In Peru, as early as July 1921, a government-run shortwave station in Lima was put on the air at the request of President Augusto Leguia; it mainly broadcast weather reports and other information useful to the military and the police. The first commercial station in Peru was probably OAX in Lima, which went on the air in June 1925, broadcasting entertainment and educational programming. Many stations in Latin America were run by private companies, and although they were sometimes subjected to government censorship, in general, they were free to broadcast.

Radio broadcasting came slowly to Asia. In fact, there were fewer than thirty stations in all of Asia in 1927, whereas in North America, there were hundreds. In China, American and British businessmen seem to have set up the earliest radio stations; one of the first was in Shanghai in 1922. But the government did not allow radio broadcasting to become widespread; by 1931 there were only eighteen stations operating in the entire country. A national radio service, operated by the Communist party, did not begin until 1940. In Hong Kong, then a British colony, the government was equally cautious: amateur radio fans proposed a station as early as 1923, but it wasn't approved till 1928. Hong Kong only had that one station till the mid 1930s. In contrast, radio was welcomed in Japan, where the amateurs had been demanding it since the early 1920s. Tokyo's JOAK was the first commercial station, going on the air in March 1925 and quickly followed by stations in Osaka and Nagoya. Nippon Hoso Kyokai (the Japan Broadcasting Association, or NHK) was established as the official national broadcasting company of Japan in 1926. Modeling itself after the BBC, it took control of the three stations on the air and continued to expand throughout the country.

During the 1930s, NHK was also involved with experiments in early television, as was the Soviet Union, which conducted experiments with television as early as 1931. There were TV broadcasts in the Netherlands in 1935, and Great Britain inaugurated its national

service in November 1936: the first British television broadcast featured a song called "Magic Rays of Light," which certainly expressed the amazement people who witnessed it must have felt. Even prior to the establishment of electronic television, Great Britain was home to very primitive mechanical stations that broadcast sporadically in the late 1920s. A Scottish-born inventor, John Logie Baird, is regarded as the father of mechanical television in Great Britain, and he received considerable publicity despite the poor quality of the picture his system produced. In the United States, the inventor Charles Francis Jenkins was the father of mechanical television, and he too supervised some stations in the late 1920s. But it was the development of a far superior technology, electronic television (credited in the United States sometimes to an independent West-Coast inventor named Philo Farnsworth and sometimes to a corporate inventor who worked for RCA, Vladimir Zworykin), that eventually led to the United States' successful television industry.

Colonialism played a major role in the history of international broadcasting. Colonial governments set up radio stations (and later TV stations) and controlled their content, as they had with newspapers. Even stations that were set up as noncommercial were operated by and often benefited corporate interests. The British Marconi Company, which wanted to sell receiving sets, attempted to open stations in Bombay (Mumbai) and Calcutta, India, as early as 1922. An amateur organization in India, the Radio Club of Bombay, did some programming beginning in 1923, but the first commercial stations did not begin till 1927. When it became evident that World War II was on the horizon, interest grew in expanding the radio broadcasts to give the public more news and entertainment during difficult times. But a national service (All India Radio) did not flourish till India achieved independence in 1947. And in Central America, the United Fruit Company had great influence on what was broadcast, making sure news reports were favorable and nobody challenged the company's control over the banana industry. Even under colonial administration, nationalism could lead to conflicts about

what should or should not be broadcast. In the British mandate of Palestine (present-day Israel), the British set up the Palestine Broadcasting Service in March 1936. Although BBC announcers trained the staff and programming was offered in Hebrew, Arabic, and English, neither Jews nor Arabs were happy with what was on the air. The same problem occurred in a number of other ethnically divided countries, where ethnic tensions played out in a struggle for control of the country's radio stations.

The Media Divide: Comparing Rich and Poor Nations

One organization that has been monitoring trends in international media is UNESCO (United Nations Educational, Scientific and Cultural Organization), which held its first international conference on communication policies in 1974 in Costa Rica. At that conference, a declaration was issued, urging that in crafting their communications policies, nations should take into account national realities but also the promotion of free expression of thought and respect for individual and social rights. In subsequent conferences, declarations were made about the necessity of protecting the rights of journalists and giving all people—not just the rich and the powerful—access to information. An international commission, with members from fifteen countries, convened in 1977 and began issuing reports on the state of the media. Their first report, *Many Voices, One World*, was issued in 1980 and was the first in-depth study of the media in both rich and poor countries. It identified disparities in access to media: in Africa, for example, 1976 statistics showed that only 3 percent of the population owned a radio, which was troubling because “[r]adio is of vital importance to developing countries because of [the] low penetration of newspapers into rural areas and . . . because of illiteracy on a mass scale” (MacBride 1980, 122–127). The commission also identified the countries that had kept pace with advances in communication technology—Japan, for example, composed only 5 percent of Asia's population yet it had “66 percent of the press circulation,

46 percent of the radio receivers, 63 percent of the television sets and 89 percent of the telephones” (MacBride 1980, 122–127), according to 1979 research. The study found that while India had 835 different newspapers, eight African countries had no daily newspaper at all, while others had only a weekly or a biweekly that was not distributed outside of main centers of population. Even in developed countries that had radio or newspapers or television, most of the coverage was about what was going on in the biggest cities. And although media consolidation was not the issue in 1980 that it is today, there was already evidence that a handful of elites controlled the communication in many countries. As the commission noted, issuing a declaration about press freedom or equal access did not mean that those goals would be reached or that governments would cooperate.

Since that first UNESCO report, more countries now have technology, and a growing number have Internet newspapers. Perhaps the first in Africa was the *Mail and Guardian Online*, started in South Africa in 1994. Saudi Arabia began an English-language service, *ArabNews Online*, around 1998; it was an offshoot of the English-language daily newspaper, *Arab News*, which had been established in 1975. What the average Saudi has access to remains limited. The ability to communicate in English was desirable primarily for the elite, who were taught the language in private schools so they could engage in commerce with the West. The average person mainly went to religious schools, but the educated elite then and now were taught English. The fact that the on-line *Arab News* publishes in English provides it with the ability to reach out to educated Saudi expatriates as well as to American and British diplomats. The ruling class and the clerics in Saudi Arabia at first opposed modernizations such as radio, which by all accounts did not start till the 1930s—the clerics only accepted radio when King Abd al Aziz tied its use to the religious purpose of airing scriptural lessons and teaching illiterate people more about their religion. For those who have access to it, the Internet can provide a means of resisting tyranny. Women human rights activists in Afghanistan founded RAWA (Revolutionary

Association of the Women of Afghanistan) and made use of online communication and a website to mobilize supporters worldwide during the repressive Taliban regime of the 1990s. Even in countries in which the average citizen lacks access to the Internet, exiles are often able to use it to spread the word of what is happening in their country. It has become harder for repressive regimes to control information or prevent it from being disseminated, but it can still be done: in Burma (Myanmar), the autocratic government has been successful in keeping dissenting voices from being heard, and in Iran, when protesters questioned the legitimacy of the elections in 2009, the government banned Western TV and radio reporters, and shut down most internet sites, while limiting access to social networking sites.

Mass Media and Violence

Being a journalist can be a dangerous occupation. The International Press Institute in Vienna stated that in 2003, sixty-four journalists were killed; nineteen of them died in Iraq and nine in Columbia. Also in 2003, the Committee to Protect Journalists named Iraq, Cuba, Zimbabwe, Turkmenistan, and Bangladesh as the most unsafe places for journalists. According to the CPJ, while Iraq was a war zone and any reporting from a war zone can be dangerous, the other countries had repressive governments that lock up and in some cases torture journalists whose opinions they do not like. By 2008, conditions for journalists remained unchanged—once again, sixty-four journalists were killed, with Iraq and Pakistan having the most deaths. In some countries, journalists have just disappeared, usually after reporting on a story the government disliked, or uncovering the activities of organized crime. That was the case in Mexico in 2007 when investigative reporter Rodolfo Rincón Taracena vanished after reporting on local drug trafficking. Reporters covering drug-related crime in Latin America were also frequently in danger: in Peru in 2006, forty journalists were attacked, and in Columbia, three were killed and many others had to go into hiding. In Haiti, where news is still spread by *teledjol* (word

of mouth) and illiteracy is rampant, radio remains the most important mass medium: according to some reports, about 92 percent of Haitians own a radio and the country has over three hundred stations. For that reason, the government has sometimes tried to suppress the country's radio stations: Jean Dominique, director of a popular language station, denounced the government and accused it of rigging the elections; he was gunned down in April 2000. There are reports that Haitian radio stations have gradually gained more freedom since then, although journalists have admitted to practicing self-censorship. In some countries, the media have also been used by those in power to incite the population to violence. One especially egregious example of this occurred during the Rwandan genocide of 1994, when a government radio station, RTML, encouraged Hutus to murder members of the Tutsi minority. Radio broadcasts referred to Tutsis as “vermin” and “cockroaches” and repeatedly demonized them. Transcripts show that some announcers even pointed out where Tutsis were living and encouraged Hutus to kill them.

Looking to the Future

In the Muslim world, the arrival of the cable news television station Al-Jazeera (Arabic for The Peninsula) in 1996 has been dramatic. Critics have called the Qatar-based station sensationalistic and biased and have accused it of stirring up anti-Jewish and anti-American sentiments in the Arab world. But many Muslims counter that it is the first network to report from a pro-Arab point of view. Unlike CNN or Fox, American cable networks with a decidedly American and Western viewpoint, Al-Jazeera has called American forces in Iraq “occupiers” and referred to those who were fighting against the Americans not as “militants” but rather as “resistance fighters” or “martyrs.” Al-Jazeera has grown in size and influence in the years since its founding; since 2003, it has competition from Dubai-based Al-Arabiya, which also offers news from a pro-Arab point of view, but is perceived by Western observers to be more moderate in its coverage. It will be interesting

to see the direction these stations take in the years to come. Cable television has become a growing presence in a growing number of Arab countries in the first decade of the twenty-first century. And while many Arab stations, both radio and TV, are religious in nature, there are also stations that broadcast a wider variety of programming, including popular movies. One example is ART (the Arab Radio and Television Network), which was founded in Saudi Arabia back in 1993.

While globalization has affected how business is done worldwide, it has also affected the mass media. In the United States, deregulation of broadcast media began in the 1980s under President Ronald Reagan, culminating with the 1996 Telecommunications Act, signed by President Bill Clinton. The Telecom Act lifted restrictions on how many stations could be owned by one company. Rather than encouraging competition as proponents claimed it would, the end result was consolidation of power into the hands of a few giant media conglomerates, several of which (Clear Channel Communications, which at one point owned over a thousand radio stations and a major concert promotion company; and News Corporation, owner of cable channel Fox News as well as numerous newspapers and magazines) had ties to conservative politics and the Republican party. In the buildup to the invasion of Iraq, critics accused these conglomerates of stifling dissenting views and only broadcasting coverage in favor of going to war.

Similar media consolidation occurred in Canada, where in the period from 1985 to 2000, consolidation occurred in dramatic fashion. By 2000, 68 percent of all television stations were controlled by five giant companies, and one conglomerate, the Hollinger Corporation, soon owned or had a financial interest in 80 percent of Canada's daily newspapers. Eventually, financial problems caused Hollinger to sell off many of those newspapers, but they were bought up by another conglomerate, CanWest.

Media consolidation is also a fact of life in parts of Europe. In England, there has been increasing pressure on the government to relax media ownership laws. One major proponent of removing the

limitations is Rupert Murdoch; in addition to owning the American conglomerate News Corporation, he also owns several British newspapers (including the *Times of London* and a tabloid, the *Sun*) and a satellite programming service called BSkyB (British Sky Broadcasting), as well as media properties in Australia. Murdoch has been accused by his critics of censoring news stories that are contrary to his political views. Meanwhile, in Italy, the controversial prime minister Silvio Berlusconi, also had ties to media ownership; companies owned by his family dominate Italian television, and he has attempted to pass legislation that would permit his conglomerate to expand its ownership of newspapers. He has also used his influence to make sure the state-run broadcaster RAI is controlled by a board of directors that is favorable to him. Critics have accused him of using his wealth to manipulate media coverage, in order to avoid having his questionable financial dealings scrutinized.

In other countries too, a similar trend towards consolidation can be seen. Where media were at one time comprised of government-run monopolies, the new concern is that commercial media conglomerates are stifling opposing voices in the same way that the state-run media once did.

There are some hopeful media signs in countries where repression used to be a part of life. After the breakup of the Soviet Union in 1991, an era of comparative freedom of the press began in Russia. While the press was reined in somewhat by the government of President Vladimir Putin, who was in office (2000–2008), it is still far more free than it was in the era of Soviet rule. But being a journalist in Russia can still be dangerous: the Committee to Protect Journalists notes that when journalists are murdered there, the killers are seldom if ever brought to justice. The news is more positive for journalists in Haiti. Radio stations that were shut down by the government have quietly reopened since the ouster of President Jean-Bertrand Aristide in 2004. And in Rwanda a new radio service promotes not hatred but friendship and entertainment. Similar to pop music radio stations in the United States, Rwanda Radio in Kigali has opportunities for



listeners to call in, a morning talk show, modern pop music, and even a children's trivia contest in which the winners get to talk on the air. Young and articulate announcers offer listeners helpful information about health, and they also teach tolerance. Where radio had once been part of the problem, it is now trying to be part of the healing process.

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See also Internet; Radio; Technology—Computer; Telegraph and Telephone; Television

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Mathematics

The twenty-first-century approach to the history of mathematics looks beyond the once-traditional Eurocentric views that credited the Greeks for the most advanced developments; it now embraces a global view of mathematical accomplishment through the ages and cross-cultural exchanges in the field.

The traditional history of mathematics took shape at the turn of the twentieth century, reflecting the European influence of that era. According to this traditional history the first mathematics worthy of the name arose in ancient Greece and led directly, but for the Dark Ages, toward the modern mathematics of Western universities today. Since the mid-twentieth century historians of mathematics have broadened their subject's horizons. New historical evidence and changing attitudes toward other cultures have made this history of mathematics more complex and more global. Equally important have been changes in what is considered mathematics. The key to the study of a truly global history of mathematics has been flexibility in the definition of mathematics itself. The term *ethnomathematics* refers to the mathematical practices of a particular society and includes mathematical processes beyond the narrow academic sense, in recreation, art, numeration, and other fields. A more conceptually inclusive definition of *mathematics* has led directly to a more geographically inclusive history of mathematics. We can see the greatest diversity in mathematical practices by comparing counting systems around the world, such as the Incan *quipu*, a knot-tying system for recording numbers.

Toward a Hellenistic Synthesis

Hundreds of well-preserved clay tablets (most dating from c. 1700 BCE) disclose the sexagesimal (base sixty) numeration system of ancient Mesopotamia, a system sufficient for the development of an ancient algebra. The sources for early Egyptian mathematics are far fewer. The earliest, the Ahmes Papyrus, is a copy of an earlier version from about 1900 BCE. In addition to developing an arithmetic distinctive for its reliance on unit fractions ($\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, etc.), Egyptians elaborated a practical computational geometry with methods for calculating the volume of a truncated pyramid and approximating the area of a circle.

Only recently have historians begun favorably to reevaluate the achievements of Mesopotamia and Egypt because none of their earliest mathematics adopted the deductive and theoretical approach of the Greeks—an approach that has become enshrined in modern definitions of mathematics. The Greeks themselves, however, explicitly acknowledged their debt to the Egyptians. Moreover, after the conquests of Alexander of Macedon (Alexander the Great, 356–323 BCE) spread Greek thought throughout southwestern Eurasia, a shared Hellenistic culture united the mathematicians of the new world order, and the great Greek geometer Euclid (early third century BCE) taught in the Egyptian capital Alexandria. The Hellenistic world witnessed an extraordinary synthesis of Greek deductive geometry with the algebraic and empirical mathematics of neighboring peoples.

Indian Mathematics

The earliest Indian mathematics was expressly religious in purpose. The geometry developed in the *Sulbasutras* (technical appendices to Hindu sacred writings, the Vedas, c. 3000 BCE) adopted sophisticated techniques, including the Pythagorean theorem, for the proper orientation and construction of effective sacrificial altars. A hymn from the *Atharavaveda* (the name translates to Sacred Knowledge of Magical Forms) describes a complex design of overlapping triangles for meditation.

Possibly during the Vedic period, and certainly by the seventh century CE (perhaps inspired by the counting boards brought by Chinese travelers), a decimal place-value system arose that in principle is like our own: distinct numerals represented the numbers 0 through 9, and each instance of a numeral would be associated with a decimal scale based on its position in the number. (The first dated inscription of such a system, however, comes from Cambodia in 683.) Most early mathematical knowledge was preserved orally in verse.

The decline in Vedic sacrifices after about 500 BCE shifted the focus of Indian mathematics. The developing Buddhist and Jaina traditions involved large numbers. (The religion of Jainism, originating in sixth-century-BCE India, taught liberation of the soul.) The collection of Buddhist texts *Samyutta Nikāya* (The Grouped Discourses), for example, defines a *kalpa* as a unit of time longer than that needed to erode a rock of one cubic mile by wiping it with silk once a century. The Jainas worked with series and permutations, and they theorized that not all infinite numbers are equal, an insight that would elude Western mathematics until the nineteenth century. Only with the practical, commercial algebraic examples of the Bakhshali manuscript, composed in the first centuries CE, did Indian mathematics lose its primarily religious applications.

Later Indian mathematics would achieve breakthroughs in indeterminate equations, as well as in trigonometry and its application to astronomy. Algebraic work used Sanskrit letters abbreviating the

names of colors to stand for unknown qualities, like the modern x and y , and until the modern period the use of letters of the alphabet to represent numerals would reinforce the poetry of Indian mathematics. The research on power series (series—sum of a sequence of terms—in which the terms follow a certain pattern and are infinite) for pi and trigonometric functions by fifteenth- and sixteenth-century mathematicians in Kerala in India anticipated many of the results achieved by the English physicist and mathematician Isaac Newton and the German philosopher and mathematician G. W. Leibniz—independently, or perhaps through the Portuguese—in the seventeenth century. Proofs and derivations of formulas were quite rare throughout the Indian mathematical tradition.

Chinese Mathematics

The first existing numerals appeared on Chinese Shang dynasty (1766–1045 BCE) tortoise shells used for divination, with symbols to indicate 1 through 10, 20s, 100s, and 1000s. The oldest treatise is the *Zhoubi Suanjing* (The Arithmetical Classic of the Gnomon and the Circular Paths of Heaven) (500–200 BCE), an archaic astronomy text that contains a demonstration of the Pythagorean theorem. In China counting rods were used for elementary arithmetical operations at least by the Qin dynasty (221–206 BCE). China also boasts the earliest known magic squares, which are matrixes of numbers in which every row, column, and major diagonal produces the same sum. Interest in magic squares as protective talismans encouraged their spread to Mongolia and Tibet, although they were limited in size to three by three until Yang Hui's work in the thirteenth century.

The principal classic source was the *Jiuzhang Suanshu* (Nine Chapters of the Mathematical Art), composed during the Han dynasty (206 BCE–220 CE). Eminently practical, its nine chapters included 246 problems treating land surveying, proportions of millet and rice, volumes of three-dimensional solids, and tax assessment. Some results were precocious,

Let no one enter who does not know geometry. • **Inscription on Plato's door** (c. 427–c. 347 BCE)

and the approaches to simultaneous linear equations closely approximated the methods later developed by the German mathematician and astronomer C. F. Gauss (1777–1855). The preeminence of this work sparked during later centuries numerous commentaries elucidating the often obscure explanations. If for some people the commentaries inhibited creative work, other people used the commentaries to introduce original research.

Although geometry largely stagnated at the level of the *Jiuzhang Suanshu*, Chinese scholars made important advances in algebra and arithmetic. During the fifth century Zu Chongzhi calculated pi to seven decimal places, an achievement first surpassed by the Indian mathematician Madhava around 1400. In 1247 the “0” sign for zero first appeared, and later in the century Guo Shoujing became the first Chinese mathematician to tackle spherical trigonometry. Both developments may have occurred under Arab or Indian influence. Zhu Shijie (1280–1303) presented the French scientist and philosopher Blaise Pascal's triangle and algebraic methods for solving simultaneous equations and equations of high degree. Only in the eighteenth century would European algebra catch up with Chinese.

Islamic Mathematics

The Islamic 'Abbasid caliphate (the office or dominion of a Muslim spiritual leader) (750–1258 CE) sponsored missions to gather astronomical texts (and scholars) from a variety of cultures. Islamic mathematics had two major sets of sources. The first consisted of Persian and Indian sources that featured prominently astronomical tables and an algebraic approach. The second set of sources was Hellenistic, sometimes transmitted through Syrian intermediaries and translations. In their deductive and abstract approach these works in the second, Hellenistic set of sources betray their Greek origins.

The most famous developer of the first Islamic mathematical tradition was al-Khwarizmi (c. 780–c. 850). His treatise *Hisab al-jabr w'al-muqabala* (Calculation by Completion and Balancing) gives us the

word *algebra*, and his *Algorithmi* introduced the word *algorithm* and the Indian positional number system—which had probably first moved out of India with Nestorian (relating to a church separating from Byzantine Christianity after 431) Christians, who found it useful in calculating the date of Easter. In the second mathematical tradition Thabit ibn Qurra (c. 836–901) proved the Pythagorean theorem, attempted a proof of Euclid's parallel postulate, and made discoveries in mensuration (geometry applied to the computation of lengths, areas, or volumes from given dimensions or angles) and spherical trigonometry.

In addition to preserving these earlier texts in Arabic translation and making further progress within these two traditions, several mathematicians of the Islamic world worked toward a synthesis of Greek deductive geometry and Indian algebra. The fusion of the two streams is best represented by the application of geometry to algebra evident in the geometric solution to quadratic and cubic equations pursued by al-Khwarizmi and the Persian poet and mathematician Omar Khayyam (c. 1040–1123). In addition to pursuing further work on the parallel postulate, Omar Khayyam pursued calendar reform and a theory of proportions useful for the inheritance problems of Islamic law. Jemshid Al-Kashi (1380–1429) relied on a near-circular polygon of 805,306,368 sides to approximate pi to sixteen decimal places. Arab mathematicians enhanced the Indian number system by introducing in the tenth century a small vertical line over the units place to serve the same purpose as the modern decimal point. Nasir al-Din al-Tusi (1201–1274) anticipated the mathematical improvements of the model of the cosmos developed by the Polish astronomer Nicolaus Copernicus (1473–1543).

Toward a European Synthesis

Indian numbers reached Europe by the tenth century, were popularized by the *Liber abaci* (Book of Calculation) of the Italian mathematician Leonardo Fibonacci (1170–1250), and slowly overcame prohibitions by various governments (concerned that the system



The Italian mathematician Leonardo Fibonacci popularized the Hindu-Arabic number system in early-thirteenth-century Europe.

facilitated fraud) that lasted until King Charles XII of Sweden (1682–1718). The Hindu-Arabic system of our modern numbers attracted merchants with its usefulness in calculations—and attracted swindlers with its easily altered numbers. In Europe resistance to mathematics was not limited to the new number system. The German religious reformer Martin Luther considered mathematics hostile to theology, and the establishment of the Savilian chair in geometry at Oxford University in England prompted concerned parents to withdraw their sons, lest they be exposed to diabolical mathematics.

During the early modern period, as Europeans increasingly exerted influence across the globe, they also began to dominate a mathematical tradition that itself was absorbing compatible elements from other cultures. The dominance of a single stream of mathematics, perhaps fed by many cultural tributaries, is characteristic of modern mathematics.

Europe's mathematical exchange with China illustrates how global connections created this single

stream. In 1607 the Jesuit Matteo Ricci and the Christian convert Xu Guangxi (1562–1633) translated Euclid's *Elements* into Chinese. Although Euclid's deductions contrasted sharply with the inductive approach of the *Jiuzhang Suanshu*, the translation proved highly influential in subsequent Chinese mathematics. Many of the technical geometric terms coined by Xu remain in use today. Other cross-cultural mathematical connections are less certain. Mathematics from Kerala may have traveled to China, and the *Elements* may have already been introduced by Arabs. In the other direction, the Jesuits possibly reported some advanced Chinese algebra back to Italy.

Under Chinese imperial sponsorship the text *Shu Li Jing Yun* (Collected Basic Principles of Mathematics, 1723) marked the end of the integration of Western techniques into Chinese mathematics. During the next emperor's reign a new closed-door policy restricted access to Western research. Some Chinese worked on critical editions of ancient mathematical texts, while others conducted research in isolation from the West. In 1859 Dai Xu (1805–1860) proved the binomial theorem independently of Newton, whose own 1676 proof had not yet reached China.

Outside the mainstream of Western mathematics stood the Indian prodigy Srinivasa Ramanujan (1887–1920) and his discoveries in the theory of numbers. Although his genius had no contemporary rival, his knowledge of mathematics was limited. Some of his theorems (for example, on the theory of prime numbers) have thus been described as brilliant but wrong. His cavalier attitude toward proof was once attributed to this background, although it in fact fits the Indian pedagogical tradition of leaving demonstration and commentary to students.

The twentieth century has brought a remarkable international tradition of mathematical scholarship often transcending geopolitical divisions. In 1897, 208 mathematicians met in Zurich, Switzerland, as the first International Congress of Mathematics (ICM). Representing sixteen countries, they included twelve from Russia, seven from the United States, and four women. The Cambridge ICM of 1912 counted 82 non-Europeans among its 574 participants. Founded

just after World War I, the International Mathematical Union (IMU) excluded the defeated Germany until the IMU adopted a policy of principled neutrality in the 1920s—a policy that would endure despite the challenges of World War II and the Cold War. The mainstream did divide somewhat as Communist and Western mathematicians developed results in parallel, at a lag in either direction, often with different methods. The Commission on Development and Exchange (known before 1978 as the “Commission for Exchange of Mathematicians”) was established in 1959 to facilitate the development of mathematics beyond industrialized countries. The African Mathematical Union formed in 1976, although the exodus of mathematicians from underdeveloped nations to Western research institutes continues to concern some observers.

Outlook

As historians discover new sources and question old attitudes, the global history of mathematics will continue to expand. The nature of mathematics perhaps makes it more likely to move across cultural boundaries intact, and serious inquiry into the global dissemination of mathematical ideas has only begun. Unfortunately, because so much mathematics has evolved in traditions that do not value the citation of sources, exact lines of transmission will be hard to re-create.

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See also Al-Khwarizmi; Enlightenment, The; Newton, Isaac; Scientific Revolution

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Matriarchy and Patriarchy

Patriarchy (literally defined as “rule by the fathers”) and its opposite, *matriarchy*, are terms used to account for the historical development of systematic societal relationships between men and women, especially in feminist and gender studies regarding the male dominance and oppression of women and children.

Patriarchy has emerged as an important explanatory concept in contemporary feminist theorizing and research to account for the development and maintenance of systematic gender inequality through male dominance that resulted in the oppression of women and children. Like other widely used terms in feminist research and theory, such as *feminism* and *gender*, there are several views of patriarchy and its usefulness as an explanatory concept for understanding women’s oppression.

Matriarchy, on the other hand, has not received as widely accepted a response as an explanatory concept in feminist theorizing about the historical development of social relations between men and women. Of particular concern here is the debate concerning the existence of matriarchal societies in the emergence of human societies. Specifically, this debate centers on the notion that a pre-matriarchy existed prior to the emergence of patriarchal societies in the foraging and Neolithic eras. This debate has emerged in feminist religious studies, particularly in relation to finding the historical antecedents of contemporary feminist goddess spirituality and documenting what might be called a sacred history for the movement. Also relevant here are the recent attempts of U.S. historians to explain the unequal economic and political position

of African Americans as a result of the myth of the “black matriarch.”

Through the discussion of matriarchy and patriarchy as explanatory concepts, this article will highlight the ways in which these concepts constitute a form of discourse about power in social and relational terms as well as in institutionalized contexts. It will underscore the shifting and changing explanatory modes of the terms *matriarchy* and patriarchy while providing an overview of the associated meanings of these concepts.

What is Patriarchy?

In its simplest terms, the word patriarchy draws its roots from the Greek (*pater* = father and *arch* = rule; literally, “rule of the fathers”). (Patriarchy can also be used in a generic sense to mean rule by men, and sometimes more narrowly to mean a society where a father rules his wife, children—usually not adult—and any employees in the household.) But the concept of patriarchy encompasses more than the organization and social relations of power within families and households. It also addresses the systemic discriminatory practices of unequal power that institutionalize male dominance in social, cultural, economic, and political life with the attendant ideological justification in religious and legal frameworks that serve to both institutionalize and naturalize this power dynamic.

The theoretical studies of the sociologist Bonnie Fox allow for four major perspectives on patriarchy as an explanatory principle in feminist theorizing and research, including their limitations and insights. These include (1) patriarchy as “collective male dominance”;



Franz Xavier, *Penthesilea, Queen of the Amazons* (late 18th c.). Wood engraving. Today's feminist "warriors" struggle to end gender inequality and the oppression of women.

(2) patriarchy as a "self-contained system"; (3) patriarchy as a system of reproduction; and (4) patriarchy as a "sex/gender system."

In the first instance, "patriarchy as collective male dominance," the perspective defines patriarchy in universal terms. The lack of attention to causality and the resultant ahistoricism and essentialism of this perspective renders it problematic, since it asserts that all men, at all times, have sought out dominance over women. For Fox, attention to causality through a focus on social relations is crucial.

The second perspective, "patriarchy as a system," addresses the problem of causality by locating the material basis of patriarchy in the domestic, household relations between men and women. From this perspective, the basis of patriarchy is the economic dependence of women on men and the control of their sexuality through heterosexual marriage. What the theorist Heidi Hartmann calls a sexual division of labor, which allows men to benefit from women's domestic labor, is the basis of men's dominance over women. The critique of this perspective is the problem of motive: from this perspective, male agency

expressed as the desire to dominate women is seen as the motivation for the establishment of patriarchy.

In the third approach, "patriarchy as a system of reproduction," the problem of motive is located in the reproduction of human beings. Patriarchy, from this perspective, is rooted in the control and management of human reproduction in the context of capitalism. The focus here is on the control of women's sexuality and fertility as capitalism and patriarchy are seen as "dual systems."

From the fourth perspective, "patriarchy as a sex/gender system," the emphasis is on the production of gendered and sexed individuals in traditionally defined terms. From this perspective, patriarchy is intimately concerned with both the production of "gendered subjectivity"—the production of "men" and "women" as culturally defined and the production of "gendered subjectivity itself"—that is, the production of two distinct sexes and genders. Thus, patriarchy is a "system involving the production of two distinct sexes and genders that are disposed to mutual sensual attraction and dependence in terms of labour, ensures biological reproduction, and a functioning economic unit consisting of a man and a woman" (Fox 2001, 325). The sex/gender system is a basic part of the way in which human societies have developed and is historically variable.

The synthesis that Fox highlights is that patriarchy from the perspective of being a sex/gender system is involved in both the production and the reproduction of people and the social organization of societies in a fundamental fashion. In situating patriarchy as a sex/gender system involved with the production of gendered subjectivity, it is important to look at three interrelated areas: the production of subsistence, the production of people, and the production of sexuality as integral at the level of both social structure and the individual, including both interpersonal relations and subjectivity.

Resisting Patriarchy

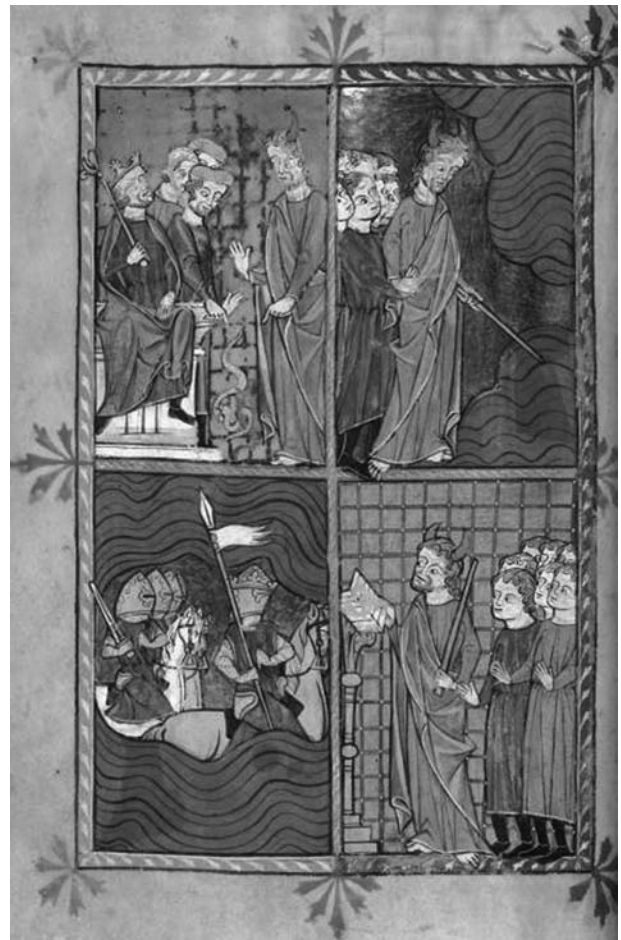
Since patriarchy is a fundamental aspect of how human beings' subjectivity and social organization

is organized and given its inherent inequality, how can it be resisted? On what basis can the struggle to end gender inequality and women's oppression be waged? The answer to this question has occupied feminist theorists and activists across a variety of political strata and involved both the transformation of interpersonal relations and the wider social structure. One idea that has received particular attention is that dismantling patriarchy lies in challenging the normative definitions of subjectivity in the production of masculinities and femininities under capitalist production.

Thus, lesbianism, for instance, is seen as a political resistance to patriarchy by the theorist Adrienne Rich precisely because it challenges the sex/gender system's reproduction by removing women from their historical subordinate role in heterosexual marriage and sexuality. From this perspective, "compulsory heterosexuality" is the fundamental means through which male dominance is perpetuated. Compulsory heterosexuality points to a situation in which women are compelled through cultural norms imposed by men to enter into the system of heterosexual sex and marriage that ultimately does not benefit them and maintains their subordination. Lesbianism, therefore constitutes a form of resistance to heterosexuality. But as compelling and influential as Rich's thesis is, the concept of compulsory heterosexuality was challenged on the grounds that the locus of women's oppression is not based in marriage or heterosexuality but rather in the supervaluation of masculinity and masculine desire over women's sexuality.

Challenging Patriarchy as an Explanatory Concept

One of the main challenges to patriarchy as an explanatory concept for all women's oppression emerged from the theorizing of black women and other women of color who criticized the essentialism and universalizing tendencies of an explanation that did not take into consideration the importance of race, color, and class as social relations of power. Their critique addressed the notion that all women's



Medieval depictions of biblical patriarchs and male dominance: Aaron's Rod; Moses Parting the Red Sea; Egyptians Drowned; and the Canticle of Moses.

experiences are based in gender oppression and argued for a consideration of the interrelated matrixes of power based on race, class, and gender. Women's lives were affected differently in different parts of the world during different historical time periods, depending on their relationship to race, class, and gender power relations.

From this perspective, white women married to men who owned enslaved Africans in the U.S. South and elsewhere in the slaveholding societies of the Americas did not experience gender oppression due to patriarchy in the same way that enslaved black women did. In fact, their gender, class, and race status in a society in which chattel slavery was intimately tied to hierarchies of race and color gave them privileges that distinguished them from enslaved black women. Thus, the histories of slavery, racism, and sexual exploitation experienced by black women

A little more matriarchy is what the world needs, and I know it. • **Dorothy Thompson (1893–1961)**

need to be addressed to understand black women's oppression. By assuming a singular feminine experience through the uncritical use of the concept of patriarchy and failing to consider women's divergent historical experiences, feminist analysis runs the risk of repeating the inequities based on race and class. The charge is that because the normative feminine experience is invariably layered by class- and race-based assumptions, white, middle-class Western women's experiences become central to feminist analysis and theorizing.

In the face of such theorizing, the concept of patriarchy continues to be used with attention to historicity. The theorist Elisabeth Schüssler Fiorenza, for example, defines patriarchy as a pyramid of interlocking dominations. She uses the term *kyriarchy* from the Greek *kyrios* (lord or master) to describe the patriarchal power that operates on the basis of interlocking systems of oppression based on gender, race, class, culture, and religion.

Matriarchy and Myth

While the use of the concept of patriarchy to explain women's oppression has gained currency in contemporary feminist theorizing, its opposite—matriarchy (literally, from the Greek, “rule of the mothers,” but understood more commonly as rule by women)—has not been as widely accepted, and some have doubted the past that it describes. A debate emerged within feminist religious studies circles concerning the reality of pre-patriarchal cultures in which women's lives and interests were celebrated. Evidence of this time in human history when the feminine principle was not devalued is directly related to the evidence of religious practices and imagery that celebrate the feminine principle in the form of a mother god (as opposed to the father god of patriarchal cultures).

The work of scholars such as Carol P. Christ, Merlin Stone, and Marija Gimbutas recast and reinterpreted the historical record. Christ, for example, challenged the historian Mircea Eliade's account of religious development as androcentric or male-centered and recast the role of women in the foraging

and Neolithic eras as vitally important. She used the notion of “woman the gatherer” to challenge the assertion that “man the hunter” was central to the social reproduction of human societies. But these reinterpretations have largely been dismissed as unfounded and wishful, based more on a desire to create a sacred history than on sound archaeological interpretations. In fact, the use of archaeological evidence to further contemporary feminist views of prehistory has been seriously questioned. From this vantage point, the complexities of hunter/gatherer societies are largely erased in favor of speculations about the role of women in these early societies. But it is difficult to sufficiently reconstruct foraging era or Neolithic social structure from archaeological evidence in order to draw accurate conclusions about the religious systems and symbols, and a reconstructed religious role may not actually represent the status of women or their social roles.

In fact, the assumption of a matriarchy based on the existence of matrilocality and matrilineality has been questioned. (Matrilocality refers to situations in which a husband lives with the wife's family on the wife's family's land. Matrilineal descent traces lineage through the mother's line.) Matrilocality and matrilineality, however, are distinct from matriarchy because their existence is not based on women's having political and social power over men. Finally, the overwhelming focus on the goddess, especially through the female body, life cycle, and reproduction potentiality, may produce a kind of essentialism about women's experiences that could, ironically, reinforce dominant patriarchal notions of femininity. But while these criticisms have been launched against the search for a history of the goddess in pre-patriarchal societies, they do not negate the importance of historical reinterpretation in creating a sacred history for feminist spirituality. Indeed, the recasting of history from this viewpoint serves a powerful ideological role in contemporary feminist spirituality.

One aspect of the matriarchy/patriarchy debate is the importance of female power and claims of matriarchal social order among many first peoples. Whether some of these societies were or are matriarchal, the

The dogma of woman's complete historical subjection to men must be rated as one of the most fantastic myths ever created by the human mind. • **Mary Ritter Beard (1876–1958)**

claim that women had much more power and authority in them, and the claim by some that they are now and then were matriarchal, are important aspects of their ethnic identity. Matriarchal or at least non-patriarchal social organization functions to distinguish these societies from the patriarchal societies that took over their territory.

In another instance of contemporary myth making, the concept of matriarchy was invoked to suggest that black women's emasculating dominance of black men was directly responsible for the social and economic inequities evident among black populations in 1960s America. In a 1965 study, Senator Daniel P. Moynihan suggested that a matriarchal black family structure was directly responsible for the inequities faced by black men and women. Black male patriarchal authority was seen as necessary for rectifying social and economic disparities with the wider society. In other words, rather than citing systemic inequality in all areas of social life, from slavery through the era of segregation known as Jim Crow, Moynihan placed the responsibility for the black community's disparity at the feet of black women. The political philosopher Angela Y. Davis critiqued this thesis as a continuation of a line of thinking that suggested the deterioration of black family life under slavery and its continuation into the post-slavery era. Davis noted that instead, black women's experiences under slavery, including acts of resistance and the protection of themselves and their families, created the legacy of a new womanhood for their descendants.

The Ongoing Debate

A review of perspectives on patriarchy shows that patriarchy produced a sex/gender system that led to gendered subjectivities. Matriarchy, on the other hand, is not as widely accepted as a way of understanding the development of relations between men and women and gendered subjectivities. The ongoing debate over the veracity and relevance of pre-patriarchal goddess-based societies shows that while the accuracy of such scholarship may have been questioned, it helped to create a sacred history for the contemporary feminist

spirituality movement. Second, the myth of the black matriarch as espoused by Moynihan's 1965 study may be seen as simply another instance in which the concept of matriarchy was used to reinforce long-standing racial stereotypes about black women as emasculators of black men, who inhibited the exercise of patriarchal power within black families. This particular construction of a black matriarchal family structure upheld patriarchy as normative in American society.

Both the Moynihan study and the reinterpretation of foraging era and Neolithic human societies to create a sacred story for feminist spirituality and to challenge male-dominant accounts of religious history point to the use of matriarchy and patriarchy as concepts that speak as much about interpretations of historical relations between men and women as they do about contemporary gender relations and the nature of theorizing and knowledge production. These concepts are clearly not neutral, and their use to address the development of gendered subjectivities and gender relations in human societies continues to be contested.

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See also Women's and Gender History; Sex and Sexuality

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Mehmed II

(1432–1481)

OTTOMAN SULTAN

Mehmed II, the twice-reigning sultan of the Ottoman Empire in the mid-to-late fifteenth century, instituted new laws codes that served as the core of Ottoman legal system well into the seventeenth century. During his reign he accepted into his service talented men of various nationalities and religions.

Mehmed II reigned twice as sultan of the Ottoman Empire (1444–1446 and 1451–1481) and is often viewed as the ruler who transformed the Ottoman state into a true empire. Born the fourth son of Sultan Murad II, he first became sultan at age twelve when his father abdicated in 1444. Mehmed II's youth, however, prevented him from asserting his authority over some court factions; thus the state could not effectively deal with internal rebellion and foreign invasion.

As a result, Murad II returned from private life to assist in leading the Empire's armies and defeated an army of crusaders at Varna (a city on the Black Sea) in 1444. Murad II's presence raised questions as to whether Mehmed II was still sultan. An uprising by the Janissary corps, the elite infantry of the Ottomans, brought Murad II back to power in 1446, although many officials had considered him to be the actual ruler prior to this date.

Although deposed, Mehmed II remained active in the affairs of the state because Murad II viewed Mehmed II as his successor. As such, Mehmed II accompanied his father on campaigns in the Balkans on several occasions and ascended the throne for a second time on 18 February 1451 upon his father's death.

Ottoman relations with Serbia and the Byzantine Empire, with its capital in the city of Constantinople

(Istanbul in modern Turkey), had almost always been antagonistic. The transition in leadership from Murad II to a much younger Mehmed II seemed to present an opportunity to the enemies of the Ottomans. Almost immediately Serbia and the Byzantine Empire threatened to destabilize the region as Ibrahim, sultan of Karamanid (an independent emirate outside of Ottoman control), invaded Ottoman territories in Anatolia (in modern Turkey). Mehmed II dealt with both Serbia and the Byzantine Empire through force and diplomacy. Afterward Mehmed II began to plan for the destruction of the Byzantine Empire. He faced a difficult decision because a lengthy siege of Byzantium could draw Venice and Hungary into war with the Ottomans as well as draw a crusading army from western Europe. On the other hand, the empire of Byzantium (by this time, basically comprising the city and few outlying regions) continued to take every opportunity to meddle in Ottoman politics. After considering the advice of his counselors, Mehmed II proceeded with the siege, confident in the ability of the Ottoman heavy artillery. Indeed, the siege of Byzantium lasted less than two months, ending on 29 May 1453.

Although the city suffered enormous damage during the siege, Mehmed II spent considerable time and wealth rebuilding and repopulating it. The capture of the city and the fall of the Byzantine Empire enhanced Mehmed II's prestige as a *ghazi* (holy warrior). Indeed, the concept of *ghazi* became the theme of the Ottoman sultans, who used it even to legitimize themselves above other Muslim rulers such as the Mamluk sultans of Egypt and Syria and the Turkmen rulers who challenged the sultan's authority. Furthermore, Mehmed II also took the title of "Qaysar" (Caesar), thus placing himself as the heir to the Roman Empire



Giovanni Bellini, *Sultan Mehmet II* (1480). Oil on canvas.

and successor of the Byzantine Empire and legitimizing his claims to former domains of the empire in the Balkans and Mediterranean Sea.

By legitimizing his authority in both Islamic and European territories, Mehmed II sought to centralize power under him in the Balkans and Anatolia. After the fall of Byzantium in 1453, Mehmed II focused his efforts in the West. He established Ottoman control over most of the Balkans, including Serbia and Bosnia, as well as Greece. His activities, however, directly clashed with the interests of Hungary and Venice and resulted in the appropriately named Long War (1463–1479) against the two European powers.

Hostilities with Hungary continued beyond the war until Mehmed II's death, and Venice suffered greatly from the war, not only in loss of territory, but also in trade. Mehmed II simultaneously expanded the empire by conquering Trebizond on the northern coast of Anatolia as well as by turning the Black Sea into a virtual Ottoman lake.

Mehmed II's actions in Europe and the Middle East led states in the Levant (countries bordering on the

eastern Mediterranean) and Venice to form a loose alliance against the Ottomans. Although Mehmed defeated Karamanid and annexed its territory, this action led him into conflict with the Aq Qonyunlu (White Sheep) Turkmen confederation as well as the Mamluk sultan in Syria and Egypt.

In the context of world history Mehmed II is most notable for establishing the Ottoman Empire with its center in the Balkans and Anatolia. This establishment through the ideological mantle of his role as a *ghazi* would color Ottoman actions afterward. The transition of the sultan as the leader in war against non-Muslims diminished the influence of the frontier *begs* (lords—primarily nobility with a military function) who had previously held an immense amount of prestige as *ghazis*. Furthermore, by centralizing power, Mehmed II reduced the power of the local aristocracy and turned more territory into the direct service of the state.

Mehmed II also accepted into his service men of various nationalities and religions, preferring merit and talent to other qualifiers. He also instituted new legal codes based on his power as sultan that served as the core of Ottoman laws well into the seventeenth century.

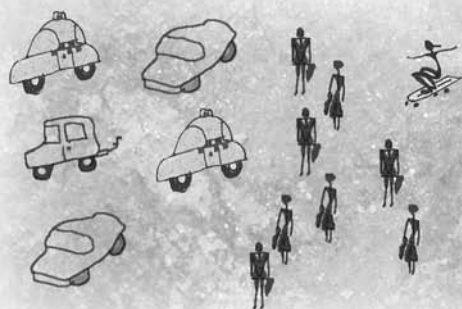
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See also Ottoman Empire

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Mencius

(c. 371–c. 289 BCE)

CHINESE PHILOSOPHER

The Chinese philosopher Mencius (c. 371–c. 289 BCE) was a follower of Confucius who advocated benevolent government based on the natural moral goodness of humankind. East Asian culture was greatly influenced by the teachings of both men.

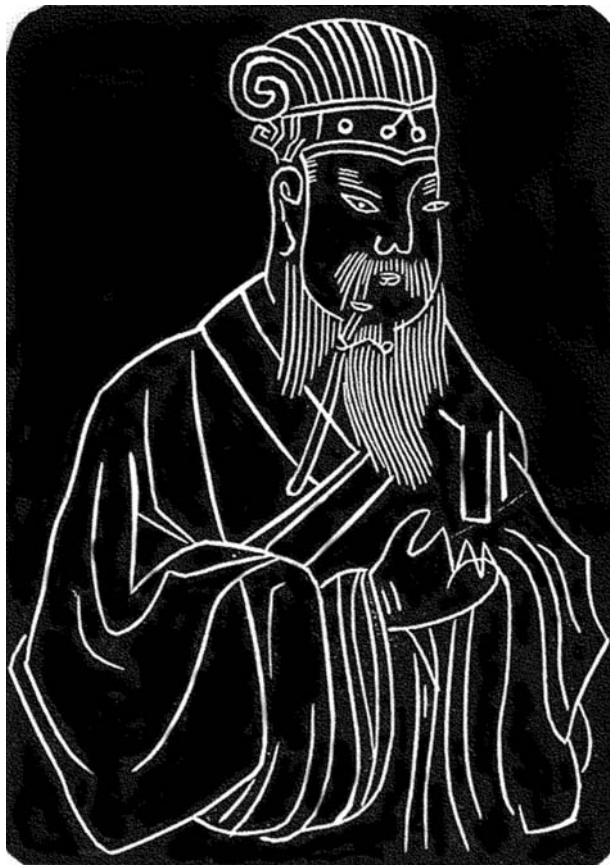
Meng Ke, commonly referred to in the West as Mencius, the Latinized form of his title Mengzi (“Master Meng”), was a philosopher, itinerant official, and teacher during China’s chaotic Warring States period (475–221 BCE). As had been the case with Confucius, Mencius had very limited success as an administrator and court adviser. But he was a successful teacher, and his ideas, as recorded in the book that bears his name, later played a central role in the development of Confucianism—a philosophy that remains an important component in the culture of East Asia.

Born in the minor state of Zhou, located at the base of the Shandong Peninsula in eastern China, Mencius is said to have received his earliest education from a disciple of Kong Ji, or Zi Si, the grandson of Confucius. As a young man, Mencius obtained a position at the court of the local ruler, King Xuan of the state of Qi. Here the young philosopher advised the king by citing examples of moral and virtuous behavior from the age of the ruler-sages Yao and Shun, and from the ancient Xia, Shang, and Zhou dynasties. Given that this was a time characterized by warfare, intrigue, and shifting political alliances, it is not surprising that Mencius’s emphasis on the ideals of humanity, benevolence, and righteousness failed to find a sympathetic ear at the Qi court. While other philosophers and advisers, such as the strategist

Sunzi, encouraged warring kings to strengthen their administrations, to seek weaknesses in their opponents, and to utilize every tactic possible in order to protect and enlarge their kingdoms, Mencius urged rulers to seek peace, to lead by moral example, and to strive to recreate the golden age of the past. While Mencius was a respected philosopher and welcomed by the rulers of several states during his life, only one, King Hui of the Liang in the state of Wei, followed his advice. When King Hui died, Mencius, then forty years of age, withdrew from public life and worked along with several of his disciples compiling his writings and drafting commentaries on earlier texts.

In his writings Mencius emphasized two principles as the keys to restoring order and harmony to society. The first was *jen* (humanity, benevolence). The second concept was *xiao*, or filial piety, which was derived from his belief in the larger principle of *yi* (righteousness, duty). Mencius placed even greater emphasis on the importance of filial piety than Confucius, perhaps in an effort to counter the beliefs of the followers of Mozi, a rival philosopher who was an exponent of universal love. The concepts of *jen* and *xiao* were meant to shape not only a person’s immediate familial relationships, but also the relationship between a ruler and his subjects. A king was to be noble and to treat his subjects as his own children, providing them with security, guidance, and tempered discipline. In return, the common people were to be obedient and loyal to their ruler. Although a socially conservative philosopher, Mencius added a new component to the Confucian ideology that led some to consider him and his ideas dangerous. This more radical idea was the concept of the Mandate of Heaven, that the ruler’s family had been sanctioned

To act without clear understanding, / to form habits without investigation, / to follow a path all one's life / without knowing where it really leads— / such is the behavior of the multitude. • Mencius (c. 371–c. 289 BCE)



Mencius's teachings stressed benevolence and righteousness.

to rule by a divine power. If a ruler was an able and benevolent administrator who governed his people well, then he would retain the mandate. But should the ruler prove to be incompetent, or worse, morally corrupt and a despot, the mandate could be revoked and his subjects would then be free to overthrow him and his family.

As a Confucian philosopher, Mencius was opposed to other contending schools during the Warring States period. His beliefs, as detailed in the book that bears his name, played a key role in the development of Confucian philosophy during subsequent Chinese history. Zhu Xi (1130–1200), a scholar of

the Song dynasty (960–1279), combined the texts of Confucius's *Lunyu* (*Analects*) with *The Book of Mencius*, *Da Xue* (*Great Learning*), and *Zhong yong* (*Doctrine of the Mean*) to form the Four Books. This collection, together with the Five Classics of ancient Chinese literature, formed the basis for the traditional Confucian education system and was a body of work that was memorized by seven centuries of Chinese scholars. The civil service examinations that recruited China's imperial bureaucracy during the Song, Ming (1368–1644), and Qing (1644–1911/12) dynasties were heavily influenced by the ideas of Mencius and his followers.

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See also Confucianism; Philosophy, Asian

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Mercantilism

Mercantilism describes the economic policies of the major European states from the sixteenth to the eighteenth centuries, in a period when rivalries among new national monarchies were increasing along with Europe's role in world trade. A variety of sixteenth- and seventeenth-century thinkers defined the principles of mercantilist economics.

The sixteenth- and seventeenth-century thinkers who shaped the concept of *mercantilism*—and the economic policies it instituted in the European states affected by rival monarchies and increasing trade—argued that there was a fixed amount of wealth in the world. Each country should obtain as large a share of this wealth as possible, by active government policies that limited imports and sought to promote exports. High tariffs were an essential part of the mercantilist strategy. Pursuit of colonies played a role as well, while also dictating that the colonies be made insofar as possible a source of raw materials (which would therefore no longer have to be imported from outside the national system). Mercantilist ideas also prompted efforts by the British to reduce the import of manufactured goods from territories like India, in favor of their own production. Mercantilist policies prompted governments to try to set up new manufacturing plants that could both satisfy national needs and provide possible exports. In the absolutism of late-seventeenth-century France, the state undertook some of these ventures directly. Mercantilism also influenced the creation of some of the great state-affiliated commercial ventures, like the East India companies of Britain, Holland, and

France, designed to push colonial acquisitions and expand secure sources of supply.

Many states participated in mercantilism because of its military implications: successful acquisition of a larger share of the world's wealth would enhance the tax base and at the same time weaken competitors. Other states, less aggressive, pursued mercantilism for its presumed economic benefits, as in eighteenth-century Sweden, which actively encouraged exports and set up colonial commercial companies to trade with Africa and the West Indies. Switzerland in the eighteenth century translated mercantilism into government efforts to encourage sheep growing, to reduce dependence on imports of wool. The approach, in other words, had wide applicability and credence in early modern Europe. Mercantilism also related to government efforts to encourage population growth (a larger labor force would contribute to the national economic effort) and to import skilled foreign workers and businessmen.

The most systematic implementation of mercantilism undoubtedly occurred in the seventeenth century under Jean-Baptist Colbert in France, where it resulted in high tariffs, promotion of internal industry, and an effort to reduce internal barriers to trade. Many historians have argued that mercantilist burdens help explain why French economic dynamism began to lag in comparison with Britain, which was also affected by mercantilist thinking but less committed to state regulation. But mercantilism defined key Prussian policies under Frederick the Great and also affected eighteenth-century Austria, where its principles were expressed in the related movement called cameralism. Efforts to enforce mercantilist



George Webster, *Merchant Ship and Fishing Vessels off the Dutch Coast* (early 18th century). Oil on canvas.

policies more fully on colonial North America increased tensions between Britain and the colonists after 1763. Mercantilist thinking showed up again in Napoleon's construction of his Continental System, designed to use tariffs to attack British economic and military power.

Economic theorists began to attack mercantilist assumptions in the mid-eighteenth century, arguing that too much state regulation hurt rather than helped the economy and that the idea of a finite amount of world wealth was false. Debates over mercantilism spurred the rise of laissez-faire or liberal economic thinking. But mercantilist impulses continued to affect European policies, as in a penchant for high tariffs and continued colonialism. Some historians have dubbed the policies of the nineteenth-century decades of imperialism "neo-mercantilist" because of their relationship to older assumptions about state regulation and about

the relationship between military and economic competition.

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See also Dutch East India Company

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Meroë

From the third century BCE, and for almost seven hundred years thereafter, Meroë was the most important city in northeast Africa, fostering extensive cultural and economic interaction between sub-Saharan Africa and Greco-Roman Egypt. Its tradition of urban life and state-level social and political organization survived the fall of the city and influenced Christian kingdoms that dominated the Nile Valley south of Egypt during the Middle Ages.

Meroë was the last capital of the kingdom of Cush, the earliest known imperial state in the interior of Africa. Located in the central Sudan on the east bank of the Nile south of the fifth cataract of the Nile and near the junction of the Nile and Atbara Rivers, Meroë sat astride important trade routes leading from the Nile valley to the Red Sea and from the southern Sudan to Egypt. Although the great slag heaps scattered over the site of Meroë suggested to early historians of ancient Africa that Meroë prospered as a center of iron manufacturing, more recent research indicates that Meroë's prosperity was based on its ability to control the supply of African goods such as gold, ivory, ebony, exotic animals, and slaves to Egypt.

The History of Meroë

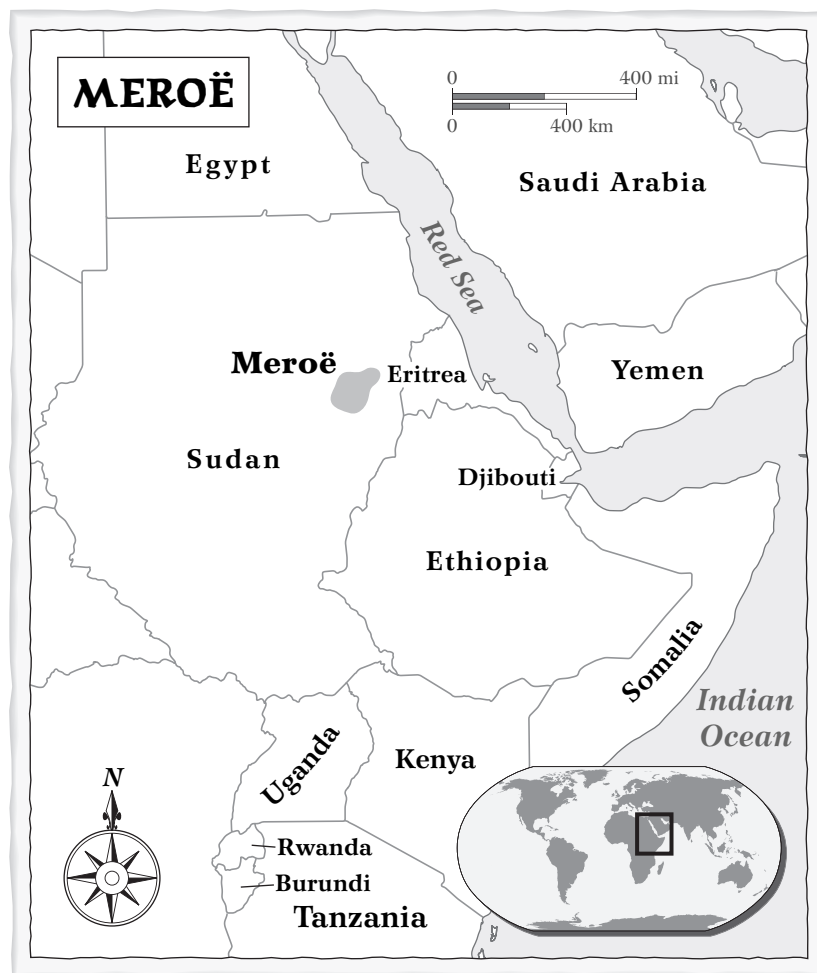
Although Meroë was the southernmost civilized city known to ancient Greek geographers, knowledge of its exact location was lost until it was identified by the Scottish explorer James Bruce in 1772. Seven Greek writers are known to have written works devoted to Aithiopia, the Greek term for Cush. Only

meager fragments of these works remain, and the few inscriptions from the site are written in the still-undeciphered Meroitic language. As a result, reconstructions of the history of Meroë rely primarily on archaeological evidence. Unfortunately, the only major excavations undertaken at Meroë to this date—those conducted by John Garstang for the University of Liverpool between 1909 and 1914—were poorly managed and recorded.

The early history of Meroë is especially poorly known. Archaeological evidence indicates that a settlement already existed at Meroë in the eighth century BCE, but that Meroë only became a principal royal residence in the sixth century BCE. Cush was invaded by the Egyptian king Psamtek II in 593 BCE and again by the Persians in the 520s BCE. Neither of these attacks, however, reached Meroë, although Cush did recognize Persian suzerainty. Despite these events, the political and religious center of Cush remained near the fourth cataract of the Nile at the city of Napata.

The status of Meroë changed dramatically in the third century BCE. Attacked by Ptolemaic Egypt in the 270s BCE, Cush lost control of an important region called the Dodekaschoinos just south of the first cataract of the Nile together with valuable gold mines located in the eastern desert. The Cushite king Arqamani (reigned c. 218–200 BCE) led a revolt against Napatan domination that resulted in the transfer of the political capital and royal burial site south to Meroë. As a result of these developments, strong Ptolemaic political and cultural influence penetrated Cushite territory during the remainder of the third century BCE.

Relations between Meroë and Egypt remained tense but stable until the Roman conquest of Ptolemaic



Cushite power, until the Aksumite king Ezana conquered and sacked Meroë in the mid-fourth century. Although there is evidence of later Christian settlement at Meroë, its history as a major political center was at an end.

Government and Culture at Meroë

The government and culture of Meroë were a mixture of local and Egyptian traditions. The most obvious evidence of the Egyptian elements in Meroitic culture are the statues and pyramids of the kings of Cush, the huge Egyptian-style temple of the god Amon, and the walled compound beside the Nile that formed the core of the city and contained the royal palace and other government buildings.

Egypt in 30 BCE. A Roman invasion in the early 20s BCE temporarily made Cush tributary to Rome. Strong resistance by Cush, however, led to Roman withdrawal and the establishment of a de facto peace between Cush and Rome that lasted until the mid-third century CE.

The early centuries of the common era were the golden age of Meroë. Cushite territory extended from northern Nubia (a Nile Valley region comprising present-day northern Sudan and southern Egypt to approximately the Aswan Dam) to near modern Khartoum in Sudan. Trade with Roman Egypt flourished, and extensive temple building and agricultural development, including the construction of water storage facilities occurred throughout Cush. By the third century, however, Cush and Meroë were both in decline. The shift of the main trade route to Egypt to the Red Sea weakened Cush economically. At the same time, attacks by the Noba and Blemmyes, nomadic peoples from the western and eastern deserts, and by the neighboring kingdom of Aksum undermined

Although the Cushite kings' claim to be sons of Amon and their royal regalia both reflected Egyptian influence, uniquely Cushite were the preference given the son of a king's sister in the succession to the throne and the prominent role assigned to the queen and especially to the king's mother, who bore the title *kandake*. Some *kandakes* even ruled in their own name during the late first century BCE and first century CE. Local tradition also influenced religion in Meroë, most notably in the prominence of the lion-headed war god Apedemak, who functioned as the king's protector and was worshipped in a uniquely styled one-room temple that had no parallel in Egypt.

Meroitic elite culture was literate. Its unique alphabetic script was developed in the late third or early second century BCE. Consisting of twenty-three symbols adapted from Egyptian hieroglyphic signs, it was used for governmental, religious, and funerary texts written on a variety of media, including stone, wood, *ostrakoi* (pieces of broken pottery), and papyrus.



Aerial view of the Nubian pyramids at Meroë. Image owner: Francis Geius—Mission SFDAS 2001.
Photographer—B. N. Chagny.

Decipherment of the Meroitic language will provide valuable insights into Meroitic history and culture.

For almost seven hundred years Meroë was the most important city in ancient northeast Africa. During that period, it fostered extensive cultural and economic interaction between sub-Saharan Africa and Greco-Roman Egypt. It also established a tradition of urban life and state-level social and political organization that survived the fall of the city and continued to influence the Christian kingdoms that dominated the Nile valley south of Egypt during the Middle Ages.

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See also Trading Patterns—Trans Saharan

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Mesoamerica

Mesoamerica (most of present-day Mexico and parts of Belize, Guatemala and Honduras) was one of the two regions in the Americas (the other being the Andes) where complex state societies developed before the arrival of the Spanish in the early sixteenth century. The long-term and extensive contact among peoples and states in the region influenced sociopolitical, cultural, and religious ideas in other regions to the south and north.

Mesoamerica designates a cultural region of Middle America prior to the Spanish conquest. The label was suggested by the anthropologist Paul Kirchhoff in 1943 and has come into general use since. Geographically, Mesoamerica included almost all of Mexico as well parts of what are now the nations of Belize, Guatemala, and Honduras. As a cultural region, Mesoamerican states shared a cluster of characteristics (with some regional variation) that distinguished them from societies in regions to the north and south. These included a state-level political organization with power resting in city-states, theocratic rule, monumental architecture and sculpture, and an economy based on the acquisition of food through taxation and warfare. Mesoamerican states typically had a hierarchical social structure with two primary classes, nobles and commoners, the latter being mainly farmers, and a third category of occupational specialists that included priests, scribes, potters, warriors, and sculptors who served the state. The best known of the Mesoamerican states are those of the Olmecs, Maya, and Aztecs. These ancient states and their monumental art and architecture have become part of modern Mexican national identity, while the

remains of their cities and buildings are major tourist attractions.

From the perspective of world history, Mesoamerica is important not so much because it was a distinct cultural region but because it was one of the two regions in the Americas (the other being the Andes) where complex state societies developed, because of the long-term and extensive contact among peoples and states in the region, and because of its influence on other regions to the south and north. Mesoamerican states differed from early state-level societies elsewhere in the world in that the domestication of large animals did not occur, despite the domestication of plants. In addition, most Mesoamerica states had less interest in territorial expansion than in maintaining economic control over subjugated communities.

Over the more than three thousand years during which states emerged, expanded, contracted, and disappeared in the region, large and complex trade networks developed that crisscrossed Mesoamerica and extended at times south into present-day El Salvador and north to the Great Lakes. These networks played a leading role in creating a cultural unity across the region that survived the passage of time and the fall of empires. Systems of exchange in Mexico emerged about 2000 BCE, when chiefdoms in several locations began exchanging precious metals, obsidian blades, pottery vessels, and ritual items such as shell ornaments and turtle shells. Most of these trade goods were used in ceremonies and were likely produced by specialists for the rulers. Exchange of objects for ceremonial use accelerated during the Classic period (c. 250 CE–900 CE), when Mayan rulers accumulated feathers, precious stones, foodstuffs, and obsidian objects as signs of their wealth and power.

In central Mexico, in the powerful city-state of Teotihuacán, the focus was on production and trade, with numerous craft workshops creating obsidian objects and pottery for trade throughout Mesoamerica. Also present were professional merchants who coordinated trade among different city-states. The Postclassic period (900 CE–1521 CE) saw a dramatic increase in exchange across much of the region. Not only goods but also ideas—art style, religious beliefs, forms of government—spread across the region, and a few hundred years before the Spanish conquest, professional merchants, marketplaces, and money were in use.

Periodization

Archaeologists conventionally divide Mesoamerican prehistory into four periods: Archaic (c. 15,000–c. 1600 BCE), Preclassic or Formative (c. 1600 BCE–c. 250 CE), Classic, and Postclassic. Cutting across these periods is a geographic classification of Mesoamerican societies as lowland or highland.

Mesoamerica was settled about 13,000 BCE, and by about 7000 BCE the region was widely inhabited. These first settlers were foragers whose diet was rich in animal protein. During the Archaic period, first gourds and then maize and beans came under cultivation. By the end of the Archaic period people were living in small villages with local burials and signs of ancestor veneration.

States in the Preclassic and Classic Periods

The Preclassic period saw a significant increase in scale, with the development of larger and more permanent settlements and the rise of political leaders, social distinctions based on wealth and power, more intensive farming, and the emergence of exchange networks. The most important Preclassic society was the Olmec culture (1200–400 BCE) on the southern Gulf Coast of Mexico. The key Olmec centers were at San Lorenzo and La Venta, where archaeologists have found remnants of monumental architecture,



evidence of a complex religious system and extensive exchange for luxury items used in public rituals, and distinctive large, carved stone heads. By the close of this period, Mesoamerica was dotted with city-states supported by surrounding farming communities and trading with one another. The Zapotecs in the valley of Oaxaca developed the first writing system and calendar at their regional center of Monte Alban.

Teotihuacán, a large city-state in central Mexico, spanned the Preclassic and Classic periods. It was the largest city in the Americas and one of the largest cities in the world in the first millennium CE. It began to develop as a population center in about 200 BCE and flourished from about 150 CE to 750 CE, when the center of the city was burned. From that time on Teotihuacán ceased to be a major urban center. It may have been home to as many as 200,000 people at times, with its inhabitants depending on foodstuffs raised using irrigation and terraced agriculture. The city was built on a grid plan, with a major north-south street. Most buildings in the center were large apartment blocks that housed the residents, probably localized on the basis of kinship. There were also numerous craft shops, merchant facilities, and public and ceremonial structures. The rulers never controlled a large territory, but the cultural influence that Teotihuacán spread through trade networks was



The island of Janitzio in Lago de Patzcuaro is now a major vacation venue. Patzcuaro was once the capital of the late Postclassic Purepecha state in central Mexico.

enormous. Its distinctive aesthetic style, displayed in pottery, sculpture, murals, and carvings, spread throughout Mesoamerica, and its urban planning and religion were models for the latter Aztec Empire.

While Teotihuacán emerged and flourished in central Mexico, what has come to be labeled the Classic Maya civilization emerged and flourished in the lowlands of Mexico and Guatemala. The first Mayan communities emerged between 1000 and 400 BCE. These small villages became larger ceremonial sites, supported by a lucrative trade in honey and salt. Maya civilization flourished from about 300 to 900 CE, with major centers at Cobán, Tikal, Palenque, Calakmul, and Copán. A hereditary elite ruled these city-states and maintained an uneasy balance of power based on marriage alliances, trade, and warfare. Eighty percent or more of the people were rural farmers, who supported the cities and ceremonial centers through intensive agriculture. The Maya are notable in human history in the Americas for developing a sophisticated and accurate calendar, a system of writing recorded in stone and in bark texts, and large ball courts where a game that seems a mix of soccer and basketball was played, sometimes to the death. Unfortunately, the Spanish, in an effort to destroy the Mayan religion, destroyed almost all Maya written texts.

The Maya city-states began to collapse in the eighth century, with those in the south disintegrating as viable political units first and those in the northern lowlands lasting to about 1000 or later. Their collapse marked the end of the Classic period. The question of why the sudden and widespread collapse took place has intrigued archaeologists for decades. Most now

agree that no single factor was to blame, but that environmental change, population pressure, political instability, warfare, and depopulation all played a role, affecting the southern and northern lowlands somewhat differently.

States in the Postclassic Period

The early Postclassic period was marked by the appearance of several regional city-states, including the Toltecs (centered at Tula in Central Mexico), the Mixtecs (in Oaxaca), the Tarascans (in Michoacán), and the northern Maya center of Chichén Itzá. The final and largest preconquest state was the Aztec Empire, centered in the Valley of Mexico, which grew to be the largest tribute-based empire in the Americas. The Aztec Empire ruled much of central and southern Mexico from 1430 until 1521. Its capital city of Tenochtitlán was modeled on Teotihuacán, and its religion, too, resembled that of the earlier city-state, while its political system was based on the Toltec system at Tula.

Mesoamerica after the Spanish Conquest

At the time of the Spanish conquest, most Mesoamericans were small-scale farmers. The Spanish rulers established the *encomienda* system, whereby districts were put under the control of colonists who exploited indigenous labor for work on farms and in mines. Catholic missionaries did their part to convert the native populations to Roman Catholicism, although



The remains of a Tarascan ceremonial center in central Mexico.

some missionaries also tried to protect them and end harsh labor practices. The indigenous population was severely damaged by disease and the harsh colonial conditions, and some people sought refuge in isolated villages. In the 1880s the *encomienda* system gave way to the hacienda system, which saw the remaining good Indian land transferred to the government and sold for commercial use. Indigenous peoples became even more isolated in rural communities, some surviving on poor land as subsistence farmers while many others labored in the hacienda fields.

The Mexican revolutions of the early twentieth century restored some land to native peoples, and more was returned in the land reforms of the 1930s. Nonetheless, most rural indigenous remain impoverished farmers, with most land used for commercial farming by mestizos (people of mixed European and Indian descent), who looked down upon Indians as inferior. Since the 1970s there have been a series of peasant revolts over land rights involving Indians in rural Mexico. There has also been substantial migration to cities, other regions of Central America, and the United States.

In the twenty-first century, Native Americans make up 9 percent of the population of Mexico and 44 percent of the population of Guatemala. In rural

areas, indigenous identity is based on speaking a native language; subsistence farming based on maize (corn), beans, and squash; weekly outdoor markets; traditional dress style; use of traditional techniques to produce traditional craft items; and adherence to a religion that combines the indigenous religion with elements of Roman Catholicism. Most indigenous peoples affiliate more strongly with their village than with a region or larger ethnic or language group.

Many of the indigenous groups present in Mesoamerica at the time of the conquest live on, though more as language groups than as distinct, unified cultural entities. Among the major groups are those associated with the Aztec Empire—Nahua (Mexicans), Otomi, and Mazahua near Mexico City—other surviving groups include Tarascans (Purepecha) in central Mexico; Zapotec, Mixtec, and Mazatec in Oaxaca; and some twenty-one Mayan groups in the Yucantan, Belize, and Guatemala.

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See also Art—Pre-Columbian Central and South America; Aztec Empire; Trading Patterns, Ancient American; Trading Patterns, Mesoamerican; Warfare—Pre-Columbian Mesoamerica and North America



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Mesopotamia

Ancient Mesopotamia (now Iraq), one of the world's longest (almost three thousand years old) and influential civilizations, remains the most concentrated archaeological site on Earth, a fact that provoked outcry from researchers at the outset of the 1991 bombing of the Persian Gulf known as Operation Desert Storm. Throughout the history of Mesopotamia, its people interacted vigorously with their neighbors, warring, trading, migrating, and sharing ideas.

Mesopotamia, the ancient name for the land that is now Iraq, flourished as what was recognizably the same civilization for almost three thousand years, from 3200 BCE, when the people of the region invented a system of writing and the first cities arose, to 330 BCE, when the Persian Achaemenid Empire was conquered by the Greeks. Throughout those centuries, the people of Mesopotamia used the same writing system, worshiped the same gods, lived in the same cities, and traded the same types of goods. Mesopotamia was where some of the most important innovations in human history occurred first: cities, the wheel, the plow, written law, irrigation agriculture, mathematics, and imperial government. Although peoples elsewhere in the world developed many of these innovations at other times, Mesopotamia left an impressive legacy for the histories of Europe and Western Asia.

Mesopotamia was also a center for trade and for contact between cultures. Artifacts from prehistoric sites reflect the fact that long-distance trade was taking place long before anyone could record the transactions. Throughout the history of Mesopotamia, its

people interacted vigorously with their neighbors, warring, trading, migrating, and sharing ideas.

Mesopotamia had many names during the height of its civilization, but *Mesopotamia* was not one of them. The ancient Greeks named the valley of the Euphrates and Tigris rivers “the land between the rivers” (*meso* = between, *potamia* = rivers), and the name has stuck. In the third and early second millennia BCE, there was no name for the region as a whole. The southernmost part, the area closest to the Persian Gulf, was called Sumer. Slightly to the north of Sumer, where the Tigris and Euphrates flow closest together, was the land of Akkad. Later, when these two lands were united under a single government, they came to be thought of as one state, which we call Babylonia. North of Babylonia on the Tigris was a land that had a deep historic connection with Babylonia. It was called Ashur, or Assyria, in our modern terminology. But rarely during ancient history was the land of Mesopotamia a political whole.

Prehistory

Northern Mesopotamia, the region that became known as Assyria, is a land of rolling hills that are green and covered with wildflowers in the spring but dry and brown in the summer. Southern Mesopotamia—Babylonia—is flat, hot, and dry. It would be an inhospitable desert if it were not for the two rivers that flow through it. The Tigris, the eastern of the two, is fast moving and often dangerous, whereas the Euphrates is a gentler river surrounded by rich silty soil. The earliest settlers in southern Mesopotamia, arriving around 5000 BCE, chose to live on the banks



of the Euphrates, as did most people who lived in the south in ancient times.

Early communities were small, and their inhabitants probably survived by fishing, hunting gazelles and birds, and gathering plants, along with practicing small-scale agriculture. Agriculture had already developed in the foothills to the northwest of Mesopotamia, in Syria, and was brought to the south by settlers, who introduced domesticated grains—wheat and barley—and animals, such as goats, sheep, oxen, and pigs. The village fields might have been located in old marshlands, still wet enough to support agriculture without additional watering, or the villagers might have watered their fields using simple irrigation ditches.

Over time, the communities began to grow, requiring larger irrigation ditches and more cooperation between families in order to feed the population. From earliest times the Mesopotamians who occupied these communities seem to have understood the importance of irrigation technology. They could not allow the Euphrates to overflow its banks, for fear of the river moving to a different location, perhaps miles from their town, when the flood receded. The annual flood also came at an awkward time in the agricultural calendar and might destroy new plants if allowed to cover the fields. So the southern

Mesopotamians built up artificial levees along the riverbanks, and they dug canals and reservoirs to cope with the floodwaters. Although archaeologists have found evidence of a few devastating floods in Mesopotamian prehistory, by historic times the annual floods seem to have been brought under control and rarely presented a danger to the people or their communities.

Urban Revolution

By 3200 BCE the landscape had changed dramatically in southern Mesopotamia. Up and down the banks of the Euphrates were big cities, each one home to 10,000–25,000 people, the first cities on Earth. Each had a big temple complex in the center, surrounded by mud brick houses built in rows along narrow streets. Around the cities were canals and irrigation ditches, bringing river water to long, rectangular fields of wheat and barley. Gardens of palm trees spread along the levees of the river. Most city residents were farmers who went out to work their fields during the day, but some residents engaged in specialized professions; these included metal workers, potters, textile weavers, priests, and traders. This was the time when some people began to become rich while others fell into debt and poverty.

This period, known as the Uruk period, also witnessed the invention of the wheel, the plow, and the cylinder seal for marking property. With the invention of metallurgy, copper bowls and, later, bronze weapons and tools were forged.

Someone must have been in charge of the individual cities, though archaeologists are unsure who. Some sculptures from the Uruk period feature men who wore long beards and broad belts. These must have been important individuals to have warranted having their portraits sculpted. It is possible, since temples dominated the cities, that these were priest-rulers.

The cities of the south were certainly in contact with one another, but they also had connections with other cities at a great distance, in Syria to the northwest and Assyria to the north. Indeed, the settlements of the Uruk period seem to have been colonies established by southern cities as centers for an extensive trade network. The styles of architecture and pottery in the colonial outposts are almost identical to those in the south and contrast dramatically with the material culture in surrounding towns and villages.

One of the most important innovations of the Uruk period was the invention of writing. The first signs were pictures, drawn carefully on clay tablets, but the pictures soon became simpler and unrecognizable as objects. The signs were drawn with straight lines, impressed by a stylus with a distinctive end that resulted in small wedges at the end of each line. These wedges give the script its modern name, cuneiform, from the Latin word *cuneus*, meaning “wedge.” Some of the cuneiform signs stood for whole words, but most were phonetic symbols that represented the sounds of the language.

Around 2900 BCE the first kings took power in Sumer and in Akkad to the north, marking the beginning of the early dynastic period of Mesopotamian history. Each of the major cities had its own king, and each city-state was also home to a god. The major temple in each city was where the city god and the god’s spouse were believed to live. For example, the city of Nippur was the residence of the king of the gods, Enlil. The city of Ur was home to the moon god,

Nanna. The people of Sumer and Akkad believed in all these gods, but had a special connection with the god of their own city, by whom the king of the city claimed to have been chosen by the god to rule.

Akkadian Empire

Throughout the early dynastic period, city-states warred with one another, sometimes forming leagues, sometimes forced to submit to rule by another city. But it was not until the twenty-fourth century BCE that the entire region was brought under the rule of a single government. Sargon of Akkad (reigned c. 2334–2279 BCE) forged the first empire to include people of different nationalities. He dominated the Sumerian-speaking peoples of the south, the Akkadian-speaking peoples of the center, and the Eblaite- and Hurrian-speaking peoples of the northwest. He claimed to have conquered from the Upper Sea (the Mediterranean) to the Lower Sea (the Persian Gulf). Sargon also boasted that he sponsored trade on a large scale, welcoming ships from as far away as Dilmun (Bahrain), Magan (Oman), and Meluhha (the Indus Valley) to his ports. Archaeological evidence supports this claim, as objects from these regions have indeed been found in Mesopotamia, and Mesopotamian artifacts have been found in lands bordering the Persian Gulf and in the Indus Valley.

Sargon’s religious innovations included making his daughter, Enheduanna, the high priestess of the moon god at Ur. She was first of many royal women to hold this powerful position, and was also the author of many hymns to the gods.

Sargon’s native language of Akkadian was used for the first time in written documents, but it had long been spoken throughout Mesopotamia and was gradually replacing Sumerian as the spoken language of the people, even in the south. Akkadian is a Semitic language, related to modern-day Hebrew and Arabic.

Third Dynasty of Ur

Sargon’s great empire was maintained and even enlarged under the rule of his grandson, Naram-Sin

(c. 2254–c. 2218 BCE), but it collapsed under an invasion around 2150 BCE. The invaders were Gutians from the mountains to the east, whom the Mesopotamians viewed as only partly human—their language sounded to Mesopotamian ears like dogs barking.

It was not until 2112 BCE that the land was once again united, this time under the third dynasty of kings from the southern city of Ur. This era is often known as the Ur III period. Unlike Sargon, the Ur III kings did not emphasize their military conquests. Instead, they focused on peaceful, organizational developments. They standardized weights and measures; introduced a staggeringly complicated bureaucracy, in which, for example, every animal dedicated to a temple was recorded in daily and monthly records; built the first ziggurats (monumental stepped towers associated with temples to the gods); and tried to revive Sumerian as the language of literature and administration. Thanks to their scribes, many of the classics of Sumerian storytelling were recorded and kept for future generations.

Shulgi, an Ur III king whose long reign lasted from 2094 to 2047 BCE, also created the first written set of laws. This achievement has often been credited to his father, King Ur-Nammu (reigned 2112–2095), but Shulgi is now thought to have been the one responsible. Only thirty-seven of the laws survive; but this is enough to show that most crimes were punishable by fines and that a court system was already in effect.

The kings of the Ur III period seem to have had less contact with the lands of Magan and Meluhha than did the Akkadian kings, but they had diplomatic ties with kings in Elam, in what is now eastern Iraq and western Iran. In fact, several princesses of Ur were married to kings and princes of Elam in dynastic marriages that aimed to strengthen ties between the states.

Old Babylonian Period

Mesopotamia was constantly subject to immigration as people from neighboring lands moved to the river valley, settled, and adopted Mesopotamian ways. The valley was not protected from the outside

by any natural barrier, or even any clear political border, and its agricultural wealth must have made it a magnet for people from areas with less fertile soil. One such people were the Amorites, who came from somewhere to the west of Mesopotamia, though historians are not certain where. They began as immigrants, but ended up, around 2000 BCE, as invaders, taking over control of Mesopotamia from the weakened kings of the third dynasty of Ur. Amorite dynasties conquered and then ruled some major cities and some lesser-known ones. One of the latter was Babylon, which only became an important place under its Amorite kings. The kings of Babylon (Hammurabi being perhaps the most notable) had a particularly stable dynasty, with son taking over from father on the throne for at least seven generations, and perhaps as many as eleven.

Late Bronze Age

In 1595 BCE Babylon was attacked and sacked by an army from Hatti (modern Turkey). The Hittites, as the people of Hatti were called, were relatively new to power, and it was two centuries before they became a major international force, but their raid into Mesopotamia had a devastating impact on the Babylonians. The land fell into a dark age, during which few cuneiform documents were written. By 1500 BCE a new immigrant dynasty was on the throne—the Kassites. Like the Amorites before them, they adopted Mesopotamian gods and Mesopotamian dress. They used Mesopotamian languages (Sumerian and Akkadian) in their administration and inscriptions, and only used their native language to write their personal names (though they may well still have spoken in Kassite). The Kassites oversaw four centuries of peace and prosperity during the late Bronze Age, when Babylonia was in close diplomatic and economic contact with the other great powers of the region: Egypt, Hatti, and Mittani (a state that encompassed Syria and the northern part of Mesopotamia that became Assyria).

The kings of these lands married one another's daughters, sent one another luxury gifts, and kept

The fox could not build his own house, and so he came to the house of his friend as a conqueror. • **Sumerian Proverb**

ambassadors and messengers busy traveling for months between one another's courts with letters and news. The lands also periodically went to war, though Babylonia seems for the most part to have stayed out of military conflicts.

Mittani suffered a setback when its eastern half, Assyria, asserted its independence in the fourteenth century BCE. By 1250, Mittani was gone, swallowed up by the imperial ambitions of its neighbors. By around 1100 BCE, all the great powers had fallen into decline, even the upstart Assyria. Many theories have been put forward to account for this disaster at the end of the Bronze Age, including climate change, invasion, internal revolt, even epidemic disease, but whatever the cause, the outcome was a massive change in Near Eastern political and economic structures. Small kingdoms became the rule of the day, and for over a century scribes seem to have been writing nothing at all (though someone was keeping the cuneiform tradition alive somewhere, because some centuries later cuneiform sources reappear, so we have almost no clue as to what was happening.

Neo-Assyrian Empire

In the ninth century BCE Assyria began to reassert its dominance over northern Mesopotamia. Its kings were devoted to their state god, Ashur, and put great value on military prowess. They built up armies and sponsored the development of new military technologies (such as the siege machine and battering ram) that enabled them to expand the borders of their kingdom to the east, north, and south.

Like earlier Mesopotamian emperors, the kings of Assyria were masters of organization. They divided their empire into provinces, each ruled by a governor; they posted garrison troops in these provinces, ready to put down local rebellions, and they kept in close contact with even the most distant reaches of the empire. Hundreds of letters to and from the kings of Assyria have been excavated from their palaces, showing that the kings were kept well informed about even apparently trivial matters across their realm.

The Assyrian kings did not hesitate to use force to extract tribute from rebellious cities or to punish rebel leaders. They also deported whole populations across the empire in order to break up possible revolts and to settle tax-paying subjects in areas with agricultural potential. The huge wealth that flowed into Assyria from taxes and tribute was used to build spectacular palaces decorated with stone relief sculptures of the kings' victories. Ashurbanipal (reigned 668–627 BCE) created a vast library of cuneiform documents, literary works copied from originals that he had scribes seek out in cities throughout Assyria and Babylonia. The study of astronomy, mathematics, and other sciences blossomed under the patronage of the kings of Assyria.

At its height, Assyria shared with Babylonia a common culture, a common written language (Akkadian, though Aramaic was increasingly the spoken language in both regions), a single writing system, and a shared belief system. Their economies were intertwined, and yet they were ambivalent about one another: sometimes they were at war, sometimes Assyria dominated Babylonia; sometimes they managed a fragile peace under separate governments.

Neo-Babylonian Empire

In 612 BCE the Assyrian Empire fell to the combined forces of its neighbors to the south and the east—the Babylonians and the Medes. Its cities were sacked and burned, and Assyria never again became an important player on the world stage. For seventy-five years the center of Mesopotamian culture returned to Babylon. Nebuchadnezzar II (reigned 605–562 BCE) enlarged and beautified the city with a huge palace, an embellished ziggurat to Marduk, magnificent city walls, and gateways several stories high decorated with brilliant blue glazed bricks and sculpted lions and dragons. Later classical historians even credited him with building the hanging gardens of Babylon, though there is no evidence of them from his reign.

The Neo-Babylonian kings, like their Assyrian forebears, extracted tax and tribute from their empire,



and even tried (unsuccessfully) to conquer Egypt. It was during the reign of Nebuchadnezzar that Babylon conquered the kingdom of Judah and many Jews, including the king, were taken captive to Babylon. But the Neo-Babylonian kings fell victim to their neighbors the Persians, situated in what is now Iran, during the reign of Cyrus II (reigned 559–c. 529 BCE). The Persian Empire, which stretched from the Indus Valley to Egypt, lasted until 330 BCE, when it fell to Alexander of Macedon (Alexander the Great, reigned 336–323 BCE).

Legacy

The Akkadian and Sumerian tongues faded from use during Persian and Greek rule, but although the civilization was forgotten for many centuries, its great innovations lived on. The Canaanites and Israelites had taken on many of the legal ideas from Hammurabi's laws, and from other Mesopotamian collections. These are reflected in the Biblical laws, which were never forgotten once they had been compiled. The Greeks learned mathematics and astronomy from the Mesopotamians and elaborated the sciences further. They also adopted Mesopotamian astrological ideas, military tactics, and artistic styles. It is from the Mesopotamians that we get the 24-hour day, the 60-minute hour, and the 60-second minute, and the 360-degree circle (their numerical system had a base of sixty). Our writing system is not directly descended from cuneiform, but the idea of writing down sounds, a concept common to both cuneiform and Egyptian hieroglyphs, inspired the creation of the alphabet. Even the very idea of urban living first developed on the banks of the Euphrates, as did many early experiments in how to govern. Mesopotamian civilization was one of the longest lasting and most influential in all of human history.

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See also Babylon; Hammurabi; Persian Empire

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Metallurgy

Although metallurgy as a science is relatively recent, the knowledge of metals, their uses and properties, and the methods for obtaining and working with them date back to the origins of civilization. In the twenty-first century the complexity and speed of technological change, and the most recent progress in science and engineering, fosters the constant development of new materials and processes.

Archaeological evidence suggests that the first metals known to man were those presented more frequently in nature in their native or metallic state, that is to say gold, copper, silver, and meteoric iron. It was probably in Anatolia that metals were used for the first time, around 7000 to 6500 BCE. It is possible, nevertheless, that metals were first employed independently in diverse areas, at dates even earlier than those conventionally accepted.

Metallurgy in Prehistory

In its early stages, interest in native metals would likely have been linked more to their aesthetic characteristics (brightness, color, weight) than to their practical possibilities. Their external appearance made them attractive and easily recognizable, and they were used for artistic, ornamental, or magical/religious purposes. During this period, when humanity was still in its prehistoric phase, native metals were worked making use of mechanical methods, in accordance with techniques and abilities similar to those used by primitive humans to work stone, bone, or wood. Unlike these conventional materials, however, the malleability that characterizes metals made

it possible to fashion much more diverse, precise, and effective objects, including tools and weapons. In a more advanced era (c. 4000 BCE), the use of fire would allow the forging, casting, and molding of some of the metals already known (copper and gold), representing a new step in the development of metallurgy and the productive use of the metals.

The decisive advance, however, would take place once it was possible to obtain metals, initially copper, by reducing their corresponding mineral content by means of pyrometallurgical methods, around 3500 BCE, in the region of the Near East. Starting from that point, metallurgy combined its original mechanical procedures with the complex chemical processes that take place in a reduction furnace, which are much more difficult to observe and to control. This method laid the technical foundations of modern metallurgy, and its productive possibilities, until then limited by the shortage of native metals deposits, were increased.

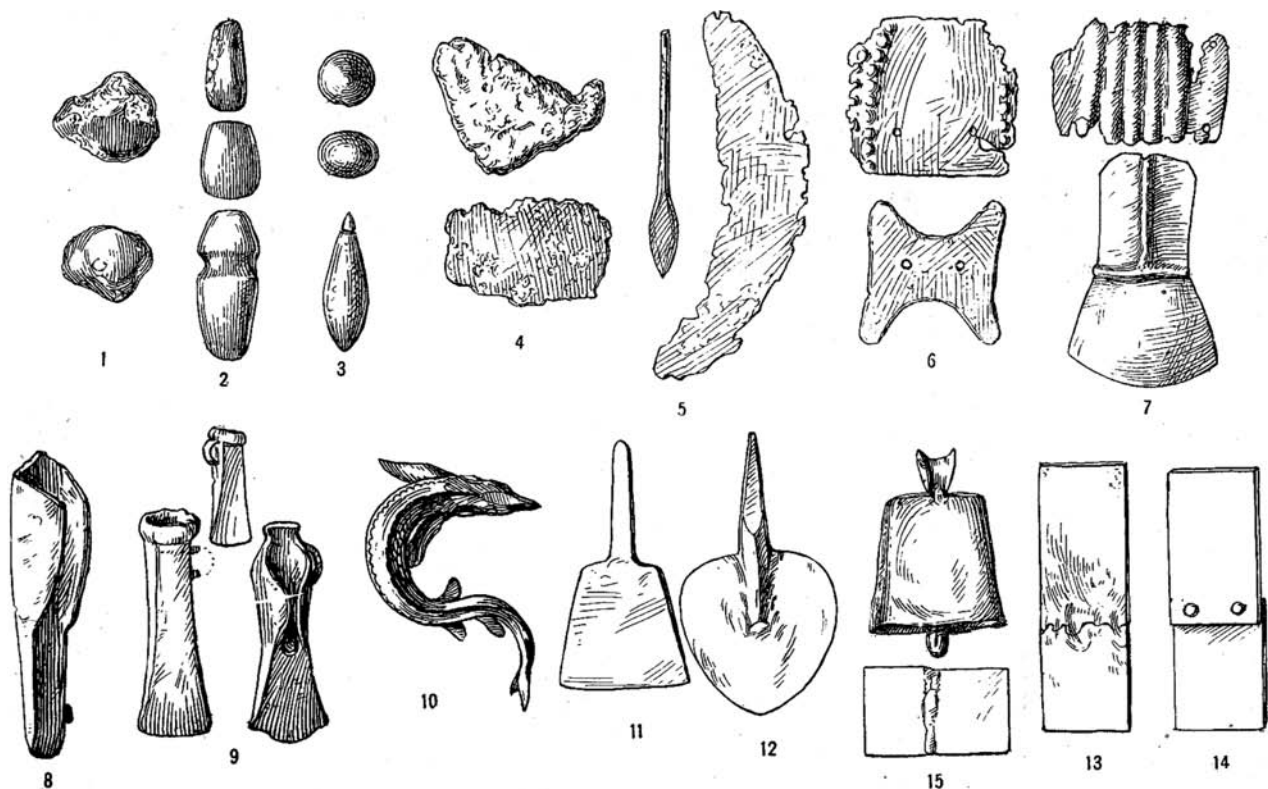
It is difficult to determine in what way and at what moment early metallurgy spread through different cultures and geographical areas. Nevertheless, it is known that by 3000–2500 BCE copper metallurgy extended over an extensive area that stretched from the Iberian Peninsula in western Europe to China on the Asian continent. Later it penetrated to the British Isles and Scandinavia (c. 2000 BCE) and Japan (c. 800 BCE). On the American continent there exists archaeological evidence of the use of native copper by the North American Indians toward 3000 BCE. However, pre-Columbian civilizations didn't come to control metallurgic techniques properly until a very late date, around the eighth century CE.

The new metallurgical procedures, almost always developed in a fortuitous and experimental way and

involving the use of fire, not only allowed an increase in the production and consumption of metals, but also opened new possibilities for improvement of their quality, adapted in each case to their application or final use. For example, objects made from pure copper were too soft; however, in combination with other metals their resistance and hardness could increase. By mixing copper and tin one could obtain an alloy, bronze, that was much more appropriate for the production of tools and weapons. The spread of this alloy, which was substituted for stone, ceramics, and other materials, in what is known as the Bronze

Age (c. 3000 BCE to c. 1000 BCE), was a decisive element in the development of the first civilizations and empires to arise in Asia Minor and in the eastern Mediterranean. This was followed by the discovery of other types of alloys whose exact composition was known only in an intuitive and approximate way.

Following the discovery of bronze, another metal had even more impact on the development of civilization—iron. Though it is one of the most abundant elements in nature (the fourth most abundant element in the world), it rarely exists in a pure state. Except for very small quantities of iron coming from



This series of drawings shows the variety of processes and products of metal working over time and across cultures: (1) nuggets of polished iron ore (Mississippian culture, Kentucky); (2) nuggets of flaked and rubbed iron ore (Mississippian); (3) nuggets of polished iron ore (Mississippian); (4) pieces of cold-hammered copper (Great Lakes); (5) copper arrowhead and sheet cold-hammered (Mississippian, Ohio and Michigan); (6) copper sheets cold-hammered and punched (Mississippian, Wisconsin); (7) copper sheets hammered, crimped and corrugated (northwest coast of North America); (8) copper cast as a half-socketed axe or adz (Wisconsin); (9) bronze hatchet blades (Europe); (10) cast-iron fish (Europe); (11) forged metal (West Africa); (12) metal worked on anvil (West Africa); (13) metal pieces welded together by firing and hammering; (14) metal pieces riveted together; (15) metal pieces of a bell joined by soldering or brazing.

meteorites—which in fact are natural alloys of iron and nickel—iron metallurgy had to be developed once the techniques for reduction and treatment of minerals were already known. It was probably discovered for the first time within the Hittite Empire, south of the Black Sea, around 1500 BCE, although we cannot disregard independent discoveries in different areas and times.

Contrary to the metals known until then, iron could not be melted and cast in furnaces whose maximum temperature was only about 1,000°C. Due to this factor, its production was not possible by means of the techniques known in the Bronze Age. Instead of liquid metal, the blacksmith obtained a spongy mass whose metal particles appeared dispersed and blended with the impurities of the mineral and the remains of the charcoal employed in combustion. To finally obtain the iron, it was necessary to develop a new process of hammering this spongy mass by means of which the slag was eliminated and the metallic particles compacted. The product obtained this way, which was practically pure iron, remained too soft and didn't offer significant advantages over bronze. It was necessary to heat it again and to forge it until it absorbed a certain percentage of carbon in its surface, a process known as carburization or cementation. The steel obtained in this way could be tempered by being introduced into cold water so that it became even harder. These new techniques constituted complex and laborious processes whose development and diffusion took place very slowly. In Europe their spread occurred throughout the Mediterranean region starting in 1000 BCE and arriving in England toward the year 300 BCE. In the East we know that iron metallurgy was introduced in India around 800 BCE and in China around 600 BCE. In China, however, the technical evolution was more rapid thanks to the discovery of the blast furnace and cast-iron production around 200 BCE; these techniques were not used in Europe until the fifteenth century CE.

Important economic and social repercussions were associated with the advance of primitive metallurgy and the use of metals. With time, the extraction and initial treatment of the minerals would become an

independent activity. Forging was probably one of the first specialized occupations. The mythology and legends of ancient peoples frequently reflect the vision that primitive communities always had of it as a mysterious and magic occupation, capable of transforming stones into metals and useful instruments. On the other hand, the use of metals, particularly iron, contributed in a decisive way to the progress of agriculture, the development of activities associated with sedentary cultures, the growth of the first urban nucleus (by its use in construction, transport, and so forth), and, of course, war.

Metallurgy in Antiquity and the Middle Ages

Once they had control of the techniques for producing iron, the forgers of antiquity had a much cheaper and more abundant metal than bronze, a “democratic metal” that could be used in numerous applications of all types. The classical Greek and Roman civilizations (600 BCE–400 CE) didn't contribute significant advances in metallurgical techniques. They extended the use of iron, as much for weapons as for tools used by artisans and farmers. The expansion of iron metallurgy and its dominance as a useful metal did not, however, pose an obstacle to the development of the nonferrous metals. Gold, silver, and bronze, besides being used for ornamental and household equipment purposes, were linked to the production of currency, whose growing use was related to the expansion of trade. Brass, an alloy of copper and zinc known prior to the classic period, began to be widely used for coinage by the Roman Empire. Lead, initially a byproduct of silver production, was extracted and removed from silver by cupellation, and was used extensively by the Romans for water pipes and cisterns. Mercury, obtained by means of distillation of cinnabar and used in Greek and Roman times for gilding, was linked to the recovery and refining of a variety of metals, especially gold and silver, through various techniques of amalgamation.

After the fall of the Roman Empire, the territories of western Europe entered a long period of economic

decline and probable technological stagnation, including stagnation in metallurgical production. Starting from the ninth century CE, however, manufactured metals were again incorporated into daily life in European societies. Nonferrous metallurgy was concentrated around the rich mines of central and Eastern Europe, with a heavy concentration, in particular, of German miners and metallurgists. Complex systems were introduced for the extraction of minerals in deeper and deeper exploitation, especially minerals with silver content. However, the foundry techniques continued to be very similar to those used in antiquity.

It was in iron metallurgy where progress was more significant. The introduction of hydraulic power to move bellows and hammers (in the twelfth and thirteenth centuries), together with the gradual increase in the size of furnaces, allowed a notable increase in the scale of production, higher yields, and a reduction in costs. The fifteenth century saw the spread of the indirect process based on the new technology of the blast furnace and the production of cast iron. Thanks to the achievement of higher temperatures, the new furnaces allowed one to obtain liquid metal, which made possible the use of molds for the production of very diverse items, but especially for the foundry of cannons and other smaller artillery pieces, which would have definitive social and political consequences. Nevertheless, most of the cast iron coming from blast furnaces was still destined for conversion into wrought iron.

Advances in Metallurgy During the Renaissance

In spite of progress in the iron and steel industry in Europe, during the Middle Ages the East remained far ahead in this field technologically. The steel coming from India and Japan allowed the manufacture of sword blades that were highly superior to those used in Europe. In China the production of cast iron, known from c. 200 BCE, grew at an extraordinary rate. By the thirteenth century a large industrial complex linked to the state and to military demand

had incorporated the foundry, using coal and the hydraulic wheel to work piston bellows, which were much more efficient than the systems used in Europe. Starting from the fifteenth century, however, Chinese metallurgy (like other important technological areas where China had been ahead of the West) was clearly stagnating, while Europe entered a new stage of technological progress and world hegemony.

In the Europe of the Renaissance, metal articles became more and more common in daily life. Demographic growth, the expansion of productive activity and trade, urban development, oceanic travel, and overseas discoveries and colonial expansion required a growing consumption of metals. Iron continued to be the metal used most frequently and extensively. The dimensions and productive capacity of blast furnaces increased gradually, and it was possible to mechanize the manufacture of iron by means of slitting mills that worked hydraulically.

After iron, the most widely used metal continued to be copper, along with its main alloys (bronze and brass). Currency necessities and the demand for bronze artillery required a growing consumption of this metal. Japan was the main producer of copper in Asia and, from about the middle of the seventeenth century, it exported significant quantities to Europe. In Europe, the copper industry was developed initially in Hungary and central Europe, in Sweden toward the end of the sixteenth century, and in England toward the end of the seventeenth. The demand for precious metals remained linked mainly to the currency demand of a more and more commercialized world economy. Production expanded due to the discovery and exploitation of the mines of Spain's colonies in the New World (Mexico, Peru), the main source of the world supply of silver from the sixteenth century onwards.

Although production techniques for nonferrous metals evolved more slowly, during the Renaissance new procedures were introduced, improving on some that were already well known. Among these innovations, reverberatory furnaces came into widespread use, coal was introduced as a fuel in certain cases, and welding techniques were improved. Most silver

was extracted from lead and copper ores by means of new cupellation and amalgamation procedures. In Saxony a new and complex method was introduced for obtaining silver by means of liquation of copper ores. In the New World, the Spanish conquest allowed the acquisition of large quantities of gold and silver that had been accumulated by the indigenous populations, primarily from native metals. From about the middle of the sixteenth century, when the potential for sacking and spoliation had been exhausted, active metallurgical production was implemented, based on an amalgamation system known as the “patio process,” which allowed extraordinary growth in the production and trade of silver.

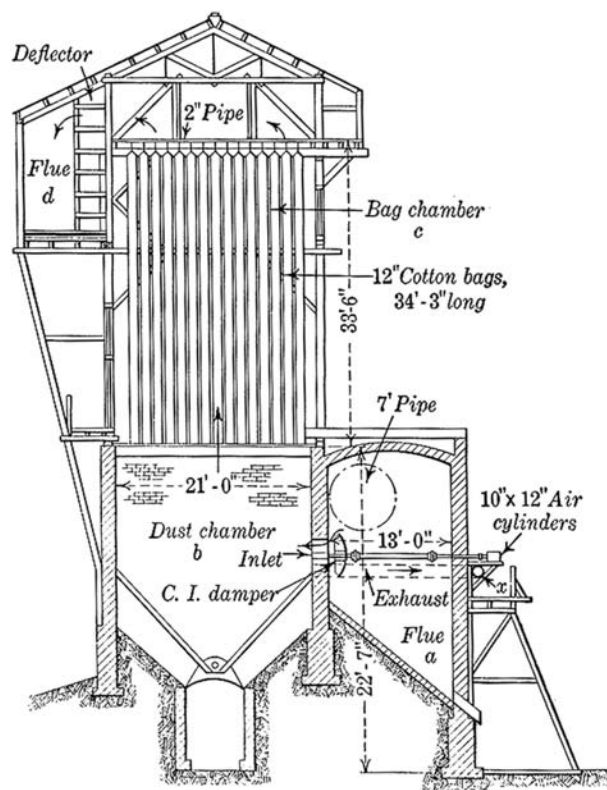
At this point, migration and the growing mobility of a specialized labor force were the main vehicles of diffusion for the new techniques, as had happened earlier with miners and metallurgists of German origin, who formed the most active nucleus of European metallurgy. On the other hand, the publication of various treatises that described with great detail and practicality the well-known techniques of the moment introduced a new element into progress in metallurgy. The works, published by V. Biringuccio (1549), G. Bauer (1556), and L. Ercker (1574), synthesized the main metallurgical procedures, creating an easily transferable, and therefore cumulative, body of knowledge.

The first Industrial Revolution (1760–1830) precipitated a new technological leap in iron production and, to a lesser degree, in the other branches of metallurgy. By the end of the eighteenth century, thanks to the gradual adoption of coal as a fuel, to the steam engine as a mechanism of propulsion, and to the puddling furnace in combination with the rolling mill, the English iron and steel industry had been able to eliminate the main technological obstacles that had slowed the growth of the sector. Iron, produced in large quantities and at lower costs, could be used in a massive way in the key sectors of the new industrial economy (such as railroad, shipbuilding, and mechanical industry) substituting for wood and other traditional materials. Production of nonferrous-metals grew more slowly and without significant technical

changes, other than some exceptions like the distillation systems applied to the production of zinc after 1738. However the growing importance of scientific investigation and applied chemistry allowed for the discovery and isolation of new metals, such as cobalt, nickel, manganese, and tungsten, among others.

Contemporary Metallurgy from 1850

The technical advances of the second Industrial Revolution would make the hegemony of iron metallurgy even greater. Where the British discoveries of the eighteenth century had allowed for the industrialization of cast and wrought iron production, in the second half of the nineteenth century decisive technical changes would be achieved in steel industry. By means of the Bessemer (1856), Siemens-Martin



A section of the bag house from J. L. Bray, *The Principles of Metallurgy*, New York: Ginn & Co., 1929. The bags filtered lead fumes and fine dust after smelting. Library of Congress.

(1857–1864), and Thomas-Gilchrist (1878) converters, it was possible to produce steel in large quantities at prices far below the previous ones. Thus steel could be used, in place of wrought iron and other materials, in a much more extensive way in all types of applications. Thanks to its hardness and elasticity it could be incorporated into the building, railroad, shipbuilding, and mechanical industries, among other sectors, contributing in a decisive way to the advancement of industrial societies.

The consumption of nonferrous metals was also affected by advances in the industry. New products and new demand sectors—such as those linked to the modern armaments industry, electrification, the beginnings of the automotive and the aeronautics sectors, and certain goods produced for domestic consumption—increased the general demand for metals and alloys with more and more precise technical requirements. The new colonialism, the internationalization of the economy, and the development of modern means of transport led to the discovery of new ore deposits and the extension of mining throughout the world. In certain cases, the procedures used in the iron and steel industry could be applied with success to other metals. But limitations imposed by traditional metallurgy were overcome with the development of new methods of electrometallurgy. These consisted of applying the potential of electric power as a thermal agent and incorporating electrolytic methods in the extraction and refined processes. The new procedures made it possible to improve the purity of the metals obtained and to produce new metals and alloys industrially.

Although there had already been advances in industrial chemistry at the beginning of the nineteenth century, it was not possible to develop the full potential of electrometallurgy until the availability of abundant and cheap electricity. In fact, copper, whose purity was a decisive characteristic for use as an electrical conductor, was the first industrially refined metal obtained by means of electrolysis (1865), which contributed in a decisive way to the growth of the electric industry. Aluminum, magnesium, special steels, and other very diverse alloys could be

developed commercially thanks to the technical and economical possibilities of electrometallurgy. In addition, electric furnaces have provided the industry with greater flexibility of location and have reduced pollution emissions considerably.

The development of contemporary metallurgy has been associated with important advances in the administration and the organization of the industry. The necessity of integrating different production processes in a single factory, the high cost of equipment, and the concentration of production and markets have transformed the structure of the industry and paved the way for the great modern firms and for mass production, especially in the iron and steel industry. Although in some cases experimentation and practice continue to be important, technological development in contemporary metallurgy depends more and more on advances in science and investigation.

During the twentieth century the extraction and treatment of metals continued to evolve without interruption, and at an increasingly rapid pace. The progress of contemporary metallurgy has been based on new industries and demand sectors, such as atomic engineering, electronics, telecommunications, and the aerospace and military industries. Improvement in the quality of the final products, reductions in cost, the search for new alloys, and industrial production of new metals like titanium, beryllium, zirconium, and silicon have required the introduction of constant technical changes, as much in the production and finishing processes as in methods of analysis and control of the production process. Some of the technological alternatives developed in the new metallurgy of the twentieth century are: continuous casting and the Basic Oxygen Steel process in the steelmaking industry, hydrometallurgy (aqueous processing of metals) for the treatment of precious metals and minerals of high value (uranium, nickel, cobalt), the use of powder metallurgy to obtain certain structural parts for industrial use, and special alloys of mixed constitution (with metallic and non-metallic elements).

The complexity and speed of technological change in advanced societies make it impossible to foresee future tendencies in metallurgy. The most recent



progress in the science and engineering of materials is allowing the constant development of new materials and processes. Although in some cases new plastics, ceramics, and hybrid materials may compete with and displace metals in certain applications, the development of metallurgical engineering in the current technological environment of cross-disciplinary investigation will continue to constitute a decisive element in the technological progress and industrial systems of the future.

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See also Technology—Industrial

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Migration—Overview

Early humans spanned the globe in ways that are still unclear to us, but we do know migration has been a constant feature of human history. Colonization, trade, military action, and slavery became important drivers of migration with the rise of agriculture and settled states. In the last two centuries, long-distance labor migration has grown enormously, giving rise to laws that attempt to regulate human mobility.

Humans are a mobile species. The spread of *Homo erectus* out of eastern Africa from 4 to 1 million years ago, and the subsequent spread of *Homo sapiens* that began within Africa by at least 100,000 BP (before the present) and departed Africa by 60,000 BP are the clearest examples of this. Our ability to relocate and adapt to new surroundings is inseparable from our rise as one of the dominant life forms on the planet. Our knowledge of these early migrations is sketchy. It relies on painstaking research in archaeology, linguistics, and genetics. Many of the results are still tentative, complicated by the fact that languages, genes, and material culture may or may not have moved together.

Early Humans

Scholars offer several theories to explain human migration from Africa. Early accounts of the journey out of Africa proposed that humans followed large herds of grazing animals directly overland into Europe and across Central Asia. But the fact that humans arrived in New Guinea and Australia about 50,000 BP suggests another movement across the tropical belt, perhaps hugging the coastline with the help of rafts. This

hypothesis can be further investigated with underwater archaeology, because sea levels have risen and most of what was the coastline of 50,000 years ago is now underwater. Similarly, the only clear archaeological evidence to date the migrations into the Americas is from 14,000 BP, found in what is now Chile, about as far distant as can be from the land bridge between Siberia and Alaska that is presumed to be the route by which humans arrived in the Americas. Most scholars hesitate to date the arrival in the Americas much earlier than this material evidence. But some linguists and geneticists have suggested that the migrations may have begun as long as 35,000 years ago. Whatever the earliest date of arrival, it seems reasonable to suggest that migrants arrived in the Americas via several waves rather than just one, culminating in the most recent waves across the Atlantic from Africa and Europe over the past 500 years, and from Asia over the past 150 years.

As our knowledge grows, it appears increasingly likely that early migrations were not just a single wave that slowly spread across the Earth, but a complex pattern of multiple directions, reversals, and replacements. This is most apparent when we look at scattered pockets of isolated groups around the world, whose languages have no common origins with any of their contemporary or known historical neighbors. Examples include the Basques in northern Spain, the Yeniseians in northeast Siberia, and the peoples speaking North Caucasian and Kartvelian languages between the Black and Caspian seas. These groups are likely the remnants of early populations that resided in these areas before the arrival of newer migrants anywhere between 35,000 to 10,000 years ago. Unsurprisingly, little is known



This romanticized drawing from a book of Polynesian myths shows men setting off in an outrigger canoe. Peoples who settled the Pacific Islands likely traveled in such canoes.

about the origins of these earliest populations. They may have moved across Eurasia directly from Africa. They may have radiated from a hearth of early humanity in the Caucasian mountains and eastern Anatolia. Some scholars have even speculated that the isolated languages they spoke are part of the Dene-Caucasian language group, which includes Chinese and Tibetan. This would push the origins of their languages to the Southeast Asian highlands, followed by a subsequent dispersal that moved north across Eurasia. Similarly, the later migrants that displaced these earlier populations might not have come directly from Africa but from the area that is now North Korea and Manchuria, where the Eurasiatic languages may have originated as many as 35,000 years ago. With the help of technologies such as skin rafts, Eurasiatic speakers migrated across the northern latitudes all the way from northern Canada to Ireland. These migrants included Indo-European, a

sub-group that eventually generated yet more waves of global migration that often displaced the speakers of Eurasiatic and Indo-European languages who had arrived earlier.

The causes and organization of those early movements is also unclear. Contemporary hunter-gatherers live itinerant lifestyles, but are largely confined to specific and relatively familiar territories, in part because of the pressures of the settled states around them. In conditions of relatively unpopulated frontiers, what would lead humans to spread out to new lands and learn the new technologies necessary for survival in those lands? Did entire communities move in search of food, space, or a spiritually benevolent environment? Or did isolated individuals or break-off groups leave their home community and eventually create new communities on their own or through bonding with other such individuals? If so, were such individuals compelled to leave their homes, or were they the young adults in search of wealth and adventure that have predominated among migrants during periods of written history? Did they, as is the case with many more recent migrants, originally intend to return to their home communities only to find this goal impossible to achieve? Did these new communities grow through the help of migration from other communities through marriage, capture, and voluntary movement? And, when peoples moved into places that were already inhabited, as must be assumed under models of multiple waves of migration, did they displace, live next to, merge with, or become subsumed into the preexisting communities? Presumably, specific mixes of all these possibilities happened at different times and places.

Domestication, States, and Migration

The domestication of plants and animals over the past 13,000 years has changed the patterns of human mobility. The change was not sudden: itinerant hunter-gatherer groups still exist to this day, and many peoples have mixed residence in agricultural villages with foraging and hunting excursions that could last anywhere from days to months. But by

3000 BCE new regimes of human mobility had clearly emerged. Animal husbandry and agriculture were each associated with their own forms of movement. Animal domestication was associated with pastoral nomadism in many parts of the world, in which small groups followed and led flocks to grazing grounds along seasonal circuits. Agriculture, on the other hand, increasingly tied people to single locales. But it also facilitated the rise of large states, and new forms of mobility through military action, colonization, trade, and labor migration.

The spread of these technologies was often associated with the expansion of linguistic groups, even if not necessarily with all of the speakers of those languages. The spread of Indo-European languages during the three millennia after 3000 BCE from their homeland north of the Black Sea across a region spanning from Ireland to northern India was often linked to horse domestication, and possibly to the chariot. Bantu languages started in what is now Nigeria and spread to the southern and eastern parts of Africa from 3000 BCE to 500 CE, often in association with new agricultural technologies. Austronesian languages began their spread from southeastern China through much of maritime Southeast Asia in 3000 BCE along with technologies such as rice agriculture, the stilt house, and pottery. By the time these migrations reached their farthest destinations in Hawaii, New Zealand, and Madagascar less than a thousand years ago, however, many of these technologies had been lost, with the notable exception of their formidable maritime skills based in the outrigger canoe. In all of these cases except the Polynesian islands, it remains uncertain to what extent the mobility was one of expansion into relatively unsettled areas, the conquest and replacement of previous populations, or of some mix of peoples, technologies, and languages moving across existing communities.

These technologies also facilitated the rise of military formations. The effects of the military on mobility could take many forms: the recruitment of soldiers, prisoners, and laborers for army service and public works; the movement and resettlement of administrators, craftsmen, and occupying armies to conquered

lands; the establishment of military colonies and frontier garrisons; the creation of refugees; the forcible transfer of villages and populations; and the transport of prisoners to provide public spectacle in important population centers. Some of the more well-known migrations of the past 2,000 years are associated with military conquest and colonization. These include the spread of the Greeks as far as Afghanistan behind the conquests of Alexander in the fourth century BCE; the Arab expansion of the seventh and eighth centuries that brought Islam in its wake from Spain to the borders of China; the Viking conquests in Europe from the ninth to eleventh centuries, and the Mongol conquests of much of Asia in the thirteenth century. Although in all of these cases (except perhaps the Mongols) the conquerors left an enormous cultural and linguistic legacy, but were not necessarily the majority of migrants themselves. The bulk of the people who moved may actually have been soldiers, craftsmen, traders, and refugees of other ethnicities who were compelled to move or who took advantage of opportunities in the newly expanded political spaces. The historical record often overlooks these migrations of the conquered and conscripted, although the Jewish exiles to Egypt and to Babylon, and their later global Diaspora from these destinations and from their homeland, are perhaps the most well-known of all migrations.

The rise of states, empires, and nomadic peoples also facilitated the rise of mobility for the sake of long-distance trade. Powerful states were able to regulate the trade routes, create an elite with a demand for luxury goods, and mobilize resources necessary for long trading expeditions. The skills and knowledge of nomadic peoples in Central Asia, Arabia, and the Sahara in navigating the vast expanses were a crucial part of these trade routes. Long-distance trade also led to the creation of trade diasporas, peoples linked through bonds of family, ethnicity, and common commercial interest who managed the purchasing, financing, transportation, and retailing of goods across these distances. The spread of major world religions and exchange of artistic forms also followed these routes. At the same time, growing commerce

A great emigration necessarily implies unhappiness of some kind or other in the country that is deserted. • **Thomas Malthus (1766–1834)**

and trade encouraged short-distance migration, especially to growing cities, periodic markets, and for seasonal agricultural labor. The transportation routes themselves became a major cause of migration, requiring the labor of numerous porters, animal drivers, guides, guards, and sailors. For more skilled professions, sometimes entire villages or itinerant castes and groups would specialize in the training of certain crafts such as stonework, acting, or construction, and travel the circuits from markets to manors to practice their crafts.

States could also fear unregulated mobility. The gradual suppression of nomadic peoples from 1500 until the twenty-first century is one example of this. But states also tried to manage the mobility of settled people within their borders. This rarely happened in the form of immigration laws and border control as we know now. Rather, states were more concerned to control domestic mobility and stop exit, thinking that a large population tied to the farms and fixed sites of craft production, and easily located for the sake of military service, was a source of wealth and power. In practical terms, individual towns and villages actually devised and enforced these regulations more than states. The local communities knew who was and was not an outsider, and could more effectively administer discriminatory taxes, residence permits, vagrancy and poor laws, quarantines, naturalization procedures and other regulations designed to differentiate subjects from aliens, and the different kinds of rights that were distributed to different groups.

These processes of power and mobility converged in the rise of slavery into one of the major forms of human mobility until the late nineteenth century. The rise of military formations that could be used for raids and capture, the wealth of agricultural states, the formation of settled agricultural families, and the rise of property laws and long-distance markets all facilitated the rise of slavery around the world as a means of both coercing and financing human mobility. The forms of slavery varied enormously, from de facto adoption into families to brutal labor exploitation on plantations and mines. But the relationship of slavery, markets, military, and states was a firm one.

All of these forms of mobility converged into one of the greatest migrations of human history, the conquest and repopulation of the Americas, which also provide a convenient illustration of the varied effects of migration. The movement of over 10 million African slaves from the sixteenth to nineteenth centuries was the greatest human relocation to date. The genetic impact of these migrants on the American population is undeniable, yet their linguistic and cultural impact is scattered and diffuse. The cultural and linguistic impact of the 3 million Europeans who arrived in the Americas before the 1820s is much more pronounced. But this, too, was subject to variations. In much of what is now Latin America, European genes are mixed with indigenous American and African through *mestizaje*. And, while European language and culture clearly dominates, African and indigenous American influences are prominent in many regions. Total migration before 1820 to North America and the southern cone of Argentina was much less than to other parts of the Americas. Yet the destruction of the native population was much more complete and the great majority of culture, language, and genes have come from Europe. This, of course, was largely an effect of the new waves of mass migration that began in the nineteenth century, a subject addressed in the following section.

Mass Migration from 1840 to 1940

Global migration boomed after the 1840s. This is especially true of long-distance migration facilitated by the growth in trains, steamships, airplanes, and other inexpensive and rapid transportation technologies. But shorter distance migration also grew, in conjunction with unparalleled urbanization and commercialization. These developments were inseparable from industrialization, the expansion of global markets and the concurrent massification of production, mobility, and consumption. People were drawn to jobs in factories, plantations, mines, and cities, and to distant frontiers where they provided food and resources to supply the growing industrial centers. The fields of Siberia and North America, the



This panel of cartoons expressing American anti-immigration sentiments of the late 1800s shows Uncle Sam being consumed by Irish and Chinese immigrants.

mines of South Africa and Manchuria, the rice paddies of Thailand and Hawaii, the rubber plantations of Malaysia and the Amazon, the factories of Chicago and Manchester, the canals of Panama and Suez, the entrepôts of Singapore and Shanghai, the service jobs of New York and Bombay, and the oil fields of Qatar and Venezuela have all drawn migrants as key nodes in an expanding global economy.

Much of this mobility was the continuation and expansion of practices that had been going on for centuries: travel for trade and business, the colonization of agricultural lands, the movement of soldiers

and sailors, and the constant ebb and flow of forced and free labor to plantations, mines, factories, and domestic service both far and near. But the explosion in quantity was also a transformation in quality. These migrations were increasingly free, less linked to the military, and dominated by labor migrants looking for work. Many migrants also intended to make temporary journeys to earn money and resources that could be used to support their families back home, although these intentions often changed with time. Over the course of the twentieth century, migrations were also increasingly shaped by management and



purification of national populations in the form of border controls and refugee movements.

After the 1840s, it becomes easier to specify the directions and quantities of migration. Long-distance movement increased more rapidly than world population from the 1840s to 1930, with only brief fluctuations due to the depressions from the 1870s to 1890s and World War I (1914–1918). It averaged 3.2 million migrants a year from 1906 to 1914, with transatlantic migration reaching a spectacular peak of over 2.1 million in 1913. After World War I, migration hit new peaks of 3.3 million a year in the late 1920s, with migration to Southeast Asia peaking at 1.25 million in 1927, and migration to northern Asia peaking at 1.5 million in 1929. The Great Depression put a stop to much migration, with the significant exception of the command economies of Japan and the Soviet Union, where coercion, government promotion, and relatively strong economies produced rates of up to 1.8 million migrants a year into northern Asia in the late 1930s. Long-distance migration did not again regain these per annum rates in comparison to world population until the 1990s.

Migrants who traveled by ship before World War II were counted at ports and in ships' logs, thus providing excellent data for estimates of transoceanic migration. Government frontier settlement programs such as the movement of Russians to Siberia, have also left behind some excellent data. Such estimates usually obscure return and repeat voyages. But they nonetheless allow for reasonable estimates of major long-distance and trans-oceanic migration flows.

At least 170 million long-distance (transoceanic and trans-Siberian) voyages took place from 1840 to 1940. These migrations can be divided into three main systems: 1) 55–58 million migrants from Europe and the Middle East to the Americas; 2) 48–52 million Indians and South Chinese to Southeast Asia and areas bordering the Indian Ocean; and 3) 46–51 million North Chinese, Russians, Koreans and Japanese into central and northern Asia, especially to Manchuria and the southern portions of Siberia. The majority of long-distance migration from 1840 to 1940 can be divided into three main systems. In

addition, about 2.5 million East Asians and Indians moved to the Americas, about 8 million Europeans moved to Africa, Asia, and Australia.

Over 65 percent of the transatlantic migrants went to the United States, with the bulk of the remainder divided between Canada, Argentina (which had the largest proportion of foreign-born residents), Brazil, and, to a lesser extent, Cuba. Over half of the emigration before the 1870s was from the British Isles, with much of the remainder from northwest Europe. After the 1880s, regions of intensive emigration spread south and east as far as Portugal, Russia, and Syria. Up to 2.5 million migrants from Southeast Asia also traveled to the Americas, mostly to the frontiers of western North America or the plantations of the Caribbean, Peru, and Brazil. Half of this migration took place before 1885, after which the decline of indentured labor recruitment and the rise of anti-Asian immigration laws began to take effect.

Migration to Southeast Asia and lands around the Indian Ocean and South Pacific consisted of over 29 million Indians and over 19 million Chinese, with much smaller numbers of Japanese, Europeans, and western Asians. Most migration from India was to colonies throughout the British Empire. Less than 10 percent of this migration was indentured, although much of it was undertaken with assistance from colonial authorities, or under some form of debt obligation under *kangani* labor recruitment systems. Over 2 million Indians also migrated as merchants or other travelers not intending to work as laborers. Migration expanded with the increasing restriction of indenture contracts in India after 1908 and the abolishment of indenture in 1920. Nearly 4 million Indians traveled to Malaysia, over 8 million to Ceylon (now Sri Lanka), over 15 million to Burma (now Myanmar), and about a million to Africa, other parts of Southeast Asia, and islands throughout the Indian and Pacific oceans.

The vast majority of Chinese migrants came from the southern provinces of Guangdong and Fujian. Fewer than three-quarters of a million of them signed indenture contracts with European employers,

including a quarter million to Latin America and the Caribbean before 1874, a quarter million to Sumatra from the 1880s to the 1910s, and a smaller number to mines, plantations, and islands scattered throughout the Pacific and Indian oceans. Many more Chinese worked for Chinese employers under various forms of contract and debt obligation, wage labor, and profit sharing. Up to 11 million Chinese traveled from China to the Straits Settlements, although more than a third of these transshipped to the Dutch Indies, Borneo, Burma, and places farther west. Nearly 4 million traveled directly from China to Thailand, between 2 and 3 million to French Indochina, over a million to the Dutch Indies (for a total of over 4 million if transshipments from Singapore are included), fewer than a million to the Philippines, and over half a million to Australia, New Zealand, Hawaii, and other islands in the Pacific and Indian oceans.

In the north of Asia, the Qing dynasty (1644–1911/12) government's gradual relaxation of restrictions against movement into Manchuria after 1860 and the emancipation of serfs in Russia in 1861 set the stage for more massive migration. Both governments actively encouraged settlement with homesteading policies in the 1880s, each partly inspired by the desire to forestall territorial encroachment by the other. Railroad construction in the 1890s further strengthened the migrant flows. Between 28 million and 33 million Chinese migrated into Manchuria and eastern

Siberia, along with nearly 2 million Koreans, and more than a half million Japanese. Another two and a half million Koreans migrated to Japan, especially in the 1930s. At least 13 million Russians moved into Central Asia and Siberia over this period. In addition, up to a million northern Chinese, Koreans, and Japanese migrated to a diverse range of destinations, including much of the Americas, Hawaii, Southeast Asia, South Africa, and Europe.

These long-distance movements created a significant shift in the distribution of the world's population. All three major destination regions experienced massive population growth, with their populations increasing by factors of 4 to 5.5 from 1850 to 1950. (See table 1.) These rates were over twice that for world population as a whole. Growth rates in the sending regions were lower than world population growth, and less than half the rates in the receiving regions. Taken together, the three main destination regions accounted for 10 percent of the world's population in 1850 and 24 percent in 1950.

Emigration rates were uneven within particular regions, with some villages or counties sending numerous migrants while others send hardly any at all. Nonetheless, average emigration rates in all of these systems are broadly comparable. At first glance 19 million overseas emigrants from China or 29 million from India seems negligible compared to the several millions from much smaller countries like Italy,

Table 1.
World Population Growth by Regions from 1850 to 1950 (in millions)

	RECEIVING		
	1850 Population	1950 Population	Average annual growth
Americas	59	325	1.72 %
North Asia	22	104	1.5 7%
SE Asia	42	177	1.45 %
	SENDING		
	1850 Population	1950 Population	Average annual growth
Europe	265	515	0.67 %
South Asia	230	445	0.66 %
China	420	520	0.21 %
World	1200	2500	0.74 %

McEvedy, C., & Jones R., (1978). *Atlas of world population history*. London: Penguin.

Norway, Ireland, and England. But if we look at regions of comparable size, the rates are very similar. Some of the peak recorded emigration rates ever were an annual average of 22 emigrants per 1,000 population in Ireland during the famine of 1845 to 1855, or 18 per 1,000 from Iceland in the 1880s. Some South Pacific and Caribbean islands probably experienced similar rates. More typical rates in periods of high overseas emigration are 10.8 per 1,000 from Italy, 8.3 per 1,000 from Norway, and 7 per 1,000 from Ireland in the first decade of the twentieth century. In comparison, the annual average overseas emigration rate from Guangdong Province in the south of China, which had an area slightly larger and population slightly smaller than Italy, was at least 9.6 per 1,000 in the peak years of the 1920s. Hebei and Shandong provinces (sources of migration to Manchuria) had a rate of 10 per 1,000 during that same decade.

These three systems were still only the tip of the iceberg. Many migrants also moved through Africa and western Asia, and within the main sending and receiving regions. The majority of global migration was probably to nearby cities, towns, and agricultural areas, often on a temporary basis. This migration is more difficult to count, but general patterns can be identified.

Africa experienced net immigration, but in much smaller numbers than other main destinations and from a wider variety of origins. The immigrants included over 3 million French and Italians into North Africa and up to a million other Europeans, Syrians, Lebanese, Arabs, Indians, and Chinese throughout the continent. The end of the transatlantic slave trade led to increased movement of slaves into the western Sudan, Middle East, and areas bordering the Indian Ocean in the late nineteenth century. Labor migration to plantations and mines in southern and central Africa increased through the late nineteenth and twentieth centuries, as did movement to agricultural areas and coastal cities in western and eastern Africa. Millions of people took part in these movements, some of whom were coerced and many of whom went to work for European enterprises, but many of whom also

found independent occupations. Projects such as the Suez Canal and development of an infrastructure for cotton cultivation in Egypt attracted large amounts of local migration, while Lebanon and Syria experienced some of the highest overseas emigration rates in the world. In a different type of migration, over 3 million people took part in the pilgrimage to Mecca from 1879 to 1938.

Western Asia and eastern Europe were areas of massive migration caused by violence and politics, a harbinger of the kinds of migration that would become increasingly prominent over the twentieth century. The dissolution of the Ottoman Empire and wars with Russia led to an exchange of 4 to 6 million people, with Muslims moving south from the Balkans, Greece, and Russia into Turkey, and Christians moving in the other direction. Around a million Armenians were expelled from Turkey to points around the world, and nearly 400,000 Jews moved to Palestine in the early twentieth century. The massive movement of refugees would extend to other parts of Europe in the wake of World War I and the Russian Revolution, including the movement of 3 million Russians, Poles, and Germans out of the Soviet Union.

Migration also took place within the receiving regions of the long-distance systems. The transatlantic migrations could be extended to include the 13 million people who moved to the western frontiers of North America. This process also spurred the relocation of great numbers of Native Americans, and the migration of over 2.5 million Mexicans to the agricultural areas of the southwestern United States in the early twentieth century. The industrial centers of the northeastern United States also attracted over 2.5 million Canadians, and then over a million African Americans and Mexicans in the early twentieth century. In other parts of the Americas, great numbers of Andean peoples moved to coastal plantations and cities, and over 300,000 Caribbean people migrated to plantations in Central America and Cuba, to the Panama Canal Zone, and the United States. In Southeast Asia and the South Pacific, up to 500,000 Javanese traveled to plantations in Sumatra and the



The Vila Canoas favela in Rio de Janeiro. Favelas, settlements that originated illegally in the early 1900s, attract migrants looking for employment in Brazilian cities. The government now works to provide basic human services to these areas.

Southeast Asian mainland, and over 400,000 Melanesians and Micronesians worked on plantations and as seamen throughout the region.

In Europe, migrants from Ireland traveled to England for work, and those from eastern and southern Europe to industrial areas in northern Europe, especially France and Germany. In Russia, migrants moved into the growing cities and southern agricultural areas. Within India they moved to tea plantations in the south and northeast, to the mines and textile-producing regions of Bengal, and to newly irrigated lands and urban areas throughout the subcontinent. In China, they migrated to growing coastal cities, to areas of the Yangzi (Chang) River basin left underpopulated by the devastating casualties of the Taiping Rebellion, and to borderland areas of the northwest and southwest, including overland migration to Burma.

These massive flows led to a backlash in the form of stricter migration laws. The middle of the nineteenth century was an unparalleled era of free movement.

By the 1860s, most exit controls and the local laws regulating domestic movement had been dismantled. By the 1880s, however, new regulations in the form of medical inspections and laws to keep Asian migrants out of white settler nations were in force. By the 1920s, these laws had expanded into quotas, multiple categories for admissible and nonadmissible migrants, and even a resurgence of exit controls, especially by Communist nations. Many people began to assume that a nation could not be sovereign and independent without control of its borders against immigration. The same forces and technologies that led to the boom in global mobility also made it possible to increasingly control that mobility and to make somebody “illegal” merely by virtue of moving without documents.

Migration Since World War II

International migration remained relatively low in the decades immediately following World War II, with



the exception of massive refugee flows in Europe and south Asia that resulted from the new European political map after World War II, the creation of Israel, and the partition of India. Refugees have remained an important source of migration to this day, especially in Africa, Central America, and Southeast Asia. Rural-to-urban migration also grew increasingly important in Asian, African, and Latin American countries over the second half of the twentieth century. International migration to industrialized countries expanded steadily after the 1960s, due to immigration laws that provided for guest workers, family reunification, and migration from ex-colonies. Major flows have included migrants from western and southern Asia and northern Africa to Europe, from Latin America and east Asia to North America, and from Asia to Australia. Migration to expanding economies in Japan, Southeast Asia, Argentina, South Africa, and especially to the oil-rich areas of the Middle East has also grown since the 1970s.

Due to the great diversity of administrative categories used to count migrants, it is more difficult to estimate global migration since World War II than for the previous century. A crude estimate of annual migration flows in the 1990s could start with yearly figures of 1.2 million legal migrants to the European Union and 400 to 500,000 irregular migrants. Migration to the United States averaged 860,000 legal migrants a year and perhaps another 300,000 illegals (still less than the highest numbers of 1912–1913). Migration into Canada, Australia, and New Zealand accounted for another 300,000 each. Over a million migrants traveled each year to the Persian Gulf states and Israel. Over half a million asylum applications were also made each year around the world, often not counted in migration statistics. Other major destinations include Argentina, Venezuela, South Africa, and Japan, and large flows moved between countries in Africa, Southeast Asia, and the ex-Soviet republics. A generous estimate of 2 to 3 million migrants a year for these other destinations would constitute an annual migration of 6.5 to 7.5 million a year. A hypothetical return rate of 40 to 45 percent could account for the

increase of 40 million migrants found in migrant stock estimates from 1990 to 2000. Most evidence points to migration rates remaining steady in the first decade of the twenty-first century.

A comparison of this number with the peak migrations of the early twentieth century shows absolute numbers that are up to three times higher than earlier migrations, but are quite similar as a proportion of world population. A total of 80 million migrants in the 1990s would account for 1.5 percent of world population, while the 32 million migrants from 1906 to 1915 accounted for 1.8 percent of world population. It seems likely that the impact of long-distance migration in these two periods is quite comparable. But this may not be the best measurement of global mobility. Some 700 million tourist entries were counted in 2000, up from 480 million in 1990 and 300 million in 1980, a growth that is several magnitudes of order larger than in the previous migration wave. While this movement may not generate significant shifts in the global population, it has had an enormous effect on the global economic, social, and cultural order.

Given the difficulty in counting mobility, most international organizations now prefer to count “migrant stock” in national censuses as a way to quantify the effects of migration. (See table 2.) This, too, is a very imperfect form of measurement, because some censuses count foreign birth, while others count only foreign residents who have not become citizens, and others merely note racial or ethnic distinctions. This system may also count people who have never moved all their lives, while international borders have moved around them. For example, the 20 million refugees created by the partition of India and Pakistan accounted for nearly 15 to 25 percent of the world “migrant stock” through the 1970s, even though south Asia is more important as a migrant producing than receiving region. Similarly, the break-up of the Soviet Union in the early 1990s led to a dramatic increase in the proportion of migrant stock in that area, as many people living in the newly created nations chose to retain the citizenship of Russia or neighboring nations.

Table 2.*Migrant Stock as Percentage of World Population (in millions)*

Year	Foreign-born population	Percentage of world population
1910	35.7	2.0
1930	42.9	2.1
1965	75.2	2.3
1975	84.5	2.1
1985	105.2	2.2
1990	155.5	2.9
2000	195.2	3.02
2005	213.9	3.1

Sources: International Labour Office 1936; United Nations Population Division 2008; United States Census Bureau 2010; Zlotnik, H. 1998.

About 20 percent of this migrant stock can be counted in the United States, and another 22 percent in western Europe. About 7 percent of all migrants are found in Canada, Australia, and Japan. Altogether, half of all international migrants are to be found in the developed countries, marking a shift away from earlier trends of migration toward frontier areas. Of the rest, about 12 percent are found in Eastern Europe, 7 percent in the Persian Gulf states, and the other 32 percent distributed among the other nations of the world. Although the United States ranks number 1 in total immigrants counted, only 12.8 percent of the population is migrants, placing it far behind small countries like Kuwait, Qatar, and the United Arab Emirates, in which 60–80 percent of the population are immigrants.

Other trends over the second half of the twentieth century include the rise of women and professional migrants. In the first wave of mass migration, men were the majority of migrants, with the exception of some flows like the Irish and the Jews. In the 1920s and especially the 1930s, women made up an increasing proportion. Now, about half of international migrants to most destinations are women. Similarly, migrants are no longer made up mostly of laborers and ex-peasants. Professionals have made up more than 20 percent of migrants into North America and Europe since the 1960s, and are a significant proportion of migrants into the oil kingdoms. Several immigrant groups in the United States, from Indians and Filipinos to Argentines and Nigerians have higher

educational levels and family incomes than the native-born white population. Immigration law preferences for the wealthy and educated play an important role in this stream, as does the lack of intellectually and financially attractive jobs in many poorer countries. Over time, however, migrant flows once dominated by educated professionals open the door for a rise in less-skilled migrants taking advantage of family reunification opportunities, and the proportions turn toward less-skilled migrants.

The expansion of migration laws and their continual proliferation of categories, have also shaped the quantities and directions of migration. In the twenty-first century it is almost impossible to talk of migration without simultaneously talking about status as tourists, immigrants, permanent residents, business travelers, holiday workers, guest workers, family reunification, investors, students, illegals, and the undocumented. The control of mobility is the most intensive space of systematic discrimination in the world today, where the accidents of birth and wealth determine who is free to move and who is a criminal by virtue of moving. In a world increasingly characterized by mobility, that mobility is impossible to understand apart from the controls and definitions imposed by states.

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See also *Diasporas*; *European Expansion*; *Migration*, Asian; *Migration*, Indo-European



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Migration, Asian

Asian peoples were among those participating in large-scale migrations, often over long distances, between 4000 BCE and 1000 CE. During the past several centuries millions of eastern and southern Asians relocated to become a visible and vital presence in the population of many nations and the world economy.

Human migration is a central theme in world history and can be traced back to prehistory. Some of the movements after 1500 CE are well known, such as the migration of millions of Europeans to the Americas, Oceania, and southern Africa and the transport of many enslaved Africans across the Atlantic. The less well-known migrations of Asian peoples also began early and continued down to modern times. During the past several centuries millions of eastern and southern Asians relocated temporarily or permanently, some to nearby countries, others to faraway lands, making these migrants and their descendants a visible and vital presence in the world economy and in the population of many nations.

The Long History of Asian Migration

Large-scale migration, often over long distances, has been a pronounced pattern for thousands of years. Various Asian peoples were among those on the move between 4000 BCE and 1000 CE. Chinese spread from northern into southern China. Mobile Central Asian pastoralists migrated frequently. Some of them moved into China, western Asia, or Europe. Various peoples from western and Central Asia crossed the high mountains into northwestern India, where they mixed with the existing populations. Many

Japanese descend from Koreans who crossed to the archipelago several millennia ago. Austronesians spread from Taiwan into the Philippines, Indonesia, and Malaysia. From there, some Austronesians, using advanced maritime technology and navigational skills, sailed east into the vast Pacific, settling remote islands and forming the Polynesian and Micronesian societies. The descendants of these Asians include the Hawaiian, Maori, Samoan, and Tahitian people. Other Austronesians sailed the other way, sojourning in East Africa and occupying the island of Madagascar. Thanks to migration, Austronesian languages are spoken today from the western Indian Ocean to the eastern Pacific. The ancestors of the closely related Thai and Lao peoples moved from southwestern China into Southeast Asia a millennium ago, eventually forming their own states.

In the eighteenth century, another large-scale migration of peoples from eastern and southern Asia began, mostly by sea to distant shores. The emergence of capitalism in Europe and the emergence of a truly world economy played a role. In a quest for resources and markets to be exploited, Western nations colonized most Asian, African, and American societies. The development of modern transportation networks, aided by the introduction of larger and faster ships and later by air travel, facilitated this movement. Some colonial powers looked to the densely populated Asian societies to provide a labor force for their plantations and mines. In more recent decades many Asians, some middle class, some refugees, and others impoverished workers seeking low-wage jobs, have migrated to Western nations legally or illegally.

Today perhaps 40–45 million Asians live outside, and often thousands of miles away from, their

ancestral homelands. Chinese and Indians account for the great majority of Asian migrants. Many settled in Southeast Asia, but the two groups also established large communities in the Americas, Pacific islands, Europe, and parts of Africa. Japanese, Koreans, Filipinos, and Indonesians moved to Pacific islands and the Americas. In the last thirty years of the twentieth century, several million Vietnamese, Laotians, and Cambodians fled war and repression for new homes elsewhere, particularly in North America. These varied diasporas of Asian peoples constitute one of the more important social and economic developments in modern world history.

Chinese Emigration

The Chinese accounted for some two-thirds of the long-distance Asian migration between 1750 and 1940. More than 30 million people of Chinese ancestry or ethnicity, often known as overseas Chinese, live outside of China, Taiwan, and Hong Kong today. Over 20 million of them reside in Southeast Asia. As a result, some 7 or 8 percent of all Southeast Asians have some Chinese ancestry. Three-quarters of Singapore's population is ethnically Chinese, as is a quarter

of the population of Brunei, a third of Malaysia's population, and thirteen percent of Thailand's. Three countries—Indonesia, Malaysia, and Thailand—each contain at least 4 million people of Chinese descent. More than a million ethnically Chinese people live in the United States. Several dozen nations or territories outside Southeast Asia also have sizeable Chinese communities. These include Japan, Canada, Mexico, Cuba, Jamaica, Trinidad and Tobago, Guyana, Surinam, Panama, Costa Rica, Peru, Brazil, the Society islands (including Tahiti), Fiji, Papua New Guinea, Australia, New Zealand, India, South Africa, Malagasy, Mauritius, Great Britain, the Netherlands, Germany, Portugal, France, and Russia. But most nations in the world have at least a few Chinese-run restaurants or other businesses, making the Chinese diaspora perhaps the world's most widespread.

This emigration has a long history. Chinese merchants have sailed to Southeast Asia to trade for several thousand years. By the fifteenth century Chinese trade networks linked Southeast Asian trading ports to the southeastern Chinese coast. Beginning in the later 1500s Chinese settlers became dominant in the commercial sector in several Western colonies in Southeast Asia, including the Spanish-ruled Philippines and Dutch-ruled Java. Between 1750 and 1850 many Chinese settled in Thailand, Malaya, and Indonesian islands such as Borneo to trade or mine for tin and gold, sometimes establishing their own self-governing communities. The present royal family of Thailand descends from an eighteenth-century Chinese immigrant.

During the later nineteenth and early twentieth centuries, wars with the Western nations and Japan, rebellions, corruption, population explosion, growing landlessness, and natural disasters in China prompted millions to emigrate, mostly to places where Western colonialism and capitalism were creating new economic opportunities. Some 90 percent of the emigrants came from two impoverished and overcrowded coastal provinces, Fujian and Guangdong, which were particularly hard-hit by Western military and economic intrusion. Between 1880 and 1920 several hundred thousand people a year left



Hula girls in their native costume. Indigenous Hawaiians are descended from Austronesians, ancestors also of the Maori, Samoan, and Tahitian peoples. New York Public Library.

from the ports of Hong Kong, Guangzhou (Canton), Xiamen (Amoy), and Shantou (Swatow) for foreign destinations.

Many were recruited into the notorious “coolie trade,” which operated from the 1820s into the 1920s. Under this system, desperate peasants become workers (known pejoratively as coolies) in far away places, especially Southeast Asia, various South Pacific and Indian Ocean islands, Hawaii, Australia, Peru, Cuba, California, and South Africa. In order to repay their passage, the Chinese signed contracts to work as plantation laborers, miners, or railroad builders for a fixed period of time, often five or ten years. The system invited exploitation in an alien environment, where the laborers who survived the difficult voyages in crowded ships faced discrimination and harsh working conditions.

Not all Chinese emigrated as part of this trade. Some paid their own fares, usually to join relatives in business enterprises. Most immigrants dreamed of returning to their native village wealthy, and some did. But many stayed overseas permanently, some because they had failed to achieve their dreams, others because they had established small businesses with their savings, marrying local women or bringing families

from China. But even those who settled abroad often sent money back to their home villages or invested in China. Today the overseas Chinese are an important source of capital for China.

Overseas Chinese Communities

Over time, the overseas Chinese were transformed from sojourners into settlers. Through enterprise, organization, and cooperation many Chinese in Southeast Asia became part of a prosperous, urban middle class that controlled retail trade. A few became fabulously wealthy businessmen or industrialists. Chinese commercial networks extended into the smallest towns. For example, many Chinese shops in small towns in Malaya and Borneo were linked through firms in larger towns to big companies in Singapore. Singapore, with a mostly Chinese population, became the major hub of Chinese economic and social networks in Southeast Asia, although Bangkok (Thailand), Jakarta (Indonesia), and Saigon (Cambodia) also played important roles. But some Chinese remained poor, eking out a living as commercial fishermen, smallholding rubber growers, or day laborers. For example, the men who pulled the rickshaws in the



Interior of a Chinese restaurant, New York City, early 1900s. Chinese have established large overseas communities in the Americas, Pacific Islands, Europe, and parts of Africa. New York Public Library.

steamy tropical heat of Singapore and Malaya faced a difficult life and often died young, sometimes from suicide.

Today the majority of Chinese in Southeast Asia, as well as in the South Pacific and Indian Ocean islands, the Caribbean, and Latin America, are engaged in commerce. The ethnic Chinese have constituted the most dynamic economic sector in Southeast Asia, with their money and initiative the basis for recent dynamic economic growth in Singapore, Malaysia, Thailand, Indonesia, and the Philippines. In North America and Europe many also opened businesses, often family-run restaurants, but many of their children gravitated to the professions or the high-technology industries. In the second half of the twentieth century many new emigrants fled Communism in China or lack of opportunity in Taiwan and Hong Kong for new lives in North America, Australia, Canada, or Europe. Most, especially the well educated, found success in their new homes, transforming the Chinese into one of the most affluent ethnic groups in these countries. But pockets of grinding poverty also remained, for example among the badly exploited immigrant workers in the small textile factories of crowded urban Chinatowns.

Many non-Chinese in Southeast Asia and the South Pacific resented the Chinese because of their enterprise, economic power, desire to preserve their language and culture, and their continuing ties to families or hometowns in China. Before the 1930s most Chinese in colonies such as Malaya and Cambodia were administered through their own leaders, usually powerful merchants, planters, or mine owners, perpetuating their separateness from local society. Conflict between descendents of Chinese emigrants and local people has been common in Indonesia, Malaysia, and the Philippines for several centuries, occasionally leading to anti-Chinese violence. Some governments have restricted Chinese political rights or curtailed economic activity. In the late 1970s many Chinese left or were expelled from Vietnam. Some of them joined a steady stream of Southeast Asian Chinese moving to North America or Oceania. But Chinese leaders run Singapore and have also played

an active role in Malaysian politics. Politicians of Chinese ancestry have led Thailand and the Philippines at various times, as well as Papua New Guinea, Guyana, and Surinam.

The Chinese have adapted to local environments in varied ways. Many assimilated over several generations. Some mixed local and Chinese customs, beliefs, and languages. These people formed distinct sub-groups such as the Peranakans of Java, the Straits Chinese of Malaya, and the Sino-Thai of Bangkok, who linked the Chinese and local peoples and moved between both worlds. But the majority of Chinese maintained their language, customs, religion, and separate identity. Many such people live in or near the large Chinatowns of cities such as Kuala Lumpur (Malaysia), Manila (Philippines), Sydney (Australia), Vancouver (Canada), San Francisco and New York (United States), Lima (Peru), and Liverpool (United Kingdom). Most Chinese emigrants spoke one of a half dozen quite different dialects. Wherever they have settled, the Chinese have organized their own schools, temples, business associations, and social organizations, fostering considerable cooperation and solidarity, which has helped sustain the Chinese communities in so many diverse environments.

Indian Emigration

Conditions in India also stimulated emigration during the nineteenth and early twentieth centuries, producing an overseas diaspora of nearly 10 million today, around a quarter of the emigrant Asian population. British colonization spurred population growth but also increasing poverty for many peasants, with no industrial revolution to absorb the excess people. As a result of these mounting problems, many millions of desperately poor, often landless, Indians, mostly Hindus but also some Muslims and Sikhs, were recruited to move to other lands. Many originated from South India; the Tamils of the southeastern coast became the largest Indian group in Southeast Asia and Sri Lanka. Others originated in North India.

The abolition of slavery in the Americas and the needs of sugar or rubber plantations in tropical



colonies created a market for indentured Indian labor. Governments in Sri Lanka, Malaya, Fiji, Mauritius, South Africa, and the Caribbean societies of Trinidad, Guyana, and Surinam recruited Indians in a system similar to the Chinese coolie trade. Other Indians built the railroads of British East Africa. Indian merchants, moneylenders, and laborers also flocked to British Burma (present-day Myanmar), Singapore, and East Africa. Some Indians settled on the Pacific coast of Canada and the United States. Between 1880 and 1930 around a quarter million people a year, both men and women, left India. The mortality rates were so high and the indenture terms so oppressive that critics considered the system another form of slavery. Later in the twentieth century several million South Asians moved to Britain, establishing growing communities in most industrial cities, emigrated to North America and Western Europe, or became merchants, service workers, and laborers in the Persian Gulf states.

Overseas Indian Communities

The resulting diaspora made Indians a recognizable group in countries around the world. Indian trade networks reach around the Indian Ocean and Pacific Rim, connecting the seaport of Aden in Yemen, Tanzania, Malagasy, and South Africa to Hong Kong, Japan, California, and British Columbia. The diaspora is reflected today in “little Indias” from Nairobi (Kenya) to Singapore to Trinidad. The great Indian nationalist leader Mohandas Gandhi (1869–1948) experimented with nonviolent resistance to oppressive power while working with the large Indian community around Durban, South Africa.

Today people of Indian ancestry account for a majority of the population in Mauritius, at least half the population of Trinidad, Guyana, Surinam, and Fiji, a fifth of the population of Sri Lanka, a tenth in Malaysia and Singapore, and 5 percent in Kenya and South Africa. They number some 1.5 million in Great Britain, around a million in the United States and Canada, and some 2 million in the Middle East. Sizeable South Asian populations, mostly involved

in commerce, also exist in several dozen African nations, most of Southeast Asia and Western Europe, many Caribbean islands, Australia, and New Zealand.

Indian experiences in the diaspora have varied. Some in Southeast Asia, Fiji, and the Caribbean have done well in business or the professions, while large numbers still labor on plantations, although often in conditions somewhat better than during colonial times. The majority in North America have become prosperous businessmen and professionals. Indian entrepreneurs and scientists are leaders in the high-technology sector. Indians in the United States enjoy the highest educational levels of all ethnic groups. In Great Britain many have achieved wealth as entrepreneurs and professionals, and others prosper as small shopkeepers. But some South Asians encounter discrimination and hostility in Great Britain and other Western nations.

Like the Chinese, overseas Indians have faced many challenges that have shaped their adaptation. Indians have been involved in bitter struggles for political power with the descendants of Africans in Guyana, Surinam, and Trinidad, and with Melanesian Fijians in Fiji. In these nations, Indians formed their own political parties, which have sometimes won elections and installed their leaders as prime ministers. But the ethnic rivalries have sometimes led to conflict, especially in Fiji. In Sri Lanka, some of the large Tamil minority have sought autonomy and more rights through violence, fomenting a civil war that has kept the nation in turmoil for several decades. Hostility against the Indian trading community contributed to their expulsion from Uganda in the 1970s; many of those expelled moved to Britain or North America. Indians have faced economic restrictions in Kenya and Tanzania.

Most Indians have adapted to the political and economic realities of their new countries, taking local citizenship and establishing permanent roots. Some have abandoned the traditions of their ancestors, but most remain conservative in culture. While caste identities and restrictions have often faded in the diaspora, most overseas Indians maintain their



Large overseas communities of Indians have sprung up in Africa, Europe, the United States, and other Asian countries; pictured here is the main street in one such neighborhood in Chicago, Illinois.

customs and religions, generally marrying within their own groups. Those who have emigrated more recently have forged a continuing connection to their families and ancestral villages in India, fostering the movement of peoples back and forth.

Japanese and Korean Emigration

Generally pushed by poverty, overpopulation, war, or repression, many people emigrated from northeastern Asia, forming cohesive communities in new lands. Many Japanese left their islands between 1850 and 1940. Some settled in Hawaii, many to work on plantations or in the canning industry. Today their descendants are the largest ethnic group in Hawaii. Other Japanese migrated to the Pacific Coast of the United States and Canada, some taking up farming in California. When the United States and Canada tightened their immigration restrictions on Japanese in 1907 and 1908, the emigrant flow turned to Latin America, especially Peru, Brazil, Paraguay, and Argentina. Many Japanese joined agricultural colonies or mining operations. Later the cultural networks they forged allowed many Japanese to leave wage labor for the ownership of businesses and farms. Leaving instability, Koreans also joined the flow overseas, especially to Hawaii between 1903 and 1905. During World War II many Japanese in the United States

and Canada were interned in concentration camps, often losing their property.

By the mid-twentieth century emigration from northeastern Asia flowed again to the Americas. Today some 1.5 million people of Japanese ancestry live in Latin America, and another million in the United States. Japanese-Americans have become one of the most affluent and well-educated ethnic groups. In a reverse migration, thousands of Brazilian-born Japanese have started moving back to the land of their ancestors. Korean migration to North America began in the 1960s on a large scale, many immigrant families opening grocery stores in large cities such as New York and Los Angeles. The new arrivals increased the total Korean-American population to some three hundred thousand.

Southeast Asian Emigration

Emigration from Southeast Asia has also been significant in the past 150 years, spurred by colonization, war, and political turbulence. Between 1875 and 1940 Indonesians, mostly Javanese, were recruited to work on plantations in nearby Malaya and North Borneo but also in Surinam and, on a smaller scale, the Pacific island of New Caledonia. Some fifty thousand Javanese today live in Surinam. During the early 1900s the French shifted a few thousand Vietnamese

to the South Pacific islands they controlled, mostly as plantation laborers. After the United States colonized the Philippines in 1902, Filipinos began migrating to Hawaii and the Pacific coast of the United States as laborers or farm workers. The migration has continued ever since. Today 2.5 million Filipinos live in the United States, many of them prosperous. Many Filipinos also work in the Persian Gulf, mostly in service industries.

The devastating wars in Vietnam, Laos, and Cambodia in the 1960s and 1970s generated another major migration, this time mainly of refugees. Between 1970 and 1985 over 2 million people fled those countries, mostly for the United States, Canada, Australia, or France, the former colonial power in that region. According to 2000 U.S. Census figures, the United States is home to approximately 1.3 million Vietnamese, 400,000 Laotians, and 200,000 Cambodians—as well as 150,000 Thai, 63,000 Indonesians, and 20,000 immigrants from Malaysia and Singapore. The Southeast Asians were part of a total Asian population of nearly 8 million in the United States, a thirty-fold increase since 1940.

The emigrant flow from East Asia, Southeast Asia, and South Asia to the Americas, Oceania, Europe, and the Middle East continues today, as people seek better economic opportunities, political stability, or personal security, continuing a human behavior—migration—that has a long history.

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See also Diasporas; Migrations—Overview

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Migration, Indo-European

Indo-European languages were spoken from the shores of the Atlantic to eastern India and the westernmost province of China even before the first centuries BCE; today more than half the people of the world speak languages that belong to that same family. But scholars have debated the origins and earliest migration patterns of Indo-European languages, and the possibility of whether they derived from a common homeland.

The majority of the peoples of Europe and a substantial portion of the present and ancient peoples of western Asia speak closely related languages that all belong to the Indo-European language family. European colonial expansions and the spread of Euro-American culture have been so successful that nearly half the population of the planet now speaks an Indo-European language. Yet the place where this language family originated and the course of its earliest migrations have been topics of heated and inconclusive debate for more than two centuries.

The Early Indo-Europeans

The Indo-European language family can be divided into thirteen groups that may be briefly summarized, moving broadly from west to east.

Celtic Languages

During the period from about 500 BCE to about 1 BCE the Celts occupied much of western and central Europe and undertook raids into Italy and as far east as Greece and Anatolia (present-day peninsular Turkey). Today the Celtic languages survive only on the

periphery of Atlantic Europe as Gaelic (both Irish and Scots), Welsh, and Breton.

Italic Languages

In ancient Italy, Latin was by far the most successful of a group of closely related languages. Latin became the sole language of the Italian peninsula sometime around 100 CE and was then carried by Roman expansions over much of Europe. The Italic branch survives today in the form of modern Romance languages of French, Spanish, Portuguese, Italian, and Romanian, among others such as Catalan and Provençal.

Germanic Languages

Speakers of these northern and central European languages, such as the Goths, expanded from the north during the first millennium CE to occupy lands previously held by the Celts and other groups. The modern Germanic languages include English, Dutch, German, and the Scandinavian languages.

Baltic Languages

The Balts once occupied a vast territory from the Baltic Sea across northern Russia, but the expansion of Germanic speakers from the west and Slavic speakers from the south has left only the two modern Baltic languages of Lithuanian and Latvian.

Slavic Languages

During the first millennium CE the Slavs began their historical expansions in central and southeastern Europe. The major Slavic languages include Russian, Belorussian, Ukrainian, Polish, Czech, Slovakian, Slovenian, Serbo-Croatian, Macedonian, and Bulgarian.

Balkan Languages

The Indo-European languages of the ancient Balkan region are very poorly attested in inscriptions and in place and personal names recorded in neighboring classical languages. The major groups were the Dacians and Thracians, occupying roughly the areas of the modern states of Romania and Bulgaria respectively, and the Illyrians in the west Balkan region. The only Balkan language that survives is Albanian, which many suggest may have derived from the earlier Illyrian language.

Greek

The language of the ancient Greeks is attested from at least the thirteenth century BCE in the Linear B inscriptions of Late Bronze Age Greece and Crete. During the first millennium BCE the Greeks undertook extensive programs of colonization that carried them as far as Spain in the west and to the northern shores of the Black Sea in the east.

Anatolian

By about 1900 BCE documents from Anatolia indicate the existence of Indo-Europeans speaking languages of the Anatolian branch. The most notable and best studied of the early languages is Hittite. Some Anatolian languages survived to the beginning of the first millennium CE, but all are now long extinct.

Phrygian

With the collapse of Hittite power (c. 1380 BCE), the Phrygians established themselves in central Anatolia, and their language, attested almost entirely in inscriptions, survived into the first millennium CE.

Armenian

The Armenian language emerged in eastern Anatolia during the first millennium BCE after the collapse of earlier non-Indo-European states such as those of the Hurrians and the related Urartians. Although much of its vocabulary has been borrowed from its neighbors, Armenian still has a core vocabulary inherited directly from its Indo-European ancestors.

Iranian

The Iranian languages formed a vast chain of speakers from 700 BCE onwards that extended from the Scythians on the Black Sea to the Saka in western China. Most Central Asian languages (Bactrian, for example) are from the Iranian language family. The most abundant evidence of the presence of speakers of Iranian languages derives from ancient Persia (Persian), and Iranian languages predominate in modern Iran and Afghanistan.

Indo-Aryan

Closely related to Iranian is Indo-Aryan, the vast language group of the northern two-thirds of India from which many of the modern Indic languages, such as Hindi, Urdu, and Gujarati, derive. This group is abundantly attested in Sanskrit literature, which emerges by at least the end of the second millennium BCE. India also includes two non-Indo-European language families, Dravidian and Munda.

Tocharian

Extreme outliers, the two Tocharian languages were spoken in oasis towns along the Silk Roads in present-day Xinjiang, the westernmost province of China. They became extinct by about 1000 CE.

Europe also houses several non-Indo-European families. These include Basque, spoken in northern Spain and southern France, and the Uralic languages, which occupy a broad area of Europe's northeastern forest zone. Among the more notable modern Uralic languages are Finnish, Saami (Lapp), Estonian, and Hungarian.

The Proto-Indo-Europeans

Membership in a language family presupposes an ancestral language spoken somewhere at some time in the past that expanded to such an extent that its speakers came to speak regional variants that grew increasingly different from one another, though those variants were still related. The fragmentation of the late Latin of the Roman Empire into a series

of increasingly different Romance languages is a familiar example of how one language diverges into a number of different languages. A comparison of the grammars and vocabularies of the various Indo-European languages provides the evidence that they were once genetically related; that is, that they all derive from a common source. For example, the words *mother*, *father*, *brother*, and *sister* are rendered in Latin as *mater*, *pater*, *frater*, and *soror*; in Greek as *mētēr*, *pater*, *phrēter*, and *éor*; and in Sanskrit as *mātár*, *pítár*, *bhā́tar*, and *svásar*.

These correspondences reflect the fact that there was once a common language, which we term Proto-Indo-European, from which all of the daughter languages are derived. A comparison of the common vocabulary of the Indo-European languages permits linguists to reconstruct something on the order of 1,200–1,800 items of Proto-Indo-European vocabulary. (There were obviously many more words in the proto-language but we can only securely reconstruct a portion of these.)

The reconstructed Proto-Indo-European vocabulary provides all the semantic classes of words that we would find in any language, including parts of the body, verbal actions, pronouns, and numerals, for example. Of greatest cultural interest are those words pertaining to the natural world and to the economy, material culture, kinship, social structure, and religious beliefs of the Proto-Indo-Europeans. We know that the speakers of Proto-Indo-European had domestic animals (linguists have reconstructed Proto-Indo-European words for *cattle*, *sheep*, *goat*, *pig*, and *dog*; Proto-Indo-Europeans also knew the horse, but whether wild or domesticated is hotly disputed). They engaged in cereal agriculture (there are Proto-Indo-European words for *grain*, *barley*, *yoke*, *plow*, *harvest*, *winnow*, and *grinding stone*); stored and cooked their food in ceramic vessels; hunted and fought with the knife, spear, and bow; had some acquaintance with metals (there are words for *copper*, *gold*, and *silver*); and utilized wheeled transport (*wheel*, *wagon*, *pole*). In addition we can recover the names of at least some of the wild plants and animals known to the Proto-Indo-European speakers. In general, the arboreal evidence suggests a temperate climate (tree

words include Proto-Indo-European equivalents of *oak*, *birch*, *willow*, and *ash*) and forest and riverine animals (judging from words for *bear*, *wolf*, *fox*, *red deer*, *otter*, and *beaver*).

In general, linguists have estimated that Proto-Indo-European was spoken from about 4000 to about 2500 BCE, but this is largely an informed guess. Nevertheless, those dates do broadly conform with the dates indicated by analysis of their vocabulary for material culture, as such items as wheeled vehicles do not appear anywhere in the world before approximately 4000 BCE.

The Homeland Problem

For two centuries linguists and archaeologists have sought to determine the location or homeland of the Proto-Indo-Europeans and their subsequent migrations. In a vast literature that comprises both the brightest and the weirdest of would-be scholarship, the homeland has been located in space anywhere from the North Pole to the South Pole and from the Atlantic to the Pacific; in time the Proto-Indo-Europeans have been sought from the time of the Neanderthals (before 100,000 BCE) until the spread of use of the chariot (after 2000 BCE). The (Proto-)Indo-Europeans have been presented as everything from the bringers of a high culture who civilized Europe to the destroyers of European (proto)civilization; from peaceful farmers to warlike barbarian horsemen, depending on how scholars, sometimes acting under various national or ideological agendas, choose to interpret the limited data.

The difficulty of the whole enterprise, from a scholarly perspective, rests with the nature of searching for prehistoric linguistic entities: while the object being sought is strictly linguistic—a protolanguage—there is no purely linguistic technique that yields a convincing solution. That is not to say that there is not an arsenal of techniques that have been employed, but they just do not give convincing results when applied to the world's largest language family. One technique, for example, applies the notion of the “center of gravity” in the search for a language family's place of origin. The logic is that where we find the

Language shapes the way we think, and determines what we can think about. • **Benjamin Lee Whorf (1897–1941)**

greatest amount of differentiation (in other words, the greatest concentration of different languages, dialects, and so forth) is where the place of origin should lie, because it is in that area that the language family has existed longest and had the greatest amount of time to change. While languages invariably change over time, time is not the only factor of linguistic change. Topography, social structure, and contact with various foreign substrates, which are more diverse and inclusive than any single language, are also likely to influence language divergence.

Recognizing this, some linguists have sought to locate the homeland where they either find the greatest amount of conservation of the Proto-Indo-European vocabulary (presuming preservation to indicate the absence of foreign substrates and therefore the least movement from the homeland) or the least evidence for non-Indo-European loanwords. But neither of these techniques is satisfying. Because the various Indo-European languages have been attested at widely different times (with Sanskrit attested earlier than 1000 BCE and evidence for Lithuanian appearing two and a half thousand years later), it is hard to know how one can make a fair test of which has the most archaic vocabulary or the greatest number of loanwords. In fact, every Indo-European language possesses a sizeable vocabulary that cannot be demonstrated to derive from Proto-Indo-European. There is no evidence that any Indo-European language has sat in blissful purity over the past four or five thousand years. A measure of the inadequacy of these purely linguistic methods can be seen in the fact that the center-of-gravity principle has generally favored southeastern Europe (Greece and the Balkans) as the homeland, while the conservation principle has been adduced most often to support a homeland in either India or on the shores of the Baltic Sea (because of the conservative nature of Lithuanian).

Models

No matter where one places the homeland, there is an expectation that its location should at least be congruent with the evidence of the archaeological

record; that is, there should be some form of concrete evidence of the expansion of a language. A homeland at the North Pole obviously fails the test because there was no one there to speak any language. Other solutions have localized the Proto-Indo-Europeans in regions where there is simply no archaeological evidence that might suggest a movement consistent with the historical distribution of the Indo-Europeans, such as Scandinavia and the Baltic region, Britain and Ireland, the Iberian Peninsula, Italy, Iran, India, and Xinjiang. All of these areas are not only peripheral to the overall distribution of Indo-European groups, they also lack any evidence whatsoever for a major out-migration that might be equated with Indo-European expansions.

It is all the more ironic, then, that although the arrival of each Indo-European group in its historical seat (the Celts in Ireland, Latin speakers in Italy, Indo-Aryans in India) might appear to be a good starting place for backtracking to the Indo-European homeland, no dates for any of those arrivals have yet been determined. Instead, archaeologists are confronted with a series of windows of possible intrusions that may span up to four thousand years, as every new horizon of ceramic type, tools, or burial is (generally unconvincingly) associated with a potential invasion of Indo-European speakers. There is simply no region where there is an archaeological smoking gun—evidence for an invasion so massive that it must be associated with the arrival of the Indo-Europeans. The appearance of the Celts in Ireland has been set at anytime between 4000 and 250 BCE, while the evidence for the arrival of the Indo-Aryans in India is so ambiguous that many Indian scholars have argued that the Indo-Europeans have always been there (though these scholars do not explain how they could have spread elsewhere from India). A retrospective approach to Indo-European migrations (that is, one that starts from current locations and tries to wind the clock backwards) throws up too many dead ends; in the current state of play most prefer to start with a proposed homeland and trace putative out-migrations. There are two popular models for Indo-European origins that differ with respect to location, time, and means of expansion.



The Neolithic Model

Some associate the expansion of the Indo-Europeans with the spread of agriculture, a mechanism of language spread that has also been argued for the dispersal of other major language families, including Austronesian, Sino-Tibetan, Afroasiatic, and the Bantu languages. Farming entered Europe from Anatolia about 7000 BCE and passed through Greece and the Balkans both to the north and west across Europe, arriving at the Atlantic and Baltic by about 4000 BCE. This model supports the notion of demic diffusion, that is, the massive although gradual movement of people with a more productive economy into areas earlier occupied by people with a less productive economy (namely, hunter-gatherers), whom the newcomers absorb culturally and linguistically. Some argue that enormous language families can only be explained by such massive cultural change. The process is seen to have taken many generations and the emphasis, at least for southeastern and central Europe, has been on population replacement, generally by peaceful farmers. The attraction of this model is that it introduces a very powerful mechanism to explain how a language family could spread over such a vast area and extinguish all previous languages.

But the model also has its critics. Many do not believe population movement is responsible for the arrival of agriculture in northern and western Europe; they postulate a process of acculturation, the local hunter-gatherers adopting agriculture from their neighbors, and so the mechanism for language dispersal is not so compelling for the periphery of Europe. And when it comes to explaining the Indo-Europeans of Asia (who occupied an area at least equal to that of Europe), the earlier presence of agriculture there, which appears to be unassociated with the origins of agriculture in Anatolia, forces the proponents of the Neolithic hypothesis to abandon their demic model and adopt a segment of the second model: Bronze Age migrations (around 2000 BCE) of horse-using warriors from the steppe lands of Eurasia. The Neolithic model also seems to require migrations that are still several thousand years earlier than the

most recent technological items associated with the Proto-Indo-European vocabulary; in other words, it places Indo-Europeans in Greece and Italy several thousand years before archaeologists believe that they could have become acquainted with either the horse or wheeled vehicles, items that are reconstructed to Proto-Indo-European and whose names are inherited in the vocabularies of these regions. Finally, the suggested path of Neolithic expansions in Europe does not correlate very well with the linguistic relationships between the different Indo-European groups.

The Steppe Model

The second model suggests that the Indo-Europeans originated in the steppe and forest-steppe of eastern Europe (south Russia and the Ukraine). Proponents of this model argue that expansions began about 4500 BCE and continued in a series of waves both west into Europe and east into Asia. The farmers of the Neolithic model are here regarded as non-Indo-Europeans who occupied much of Europe *before* the expansion of the Indo-European languages. Rather than population replacement, the steppe model requires massive language shift among the indigenous population brought about by a minority of intrusive Indo-Europeans whose possession of the domesticated horse and ox-drawn wagon provided far greater mobility, and whose economy (pastoralism, with some agriculture) and social system were far more aggressive than those of the farmers of Europe. The mechanism for language shift lies here in either the political dominance of the intrusive Indo-European elites or the spread of Indo-European social institutions, which the local populations adopted along with the language associated with the new order. The key here—as with the spread of any language—is establishing what causes people to become initially bilingual and then to abandon their native language. Once the process was initiated, with minimal population movement the Indo-European languages could have spread from one region to another, arriving in the north and west of Europe by around 3000 BCE or more recently. The steppe model explains the Indo-

Europeans of Asia as further expansions of Bronze Age mobile warriors. The problem with the steppe model is that while evidence for migration can be found from the steppe lands into the lower Danube region, especially in characteristic burials under a mound (in Russian *kurgan*; the term gives the model its alternative name, Kurgan model), it is much more difficult to trace such movements beyond Hungary and the Balkans. Similarly, while there is clear evidence of expansions from Europe into the Asiatic steppe and partially into Central Asia, there is minimal evidence of any migrations further south into what would become the major civilizations of ancient Iran and India. Moreover, the presence in an area of many of the alleged traits of the steppe expansions, such as greater mobility, increased weaponry, and development of status burial, has been attributed to internal social processes rather than the impact of intruding Indo-Europeans.

The problem of Indo-European origins and migrations has been a major challenge to prehistorians, and the failure to develop a single fully convincing model is a salutary caution to anyone interested in tracing the path of migrations in the archaeological record. If increased doubt is the result of the type of intense discussion that tracing the roots of the Indo-Europeans has occasioned, then this does not bode well for many other hypothesized migrations that have seen far less scrutiny.

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See also Language, Classification of

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Military Engineering

Military engineering is concerned with the design, construction, and operation of offensive, defensive, and logistical structures in the course of warfare. These structures include forts and barricades, bridges, and trenches. An engineer's job might be to design and construct such objects, or to find a way to demolish them. Military engineers have been important participants in armed conflict from antiquity to the present.

Military engineering involves both construction and destruction. It is concerned with aiding troops to move about the battlefield, destroying enemy fieldworks, denying areas to the enemy, and providing defense works of substance. The military engineer has grown in importance through the ages, but has always been an important part of any army that was more than a mob of marauders.

Early Military Engineering

The Romans were among the first to make use of purposely deployed military engineers. One of the most impressive feats of military engineering in antiquity was Julius Caesar's bridge across the Rhine River. Roman engineers constructed a bridge spanning the Rhine at Koblenz, Germany, where the river is 366 meters wide and varies in depth from about 2 to 8 meters. It is reported that the bridge was completed in only ten days from the start. The achievement was remarkable.

Modern readers, however, should not be astonished that such feats were possible, and in such a short time. Military engineering was, even in antiquity, highly sophisticated. The ancient world had a great deal of

experience in building with wood and stone, as is witnessed by the survival of the pyramids and Roman buildings throughout Europe. Ancient sites in the Middle East and the Far East, and in Central and South America, prove quite conclusively that these ancient builders not only knew how to build, but they also knew how to make things last.

The Great Wall of China remains a monument to military engineering. Designed to protect the northern borders of China from marauding invaders, the earth and stone wall was built, rebuilt, and maintained by successive dynasties beginning more than two millennia ago. Similar elaborate structures, such as the Aztec causeway system or the Inca's network of roads, might not have been built exclusively for military purposes, but they did prove useful when those civilizations or empires came under attack. The use of timber for defensive walls is reported throughout antiquity, and military engineers soon learned to build them strong enough to deter all but the most professional armies; naturally, anything that can be built can be knocked down, and opposing military engineers soon developed methods of firing wooden walls to create access points for assaulting troops. Artillery of course was an additional source of destructive power, and was used to create holes in defenses.

The Assyrians were masters of the art of fortification, which was known in the Middle East even before 1000 BCE, but they were also good at knocking things down. They developed siege towers and battering rams. The siege towers dominated enemy walls, allowing troops to climb the defenses and get in; battering rams simply knocked holes in gates or walls, for the same purpose. The Japanese also built and relied on an extensive system of fortresses

of wood and stone; with many of the well-known castles of the sixteenth century evolving from wooden structures of earlier centuries. Ancient and medieval armies sometimes fought in the field, but they often confronted each other when one side was firmly ensconced within the defensive walls of a city or a castle. Caesar at Alesia (now known as Alise-Ste-Reine, near the source of the Seine River in France) used military engineering to great effect: he built an inner defensive wall around the defended town to keep the Alesians in, and then built another defensive wall around his troops, to keep any relieving force out. All construction was of wood, and the resulting walls were models of effectiveness that even today stand as examples of how to construct defensive walls.

Sieges created work opportunities for two groups of specialist troops. Artillerymen pounded the walls and defenses with their artillery (both early tension- and gravity-powered artillery and later guns) and engineers were employed within to construct and maintain the defenses, and outside to destroy them. Tunneling and mining became part of military engineering, and tunnels would be dug beneath towers with the tunnel supported by massive timbers to prevent cave-ins. Once complete the tunnel was then filled with timber and fired. The resulting failure of the previously installed supporting timbers would often bring the defensive work down, and examples of the results can be seen today in many European castles.

Even on the plains military engineering had an important part to play in open combat. It is thought that people took to riding horseback in Eurasia possibly as early as 4000 BCE. Just when horses were harnessed for war is unclear, but is thought that at least four to five thousand years ago horsepower was used to devastating effect against foot soldiers by coupling horses to two-wheeled chariots armed with a driver and a bowman or swordsman. Particularly important in terms of military engineering was the development of spoke-wheeled chariots around 2000 BCE.

Another particularly significant development in the evolution of military engineering was the gunpowder



Roman fortifications at Segontium, Wales, date from the second century CE. Photo by Chris Howell.

revolution (from around the thirteenth century on); both in respect to harnessing the explosive power of gunpowder and in terms of defending against it.

Trenches and Bridges

Another aspect of military engineering was the construction of trenches, or saps. To approach a well-defended town or castle assaulting troops needed cover, often already cleared away by the defenders. So trenches were dug, which got nearer and nearer to the target until the walls and defenses were within arrow or artillery range. Naturally the walls still needed breaching before troops could get in, but the engineers had that problem solved once they could get up to the foot of the walls.

River crossing has already been mentioned; it is important to move troops freely across the battlefield, and when maneuvering they must be able to get across rivers. Bridging works to supplement existing bridges, or to replace them if they have been destroyed, is an important task for the military engineer today as well as yesterday. Speed is of the essence, for a quickly built crossing can often gain time and provide the element of surprise always needed by attacking forces, and even by a retreating force. The importance of the Rhine bridges during World War II are a case in point: with the bridges intact the Allies could advance



quickly; without them they had the task of building new bridges under fire.

The Russians developed a bridging technique that confounded the Germans. Often Russian armor and vehicles were known to have crossed a river where there was no known bridge. Careful observation finally provided the answer: the Russians were building, under cover of darkness, bridges that were six inches under the water. This allowed them to move their tanks across the rivers to the complete surprise of the Germans. Engineers can come up with surprising solutions on occasions.

Vauban's Fortifications

Military defensive engineering was of particular importance once firearms and guns appeared on the battlefield. The French were masters of the defensive art, and Sébastien Le Prestre, Marshal Vauban (1633–1707), was the master of the art of siege-craft and fortification. Sieges had been part of military activity from the first moment that humans built walls and watchtowers, but Vauban made a science of what previously had been an art. In the attack the Vauban system prescribed an approach to the defenses by means of a series of trenches, first to bring the siege artillery within range, and then to get the infantry, archers, and engineers close to the base of the walls. The engineers then prepared fascines (bundles of wood) to fill in ditches and moats, and assault towers or mines to overcome the defenses of the outer walls. Often a further siege was necessary when the defenders had secondary defenses within the main walls.

Vauban also found time to create a system of defense: this was based on walls that were angled so that artillery shot and shells would have the least effect, as well as wide wall bases and countermining to defeat the enemy miners. As defense against attacking infantry Vauban's walls were pierced with firing loopholes (slots cut through the walls that were narrow on the outside, but wide enough on the inside to allow the firer room to move and use his weapon), and traps were built into which attacking infantry would be forced, after which they would be fired on

by cannon emplaced within the secondary walls of the defenses.

World War I

During World War I men disappeared into trenches after the first few months and then spent over three years fruitlessly trying to prove that the machine gun, artillery, and barbed wire could not stop a determined attack.

The infantry of the time were well trained in digging, as infantry have been since time began, but they were transformed into military engineers when the movement stopped. The Germans had outrun their supply lines, and both sides were exhausted by the early fighting and the punishing marches they were forced to undertake. The defenders, essentially the French and the British, had their backs to the wall when they decided to dig in to make a last stand before Paris. The Germans dug in as well, to try to get some rest before the final push. And that is how things stood for nearly four years.

Trench systems were of unbelievable complexity. There were three parallel lines of trenches (very similar to Vauban's system) with communication trenches running between them. In the front line, however, where shelling was most frequent, the trenches were often knee deep in water and mud, and in perpetual need of work to shore up cave-ins. British and French trenches were built in a less permanent way than those of the Germans, because the French and British were always planning to advance from their positions. The Germans were more methodical, and built much deeper, better underground living quarters, which were meant to be shell proof.

World War I was an example of siege-craft fought with more modern weapons. Rifle fire was far less effective than machine-gun and artillery fire, and the defender always had the advantage until tactics changed in the spring of 1918. Even the much vaunted tanks were incapable of making the necessary breakthrough because the engineers could not fill every shell hole in the battlefield, nor make every remaining bridge capable of supporting a tank.

Every gun that is made, every warship launched, every rocket fired, signifies in the final sense a theft from those who hunger and are not fed, those who are cold and are not clothed. • **Dwight D. Eisenhower (1890–1969)**

World War II

World War II saw military engineering develop its repertoire still further, and many of the techniques of that war still work today, albeit with even more sophisticated equipment. There were concrete bunkers to be built (the French Maginot Line and the German West Wall being two enormously expensive and extensive static defense systems), and the means to defeat them to be considered. There were portable bridges to be designed, which could be quickly erected across waterways where bridges had been destroyed (the British Bailey bridge is the prime example of this). Engineers also started to become specialist assault troops: the Germans included *pioniere* (or field engineers) in their frontline troops, and the record of their achievements includes many assaults on Vauban-style forts, which were reduced by means of demolition charges and flamethrowers. In World War I the Vauban forts withstood months of shelling, as shown by the battle of Verdun.

An early example of specialist engineer operations in World War II was the German glider-borne attack on the Belgian fort at Eben Emael, which obstructed the planned German advance across Belgium when the invasion of the West began on 10 May 1940. Landing on the roof of the fort, the German engineers disabled all the gun emplacements with shaped charges that had good concrete-defeating power.

Engineers were employed on every front in World War II, including in the Pacific War against the Japanese, where specialist engineering equipment, such as bulldozers, was often needed to supplement flamethrowers and demolition charges to defeat the defending bunker or “foxhole” positions. Throughout the war engineers both destroyed obstacles and built them, and they also built many airfields right behind the front lines.

More specialist engineering equipment was designed and used on D-Day, 6 June 1944, when Allied forces under General Dwight D. Eisenhower landed on the Normandy beaches to start the western push on Germany. Swimming tanks, anti-bunker tanks, and flamethrower tanks all arrived on the beachhead

at the same time as the infantry, and they were fundamental in enabling the British and Canadian forces to get through the first line of defenses and start inland. Surprisingly, the majority of this equipment was, although offered, not taken up by the American forces, who suffered their absence to some extent.

The Present Day

Military engineering is a special form of soldiering, and a fundamentally important one. Infantry cannot carry the engineering equipment needed to perform the tasks of the engineer, nor are they trained to do so. Modern engineer units are fully mobile, often carried in armored personnel carriers together with their specialist equipment. Field engineers today have enormous horsepower at their command, from tree-cutting power saws to fully tracked bulldozers and mine-clearing tanks. They can still both build things and blow them up, but far fewer people can now do the same job that took thousands to do only sixty years ago.

One task for which engineers receive little notice but that demands the admiration and respect of all is clearing booby-traps and mines. In conflicts in Africa, Bosnia, Afghanistan, Iraq, and many other areas of the world undetectable plastic, wood, or cardboard antipersonnel mines were strewn about the countryside with no regard for the future. These mines are now maiming and killing thousands of innocents, and it is the field engineers who are doing the slow and extremely dangerous job of clearing these areas. As in other arenas of military engineering, there is a good chance that it was military engineers who designed these mines.

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See also Military Strategy and Tactics

Further Reading

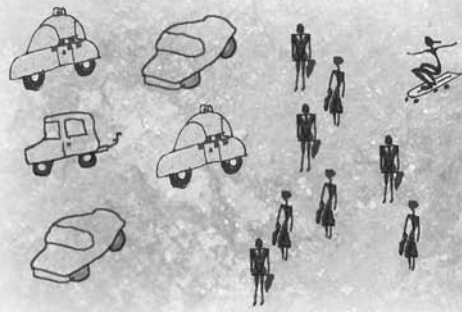
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Military Strategy and Tactics

Military strategy refers to the means by which states and other organized groups use force or the threat of force to obtain their objectives. Strategy tends to be broader in perspective than military tactics. Tactics involve the management and maneuver of military units in relation to each other, the enemy, and the terrain, all with the aim of achieving victory in battle.

Strategy and tactics are broadly defined terms that distinguish two levels or aspects of the techniques for applying power, in all of its forms, to resolve conflict. The application of power to secure a desired outcome in direct or imminent contact with an opposing force is the realm of tactics. Strategy is the application of power to obtain a desired outcome from beyond direct contact with an opposing force, and may well involve the decision to resort to direct contact with a foe at the tactical level. While the two concepts are opposite poles on a continuum rather than truly distinct approaches, they have proven useful in understanding many forms of conflict. But strategy and tactics emerged most directly from, and are understood primarily as, concepts for managing political and military struggle.

Ancient Origins

One of the earliest known students of strategy is still widely studied today. Scholars continue to debate when Sunzi (Sun-tzu) wrote *Military Strategy*, more widely known in the West as *The Art of War*, and the exact identity of that Chinese strategist. Whether written by the historical Sun Wu around 512 BCE or by an otherwise unknown author three centuries

later, the first great theoretical work on strategy benefited from centuries of Chinese experience and drew upon historical examples to support its conclusions. According to Sunzi, military force was but one component of a government's power. Once a ruler decided to resort to using that force he was wise to identify a desired outcome and leave pursuit of it to professional military leaders. These dual recognitions, that warfare is but one aspect of political power and that the application of military power calls for special expertise in addition to the actual skills of combat, have been shared by most complex human societies.

Sunzi contended that the decision to go to war was one of the most serious that a leader could face, and that the conduct of warfare required careful planning. The goal of warfare was forcing the enemy into submission, preferably without resorting to actual combat. Diplomacy, negation of the enemy's own efforts, limiting destruction and risk, and achieving maximum results at minimal cost were all aspects of strategy that both political and military leaders had to keep in mind. Deception, espionage, military preparedness, and combat effectiveness were among the components of strategy that could ultimately be used to maneuver an army into a position of such tactical advantage that any actual combat would be swift and one-sided. The mere threat of such an inevitable defeat could force an enemy into obedience, the height of strategic skill.

When strategy places opposing forces into proximity and both sides remain committed to conflict, tactics come into play. Despite their consistent focus on securing victory over an unwilling foe through the direct application of force, the specifics of tactics varied, and continue to vary, widely with the cultures,



Fourteenth-century Chinese cannon. The invention of gunpowder by the Chinese and its use in munitions changed military strategy and tactics. Photo by Chris Howell.

technologies, and strategic situations involved. Tribal cultures might rely upon individual combat and improvisation, while more complex societies gradually developed a collective approach to formalized combat procedures. That contrast is vividly depicted in Greek literature, where the battles of Homer's *Iliad*, set in the Trojan War (c. 1000 BCE), are fought as a series of loosely coordinated individual combats quite different from the disciplined group methods and maneuvering armies of the Persian Wars (490–479 BCE) that Herodotus describes in *The Histories*. The armies of the Roman Empire, with their mixtures of infantry, cavalry, primitive artillery, and other specialized troops, carried this trend to an extreme in the ancient world. Flavius Vegetius Renatus (c. 375 CE) describes the complex tactics of the Roman legions through a series of military maxims in Book

3 of *De re militari*, a work that continues to interest students of the military arts.

Eurocentrism

Cursory examinations of the development of strategy and tactics after the end of the first millennium CE often focus on the West or employ Western concepts, leaving military scholars of all cultures potentially vulnerable to charges of Eurocentrism. The rest of the world certainly continued to advance the development of strategy and tactics after 1000 CE. Miyamoto Mushashi (1584–1645), for example, described the sword-fighting techniques of Japan's samurai in the *Book of Five Rings*. The lessons he provides through the tactics of sword fighting extend into both strategy and Zen philosophy, and are often discussed in the context of modern business techniques. But the developments in Europe during the second millennium CE that expanded its political, diplomatic, and military activities to the global scale also established the dominant conceptions of strategy and tactics.

One explanation for that fact lies in the origins of the Western nation-state, the social and political entity that came to dominate European, and eventually global, affairs by the end of the second millennium. The emergence and growth of nation-states following the Peace of Westphalia of 1648 largely depended upon their ability to muster military, diplomatic, and economic power under a central authority in the face of both internal and external opposition and or threats. As a result of that struggle European approaches to strategy and tactics became increasingly sophisticated. The same pressures, together with complex social changes, promoted the growth of military and civilian technology in a synergistic process that drove the continuous development of new approaches to managing conflict.

As Europe's dynastic struggles transformed into state contests its armies gradually abandoned their feudal structures to become professional organizations equipped with cannon and firearms. This development led to an age of relatively limited warfare



Utagawa Kokunimasa, *Our Army's Great Victory at P'yongyang Castle* (1894). Japanese officers look at maps and review the progress of battle taking place outside the fortress at P'yongyang. Library of Congress.

in the seventeenth and eighteenth centuries as enormously expensive professional armies adopted rigid tactical systems and a strategy based upon position and maneuver rather than direct engagement. The resulting wars in Europe unwittingly resembled the strategies promoted by Sunzi in China two thousand years earlier, as military and political leaders struggled to win armed contests with minimal loss of life and treasure. The works of the great French military engineer Sébastien Le Prestre, Marshal Vauban (1633–1707) exemplify the era.

Vauban designed an elaborate system of elegantly engineered fortifications to defend France, providing the setting for ponderous wars of maneuver in which tactics became mechanical exercises. Highly disciplined soldiers moved in prescribed patterns even under hostile fire. Military campaigns focused upon the conquest of key locations rather than the subjugation or destruction of the enemy and so became works of logistics and engineering little different from their fortified targets. Recently developed sailing warships equipped with heavy cannon began engaging in elaborately scripted maneuvers, codified in England by the Fighting Instructions of 1691, which limited both the risks and effectiveness of naval engagements as they restricted tactical options.

Many of the limitations of Europe's tactics and strategies were imposed by the technology of the period, but those limitations did not prevent European nations from successfully applying the power and discipline of their armed forces against less technologically advanced opponents as the West expanded its influence in other regions. The very effectiveness of European arms and techniques, including the political organization of the state, promoted their eventual adoption or assimilation by colonial subjects and opponents alike in forms adapted to local requirements.

At the same time, European expansion inevitably led to resistance, and in most cases that resistance came from small outnumbered and outgunned fighters who could not hope to confront the state on its own terms, hence they took to guerrilla tactics. Guerrilla warfare is an irregular or asymmetrical form of warfare whereby combatants rely on highly mobile hit and run military tactics in the form of ambushes and raids on larger and better equipped but mobile formal armies. In turn, guerrilla warfare is countered with counter-insurgency techniques and warfare. This is a form of warfare and counter warfare that has been employed anywhere that there is an asymmetry between the opposing combatants.

In response to such tactics, Europeans, and others, have also learned from the successes and failures that resulted from applying their codified manuals of arms and tactical systems against the warriors of other cultures, increasing the breadth of their formal study of strategy and tactics.

The advent of truly national wars in the wake of the French Revolution expanded the scope of European strategy and restored fluidity to tactical systems on both land and sea, largely due to the influence of France's Napoleon Bonaparte (1769–1821) and Britain's Horatio Nelson (1758–1805). Industrialization expanded the lethality of the armies and navies employing the new techniques it promoted, and armed forces around the globe struggled to adapt to the rapid changes in warfare. When the American Alfred Thayer Mahan (1840–1914) began constructing a theory of maritime power based upon the British experience Japan became one of the first nations to construct a navy accordingly, indicative of the growing dominance of Western approaches to strategy and tactics. But the twentieth century caught all nations unprepared.

Twentieth Century

Indicators of the horrific potential of industrialized total warfare in the nineteenth and early twentieth centuries went largely unheeded, and the devastation of World War I (1914–1918) shocked the world when increases in weapons effectiveness and logistical capabilities left the nations of western Europe without effective offensive tactics. Efforts to break the resulting stalemate on the Western Front accelerated the development of weapons such as the airplane, tank, submarine, and poison gas. The war's aftermath produced a series of arms control agreements and the League of Nations, as world leaders sought to expand diplomatic options and place limits upon military capabilities. But the same period expanded the new concepts of strategic bombing and unrestricted submarine warfare, designed to destroy an enemy's will and ability to resist by targeting its

civilian population, and the mobile, combined-arms warfare that would be implemented by the Germans. Wars had become so complex that a level between the strategic and tactical, the operational, gradually began to enter the military lexicon. The operational level of conflict pursues goals and approaches defined by strategy by orchestrating the elements of power to obtain tactical success, linking the extremes of the strategic–tactical continuum.

World War II (1939–1945) demonstrated this continuum as nations pursued both individual and collective strategies, materialized in operations throughout the world that produced innumerable engagements at the tactical level. As a total war for all involved, every aspect of national power became a tool of strategy that could be harnessed. That concept of national power continued to define many countries' approach to the Cold War (1945–1991) that followed.

The introduction of nuclear weapons, combined with the growing range and accuracy of missiles, particularly intercontinental missiles, brought a new potential to warfare, and the strategies that nuclear powers developed grew out of the doctrines of strategic bombing. Deterrence through mutually assured destruction became a stated goal of some national policies. Some nations developed nuclear weapons for tactical use, but the immense destructive power of fission, and later fusion, bombs and the difficulty in distinguishing between their tactical and strategic roles has prevented their tactical employment thus far, save for in Japan at the close of World War II. The threat of escalating from conventional non-nuclear to tactical, and then strategic, nuclear warfare played a large part in restricting the Cold War between the coalitions led by the Soviet Union and the United States to indirect military action and other forms of conflict.

Twenty-First Century Outlook

The twenty-first century is presenting notable challenges to the predominant strategic and tactical

Float like a butterfly, sting like a bee. • Muhammad Ali (b. 1942)

systems that emerged out of the Western tradition, with their emphasis on state actors, professional militaries, and distinctions between legitimate and illegitimate targets. The end of the Cold War is producing a multipolar world dominated by the split between the beneficiaries and opponents of economic globalization, and tactics and strategies, such as guerrilla warfare, long relegated to the periphery of military and diplomatic conflict are becoming more prominent. It should not be surprising that many of the techniques weak groups are choosing to use in conflicts against the powerful are regarded by their targets as criminal or uncivilized behavior. They are the strategies and tactics that criminals, rebels, and other weak groups have traditionally used to force behavior upon or secure an outcome from a stronger foe.

The resulting struggles between the strong and the weak are defined as asymmetrical warfare. While the use of terror and intimidation, indiscriminate destruction, kidnapping, and suicide attacks are all ancient tactical and strategic options, they pose a serious challenge to security forces and diplomatic systems developed to pursue different strategies. The world's leading powers will adapt their strategies and tactics to the increased prominence of this formerly marginal threat as they

continue to face more conventional means of resolving conflicts.

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See also Cold War; Military Training and Discipline; Technology, Firearms; War and Peace—Overview; Warfare—Air; Warfare—Logistics; Warfare—Naval; World War I; World War II

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Military Training and Discipline

Masses of men, however well armed, will never be a match for a well-trained and highly disciplined military force. Since the birth of nation-states, an army has been part of the organization of the state, but armies have not always been a permanent feature within states.

In early history trained armies were often brought into being at times of crisis and were disbanded once the moment had passed. At the same time certain states and tribes with superior training and experience in military arts and strong discipline began to hire themselves out as mercenaries. In both scenarios, training and discipline go hand in hand to transform an armed group in a viable army.

Training and Punishment

From ancient times, all military leaders have attempted to instill discipline into their troops, and the best method of doing this is training, backed by military discipline. Initial training puts men into groups in which they will perform foot drill and basic tasks; this teaches the men to work together and to work for the good of the group. As the training progresses the group is expanded and often the discipline becomes harsher. Instructors of trainee soldiers always have to balance rewards and punishments to ensure that morale is maintained, even though punishments may have some short-term negative effects on the men's sense of well-being. The aim of training and the discipline that goes with it is to produce a soldier who is capable of operating and fighting effectively in concert with the other members of the armed forces. He should be able at the same time to exercise self-

discipline, once more for the betterment of all, by being well organized himself.

Discipline in the military has always been a matter of concern for nonmilitary people; it is best expressed as another method of training. Soldiers who have no self-discipline make mistakes and may be prone to carelessness, which can lead to mistakes and death. By contrast, cohesive discipline within a group of soldiers brings with it higher morale and thence higher fighting effectiveness. In training and later, because mistakes can cost lives, punishments are graded according to the seriousness of a transgression, just as in civilian life. The German army for a long time used the phrase *Schweiss spart Blut* (sweat saves blood), which encapsulates the whole ethos of military training and discipline. The ultimate punishment for soldiers is the death penalty, until recently meted out for acts such as cowardice in the face of the enemy.

Early Armies

The Assyrians were among the first peoples to create an army, which was a natural expression of their way of life; they were bold men full of energy who were adept at big-game hunting, from which military activity was a natural progression. The Assyrian army at the time (c. 700 BCE) was built within the state, and the main business of the state was war. The Assyrian army was trained in infantry and cavalry maneuvers, field engineering, and sieges, and was supported by a logistical system capable of supporting 100,000 men in the field. Their tactics included the use of terror, and whole populations were either killed on the spot or transported to slavery. The discipline within this army was draconian.

In the seventh century BCE the Greek city-states refined the tactical formation known as the phalanx, which had first been developed by the Sumerians. The phalanx was a block of men—in the case of the Greeks, eight men deep—that marched forward in solid ranks, which was a frightening sight for the enemy.

The ancient Greek city-state Sparta, known in history for its military prowess, was founded around 1000 BCE and initially was little different militarily from the rest of Greece. However, under Lycurgus (ninth century BCE) Sparta became the preeminent military state in Greece, and the training and discipline of its troops became legendary.

The Hellenistic World and Rome

As civilization progressed, armies became standard parts of all states, with the parallel mercenary system alongside. Mercenaries were of particular value because they were paid professional soldiers; soldiers who were not mercenaries were often farmers and peasants, called up for service when needed by their superiors within their own state. Mercenaries were well trained and always available. As long as they were paid, they fought well and were often decisive in battles and campaigns because of their professionalism.

As warfare developed training had to become more complex; troops trained in a limited number of drill maneuvers would soon be outmaneuvered. Philip II of Macedon (382–336 BCE) established a national army that was transformed into a magnificent fighting machine by means of training and discipline allied with careful organization. The heavy infantry were so well trained that they were more maneuverable than the Greek phalanx, a real mark of professionalism. Heavy infantry, by virtue of their origin in the more moneyed middle classes, were better educated and equipped (having bought their arms and equipment themselves), and their training used their loyalty and intelligence to produce cohesive, effective and maneuverable fighting units.

In the Roman army training and discipline combined to produce a force that was rarely defeated

simply because it was so well trained that it could react to adversity and be effective in very difficult situations, times at which opponents would often cut and run. The Roman army was officered by men who had fought initially in the ranks, and who had proved themselves in battle as both courageous and capable



Marble statue of a helmeted hoplite, fifth century BCE, from the Archaeological Museum at Sparta, Greece. Hoplites, or citizen-soldiers who served many ancient Greek city-states, received basic military training in the phalanx formation and were responsible for procuring and maintaining their own armor and spears.



of command. Their men were drilled by their seniors who had battle experience, training which emphasized the importance of maintaining formation, fighting cohesively and always being loyal to their unit and their country. The great incentive for rank and file Roman soldiers was that when discharged after service they would receive citizenship and land.

Early Chinese Military Training and Discipline

The Han dynasty (206 BCE–220 CE) built up a field army of infantry, cavalry, chariots and crossbowmen. The effective use of such an army required detailed training, but there is little in extant literature to guide the student of the period. It seems that the army promoted at least partly on a merit system (as well as seniority), and that the mass of men were assembled by means of conscription into a semi-regular militia, liable to serve at any time they were needed. Men between the ages of seventeen and sixty had to serve for a long period. One treatise of great importance has survived and is still studied today: *The Art of War* by Sunzi (Sun-tsu). It is probably the earliest work on the subject and was read by many of the leading soldiers of the period, as well as by later practitioners.

The Mongols and Cavalry

In agrarian states, cavalry were recruited initially from men who could afford to keep a horse. For foot soldiers cavalry presented a greater threat than opposing foot soldiers because cavalry can move more quickly (and turn a flank), and men are naturally alarmed by the sight of horse riders approaching en masse. Among pastoral peoples such as the Xiongnu (flourished third–eighth centuries CE) or the Mongols, cavalry fighting arose naturally, as pastoralists rode horses in the care of their flocks.

The Mongols, who dominated eastern Eurasia in the thirteenth century, are often depicted as a horde, winning their battles by weight of numbers, speed, and surprise. In fact, the Mongols' numbers were often less than those of their opponents, but their

technique of sending units of men in from many directions gave the impression of many more numbers than they actually had. The Mongols were exceptional horsemen and skilled at arms. Accustomed to life on the move, they were untroubled by weather and hardship and were rarely sick.

Every unit was trained in precise maneuver and was capable of extremely rapid reaction. Practice before battle meant that every component of the Mongol army could cooperate effectively with all other parts of the army, and this was the result of interminable training sessions where mistakes were recognized and ironed out to produce a smooth tactical effort. The method of training was above all based on repetition, so that initial mistakes were trained out, and men reacted cohesively in battle, a primary requirement of all good armies.

The Middle Ages: Evolving Weapons Systems

Weapons in use in Europe during the Middle Ages had changed little from those used in ancient times: infantry were equipped with spears, axes, clubs, or swords, cavalry with sabers. One new weapon, however, was the longbow, which was decisive in the battles of Crécy (1346), Poitiers (1356), and Agincourt (1415), three English victories over the French in the Hundred Years' War, with Agincourt deciding the war in favor of the English. Armored knights on horseback and heavy infantry armed with shorter-range crossbows were mown down by the concentrated fire of the English (or rather Welsh) archers. At Agincourt, although weight of numbers brought the French knights to the English front line, English archers picked up swords, axes, and daggers and attacked the almost exhausted French nobles through gaps in their depleted line of battle, causing terrible casualties.

Firearms also began to be seen, with Europeans beginning to use cannons in the fourteenth century. There were two types: cannons made of copper or bronze alloys, which fired lead shot, and wrought iron cannons, which fired iron balls, stones, or shrapnel.

Never interrupt your enemy when he is making a mistake. • **Napoleon Bonaparte (1769–1821)**

Cannons were employed in sieges, common in the battles of the Middle Ages. The matchlock, a device for igniting gunpowder, was developed in the fifteenth century and made possible the later development (in the sixteenth century) of the musket. Because muskets took a long time to reload, musketeers were protected by pikemen for a long time after they appeared on the battlefield. Training involved loading the musket in a rigid number of steps that had to be performed in sequence, otherwise the weapon would not fire or would be incorrectly loaded and injure or kill the user. Musket training was by its nature devoted to getting men who were being attacked to remain steady and to load and reload their muskets, delivering perhaps

two or three shots at the enemy per minute. Musketeers also had to be trained to advance to within fifty paces (the range at which muskets were usually fired) in good order; they were to maintain their position in the line no matter what happened.

Throughout this period of warfare the infantry fought as a large mass. In the early days this was to present a block of swords or pikes to the enemy and deny him the chance to get to the rear, where great slaughter could be perpetrated; later it was to ensure a maximum concentration of arrows onto the target, or to bring the mass of the cavalry to a specific point.

The Turkish Janissaries were first raised at the end of the fourteenth century, and consisted of former



During the Cultural Revolution (1966–1976) in China, military units drilled in the fields.

Christians captured in childhood and raised as fanatical Muslims. They were to be a force of great renown for some five hundred years thereafter. Their discipline came from the strictures of the Muslim religion, and their ferocity and courage were much respected. The Corps of Janissaries was never large, but they were skilled infantry who would build fortifications as bases around which the less effective Turkish cavalry could maneuver.

Military Training in Japan, 1192–1868

For the better part of a millennium, the islands of Japan were ruled by various military governments, and the warrior elite were training in martial arts and military skills from childhood. House codes prescribed appropriate behavior and supported warrior ideals.

Although there were notable cases of betrayals during the long centuries of military rule, the ethic of absolute loyalty was quite real, as exemplified by the practice of following one's lord in death by committing suicide. During the Edo period (1600/03–1868), there were specialized schools of military training that the military class (which for most of the period, ironically, did not engage in warfare, as there were no wars) attended.

Training Individuals for Modern Warfare

Rifled firearms, which increase the range and accuracy of a fired bullet, were first developed in the fifteenth century, but they were difficult to manufacture and remained the weapon of sharpshooters until the eighteenth century. The nineteenth century saw a further innovation: the machine gun, which was capable of firing off hundreds of rounds per minute. In response to this new weapon, it became necessary to train men to disperse on the battlefield so that they did not present a massed target. In less than fifty years (from the U.S. Civil War to the Boer War) the soldier appeared as an individual. This individual still had to work as part of his team, his unit, and

his formation, but his movements on the battlefield were intended to enable him to fight and stay alive. Training to improve individual skills on the battlefield therefore became more important.

In the days of the line, when men fired on command, training focused on getting the men to stay in line and to fire in concert. Modern warfare, however, requires men often to fire at will and to move on an individual path toward the enemy. This type of training acknowledges that today's soldier is a far cry from the "cannon fodder" of two centuries ago, and that soldiers are important assets to be trained in avoiding personal injury while closing in on the enemy. However when defeat was facing both the Germans and the Japanese they put fewer well-trained personnel into the field, and all involved recognised that this was a desperate attempt at postponing defeat by means of suicidal operations. The Japanese went one step further with the "kamikaze" system, which involved flying aircraft into enemy warships with the certain prospect of death.

Modern training methods still begin with the need to act concertedly and in step with others. However, battlefield training takes the form of individual education in fieldcraft, map reading, communications, camouflage, survival, weapons training, and many other aspects of modern soldiering.

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See also Dance and Military Drill

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Millennialism

Millennialism is the belief in an imminent transition to a collective salvation, either earthly or heavenly, accomplished according to a superhuman or supernatural plan. The term (based on *millennium*, meaning “one thousand years”) is drawn from the New Testament book of Revelation (Apocalypse), which predicts a thousand-year reign of Christ on Earth.

Religious and political movements inspired by millennialism, the belief that collective salvation (either earthly or heavenly) is imminent—and based on and carried out by a superhuman or supernatural plan—have had a major impact on world history; these include the theological revolutions associated with Christianity, Islam, and Chinese combinations of Daoism and Buddhism, and secular movements such as Communism and Nazism. The human hope for a perfect world has been perennial, at least since the founding of the Zoroastrian religion, which possibly dates from as early as about 1000 BCE. Millennial groups oriented toward a heavenly salvation have occasionally startled the world by opting to leave earthly life via group suicide, as was seen in the 1990s with the Solar Temple in Switzerland, Quebec, and France, and Heaven’s Gate in the United States. If earthly salvation for an elect group of people in a millennial kingdom is demonstrated to be impossible, then believers can shift easily to expecting a heavenly salvation, which may have been the case as early Christianity was institutionalized and became more accommodated to mainstream culture in the Roman Empire.

The millennial belief in an imminent transition to a new realm of existence has had a great impact

on world history in many times and places, and has been associated with a range of behaviors. Millennial beliefs can motivate people to convert to entirely new religions, as with early Christianity and Islam, or strengthen their existing faith as they await divine intervention to destroy the old order and create the new. Millennialism can motivate people to engage in social action to improve the world and in spiritual disciplines to transform themselves, but it can also motivate them to commit revolutionary violence in attempts to eradicate an evil society and create the millennial kingdom. Millennialism does not necessarily have to result in violence, and when millennialists are caught up in violent episodes, they are not necessarily the ones who initiate the violence. Numerous millennial prophets and messiahs and their followers have been assaulted or executed because of the threat they pose to the established order.

Millennial Leaders

Millennial movements are often stimulated by someone claiming to have received a new revelation. In the study of religions, the term *charisma* refers to the belief that an individual has access to an unseen, superhuman source of authority. It is impossible objectively to validate the person’s claim: people either accept it on faith or reject it. If others do not believe the individual’s claim to revelation or empowerment, then the person does not have this kind of socially constructed charisma.

Both prophets and messiahs have charisma in this sense. A prophet is someone who is believed to receive revelations, perhaps about the imminent transition to the millennial kingdom. Although also



The Millennium Wheel in London, England, was built to commemorate the beginning of the third millennium CE.

a prophet, a messiah is, in addition, believed to have the superhuman power to create the millennial kingdom. There can be religious apocalyptic prophets, such as Muhammad, and religious messiahs, such as Jesus Christ, who according to the gospels was also an apocalyptic prophet. There can also be secular messiahs, such as Adolf Hitler, who claimed to be empowered by “nature” to create the Third Reich as the millennial kingdom for the German *völk* (folk).

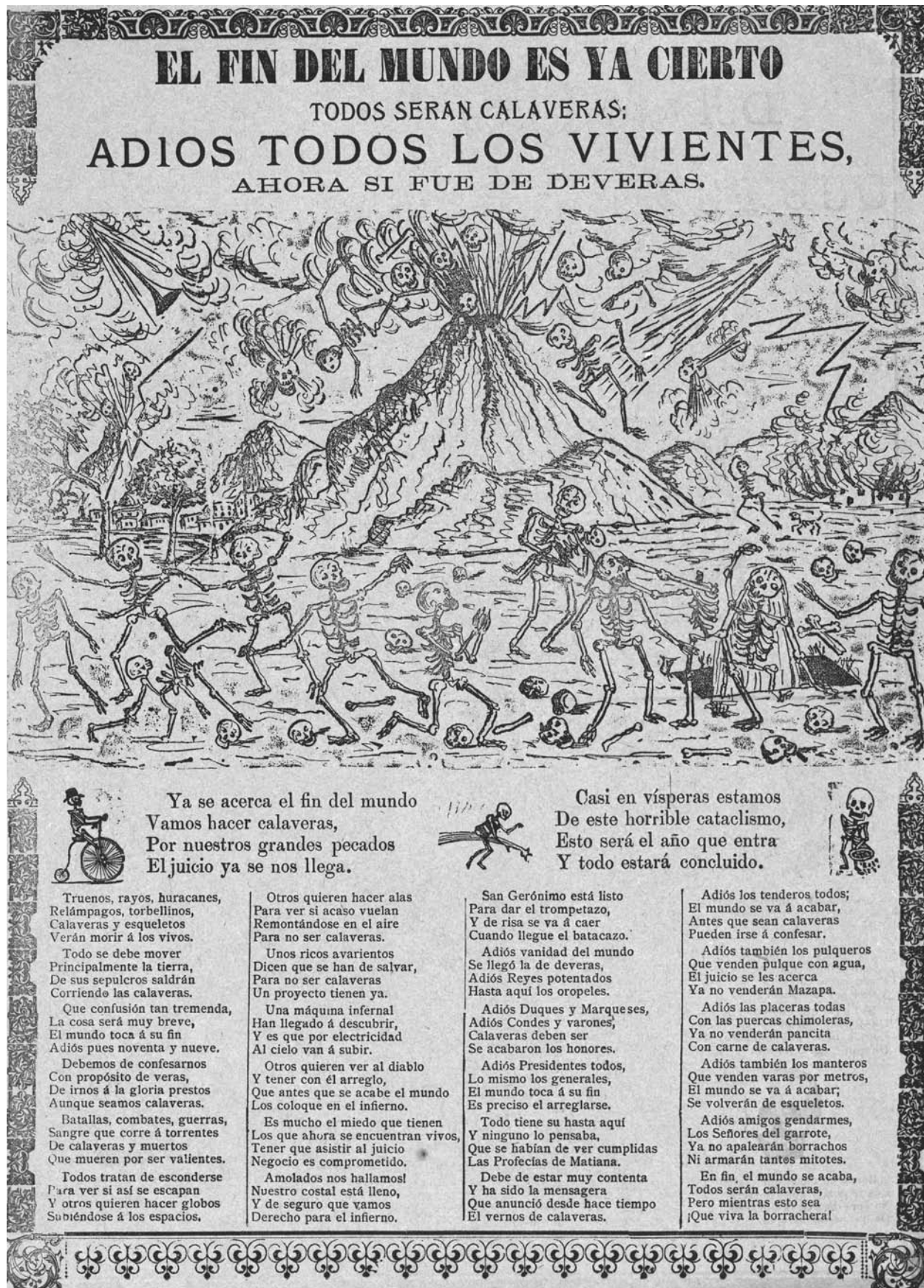
Millennial movements do not necessarily have to have prophets and messiahs. They may arise from the widespread anticipation and/or fears of a number of people, such as the diffuse Euro-American (white supremacist) movement in the United States at the end of the twentieth century and the beginning of the twenty-first, which includes Identity Christians, racist Neopagans, neo-Nazis, and secular survivalists and warriors expecting an apocalyptic conflict with the federal government.

Main Patterns of Millennialism

Scholars now use the term *millennialism* (or *millenarianism*) to refer to two common patterns, which are not mutually exclusive; millennialists may shift from one pattern to another in reaction to different circumstances. Both types of movements may or may not have prophets and/or messiahs.

Catastrophic Millennialism

Catastrophic millennialism, often termed apocalypticism, anticipates a catastrophic transition to the millennial kingdom, either earthly or heavenly. Human nature and society are so evil that society has to be destroyed and created anew. Christians who have these expectations are often categorized by scholars as “pre-millennialists,” because they expect Jesus Christ to return *first*, defeat evil powers, destroy the



This Mexican broadside from 1899 shows skeletons in pandemonium as they anticipate the end of the world.

I worry that, especially as the Millennium edges nearer, pseudo-science and superstition will seem year by year more tempting, the siren song of unreason more sonorous and attractive. • Carl Sagan (1934–1996)

current world, resurrect the dead, judge all people, and then create the millennial kingdom (either earthly or heavenly).

Most catastrophic millennialists wait for divine intervention to carry out the catastrophic events. Some, such as the Branch Davidians and some Identity Christian communities, may arm themselves for self-protection during the tribulation period believed to lead to the end-time events; if they are attacked they will fight back. Some, such as a succession of violent movements in Christian medieval Europe, become actively revolutionary. If the revolutionaries do not have a critical mass they become terrorists.

Progressive Millennialism

Progressive millennialists believe very strongly in progress, and are typically concerned with creating a millennial kingdom on Earth. They believe that humans acting according to a divine or superhuman plan can progressively create the millennial kingdom. Christian progressive millennialists are often termed “post-millennialists” by scholars to indicate that they believe they must do God’s will by creating the conditions for God’s kingdom on Earth, and *then* Christ will return.

Progressive millennialists include Protestants working peacefully to improve society by carrying out the Social Gospel, as well as post-Vatican II Catholics with a “special option for the poor” working for social justice. Logically, however, progressive millennialists could arm themselves if they felt their community was threatened and fight back if attacked, but this possibility has not received much study. And some progressive millennialists, wishing to speed progress up “to an apocalyptic rate” (Ellwood 2000, 253), become revolutionaries. They are willing to kill others and to carry out massive violence to accomplish their vision of the millennial kingdom. Scholars have identified Nazism, the Marxist Khmer Rouge regime, and Mao Zedong’s Communist Revolution and Great Leap Forward as examples of revolutionary progressive millennialism.

On the revolutionary end of the spectrum, there appears to be little difference between catastrophic

and progressive millennialists, other than the latter having a strong belief in progress. Both types possess a rigid dualistic outlook, seeing situations and people in terms of good versus evil, us versus them, and they kill to accomplish their millennial dreams.

Nativist Millennial Movements

Nativist millennial movements, sometimes called “revitalization movements,” result when a people feels colonized and oppressed by a dominant power and its accompanying bureaucracy. Their traditional way of life is being destroyed and they often are losing their land and means of livelihood. They wish for a return to an idealized earlier time for their people, which they imagine to have been perfect. They are millennialists in that they expect an imminent transition to a collective salvation, which will eliminate their oppressors. These movements have been found in every part of the world in response to colonialism.

In the United States nativist millennialism can be seen in the nineteenth-century Ghost Dance movement, a response by Native Americans to removal from their lands and destruction of their traditional way of life. Beginning in the late twentieth century, nativist millennialism could be discerned also among certain white people in the United States, who imagined themselves to be the “natives” of America. Living in the countryside and towns, and also in cities, they felt oppressed by federal agencies, and believed that their traditional way of life was being destroyed by increasing ethnic diversity, changing gender roles, and greater acceptance of diversity in sexual lifestyles. This unnamed but influential movement could be called the Euro-American nativist movement.

Some nativist millennialists, like the Native American Ghost Dancers, may expect divine intervention to remove the hated oppressors in response to a magic or sacrificial ritual such as the Ghost Dance, which was intended to bring the return of the ancestors. Some, like the Pai Marire movements among the Maori in nineteenth-century New Zealand, may alternate between expecting divine intervention, committing active revolutionary violence, and progressively building their own separate communities. Nativists’ actions



depend on a variety of factors, including whether they are left alone to build their perfect societies or they are attacked.

Millennialism in the Twenty-First Century

Millennialism will remain an important factor in world history. It might be stimulated by significant dates, such as 2000, but the hope for the collective salvation has existed for thousands of years and will not disappear. In the new temporal millennium, Christian Dispensationalists, for instance, interpret events in the Middle East as fulfilling prophecies leading to Christ's Second Coming; they expect that the faithful will be "raptured" into heaven and thus escape the catastrophic end-time events. With the terrorists attacks of September 11, 2001, al-Qaeda became the most visible segment of a diffuse and widespread revolutionary Islamist movement that aims to destroy what is seen as a confederation of "unbeliever" nations, including the United States and "hypocrite" Muslim nations aligned with the West, to create the perfect Islamic state enforcing sharia (Islamic law)—a Muslim vision of the collective earthly salvation. Those revolutionary Islamists who die for the cause are assured that they will receive immediate rewards in heaven—a very dangerous combination of expectations concerning earthly and heavenly salvations.

While people in all parts of the world continue to interpret catastrophic tragedies and oppression through an apocalyptic lens, many progressive millennialists, from Jews, Christians, and Muslims to Hindus, Buddhists, and New Agers, still hope and work for a peaceful world.

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See also Utopia

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Miranda, Francisco de

(1750–1816)

SOUTH AMERICAN REVOLUTIONARY

The South American revolutionary Francisco de Miranda was not an exceptional military talent, a gifted diplomat, or an innovative thinker. He was a master propagandist and tireless promoter of the one idea that animated his entire life: the emancipation of Spanish America. For his constant efforts on four continents, his countrymen have given him the title of Precursor.

Born in Caracas, Venezuela, to an entrepreneurial émigré merchant from the Canary Islands, Francisco de Miranda grew up in a large family and attended college in Caracas. Miranda's father purchased a captaincy in the Spanish army for him, and the ambitious young man set off for Madrid in 1771. Thus began the adventures of a man who would one day become a revolutionary obsessed with the emancipation of South America.

Miranda did not return to Venezuela for nearly forty years. Once in Spain, Miranda set about enjoying all that life in Europe offered. Beginning a pattern that lasted throughout his lifetime, he exploited his considerable charisma to secure the patronage of wealthy men and women who paid his expenses and invited him to their salons. Miranda entered into active duty and saw service in the Spanish garrisons in northern Africa. He proved to be an unusually difficult soldier, however, openly admiring his Moorish opponents and sympathizing with their desire to rid their soil of a foreign military presence. Starting to dream of liberating his own countrymen, Miranda was reprimanded, even jailed, several times for his insolence and outright disobedience. He requested a transfer to the Spanish fort at Cuba several times

before permission was finally granted and he set sail for the Caribbean in 1780.

Once there he again enjoyed the protection of important people; Cuban governor Juan Manuel Cagigal liked the brash young man and invited him to participate in the expedition that retook Pensacola from the British. He later coordinated the efforts of certain Cubans to supply the North American patriots, sending critical financial aid to Admiral de Grasse in Chesapeake Bay. In 1783, he was entrusted with an important mission to Jamaica to negotiate a prisoner exchange but, while there, may have had some secret business of his own. When he returned to Cuba, rumors started to circulate that Miranda had been enlisted as an English spy. Although the charges were never proven, he had already become so transfixed by the idea of liberation and alienated from the Spanish Empire that he decided to defect. Under cover of darkness, Miranda stole away to the United States to witness the birth of a new American republic.

Francisco de Miranda spent nearly two years, 1783 and 1784, traveling throughout the United States, stopping in Charleston, Philadelphia, New York, Boston, and many smaller towns in between. During his extended tour, he visited many important battle sites and talked with many important military and political leaders of the new nation. Miranda became particularly close with Alexander Hamilton, Henry Knox, and the extended family of John Adams, whose son-in-law William Smith became a frequent travel companion. He met George Washington and the Marquis de Lafayette, both of whom left him unimpressed. Throughout his tour,



Lewis B. Adams, *Portrait of Francisco de Miranda* (c. 1844). One idea animated Francisco's entire life: the emancipation of Spanish America.

Miranda sought out experiences that would help him understand the vast political experiment taking place around him.

In 1784, Miranda sailed to England to continue his useful politically motivated tourism. He ventured northward to Scotland in a failed effort to meet Adam Smith, but nonetheless managed to meet important academics and inventors in Edinburgh and at Oxford University. The Spanish embassy kept close watch on this deserter, sending back frequent reports on his activities and meetings. In 1785, Miranda and William Smith decided to take a tour of Europe. They sailed for the Netherlands, and from there continued onward to Prussia, where they arrived in time to witness maneuvers being held by Frederick the Great's much-vaunted military. Parting ways with Smith, Miranda continued southward to Italy, where he held secret meetings with exiled Spanish-American Jesuits. Miranda's educational tour continued to Greece and Turkey, where he reverentially visited all the sites of classical antiquity and studied current military practices and weaponry.

Miranda headed northward to the Crimea just in time to meet Prince Potemkin and Catherine the Great on their tour of the Ukraine in 1786. Enjoying royal favor, he spent a year in Russia with Catherine, who later granted him the aristocratic title of count and promised him perpetual protection in her embassies. Miranda traveled through Scandinavia and back to central Europe, ending his tour in France. With his impeccable timing he arrived in Paris in the momentous month of May 1789, when the first steps toward revolution occurred.

Feeling sympathy with the cause of liberation throughout the Atlantic world, Miranda joined the forces of the French Revolution in 1793. He commanded their northern troops in Belgium but failed to secure his territorial gains when material support from France was slow to arrive. Miranda was a competent military leader, but quickly fell victim to the Jacobins' political intrigues. Maximilien Robespierre, in particular, despised Miranda for his adherence to positions advocated by the Gironde (a group of moderate republican deputies). In 1794, Miranda was arrested, put on trial for treason, and jailed for nearly two years; when he was released he returned to England to try to interest Prime Minister William Pitt in a scheme to liberate South America. He remained devoted to the ideals of the early French Revolution, though, and eventually founded a Jacobin club in Venezuela.

Tired of waiting for William Pitt and the English Parliament to approve his expeditionary force, Miranda decided to ask his old friends in the United States for assistance. He sailed to America in 1805 and quickly secured an audience with President Thomas Jefferson and Vice President James Madison, who expressed their interest, even their tacit approval, but refused to grant him any official support. Nevertheless, Miranda's friends in New York were more enthusiastic and managed to outfit a ship, which he named the *Leander*, after his young son. Dozens of idealistic young men volunteered to join his expedition, which landed at Coro, in northwestern Venezuela, in 1806. Despite his grandiose pronouncements of liberty and equality, Miranda's forces met with



little interest from the local inhabitants. He held the town for about a week before abandoning it (along with several of his disillusioned mercenaries) to the advancing Spanish royalists. Miranda returned home to his young family and a hero's welcome in London; many of his followers died in Spanish prisons. The episode later launched a bitter political controversy in the United States when opponents of Jefferson and Madison tried to tie the illegal and abortive invasion to their administration.

Miranda spent three more years in London, lobbying politicians on behalf of his cause and learning how to manipulate public opinion by prosecuting his arguments in the press. He formed close working partnerships with the philosophers James Mill and Jeremy Bentham, both of whom took a great interest in the emancipation of Spanish America. Miranda relished his position as host to the various representatives of Spanish American juntas who came to London in the summer of 1810 and returned to Venezuela himself later that year. Napoleon's invasion of Spain in 1808 had created a constitutional crisis in the empire; power legally devolved upon local town councils until the central monarchy could be restored. At first, patriotic Americans claimed loyalty to the crown, but by 1811, certain radical elements in both Buenos Aires and Caracas had come out in favor of independence and republican government. Miranda was elected as representative of the remote province of Pao when the constitutional congress was held and the First Republic declared in July 1811. He was a controversial figure, though, seen by many as old and out of touch with local realities. When the Spanish royalists staged their counterattack, Miranda reassumed his familiar role as general and commander in chief. In early 1812, he assumed emergency dictatorial powers during

the siege at Valencia, which fueled his unpopularity among the younger patriots.

Francisco de Miranda was taken in chains to the port city of Cádiz in Spain, where he lived out the rest of his days miserably in the prison of La Carraca. He continued to correspond with his friends and family, constantly beseeching them to secure his release. His health failed dramatically and he died in July 1816. Miranda was not an exceptional military talent, nor was he a gifted diplomat. Neither was he an innovative thinker. He was a master propagandist and tireless promoter of the one idea that animated his entire life: the emancipation of Spanish America. For his constant efforts on four continents, his countrymen have given him the title of Precursor.

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See also Spanish Empire

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Missionaries

For centuries, believers committed to a particular religion have endeavored to convert those with differing beliefs, and thus have affected great change throughout the world. The three main “missionizing” religions in history have been Buddhism, Christianity, and Islam.

Missionaries are men and women who propagate a particular religious belief, attempt to convert those holding a different belief, and found new communities of people to practice their belief. For at least 2,500 years, missionaries have been some of the most important agents of change in world history. In innumerable ways, missionaries have significantly shaped, and continue to shape, the world we live in today.

The definition of missionaries given above presupposes several conditions. First, the missionary’s religion is not associated with a particular village or region. That is, the religion must be transportable and not bounded geographically. It cannot be associated solely with, for example, an oracle residing in a sacred grove near an African village. Second, there is some higher authority that sends the missionary out “on mission.” Christian missionaries, for example, might receive their authority from a particular missionary society, but ultimately they believe their authority comes from God. Third, missionaries intentionally set out to try to convert others to their faith. Fourth, the missionary must believe that his or her religious belief is universally “true” and that all other beliefs are in error. This revelation needs to be shared with all nonbelievers so that they may be “liberated” from evil and falsehood. Finally, the missionary feels uniquely “called” to mission, believing that he or she has received a special commission or

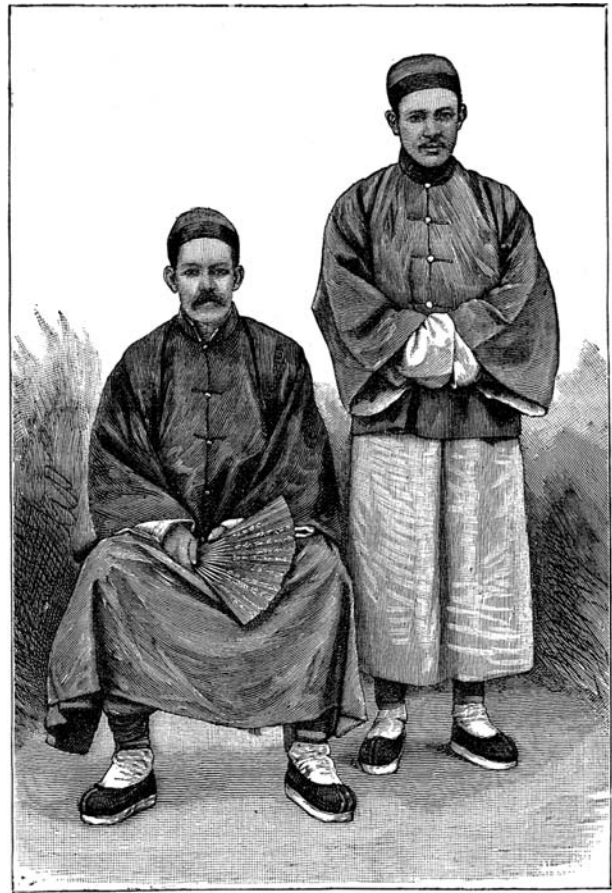
mandate to bring the religious vision and its benefits to the nonbeliever.

It is also important to distinguish between “home” and “foreign” missions, although the distinctions are becoming increasingly blurred. Examples of home missionary work would include youth programs, shelters and food kitchens, door-to-door evangelizing, distribution of religious literature, public witness, and protests or pressure directed toward religious and political leaders to come more in line with specific doctrinal beliefs, such as antiabortion. Obviously, many such activities are also carried out by missionaries in “foreign” missions, which carry the religion beyond its land of origin. But foreign lands that were considered “pagan” a century ago, such as parts of Africa, are now sending Christian missionaries to the United States and Europe to convert Europeans or bring apostates back to their faith. Major world missionizing religions for at least the last two or three centuries have focused their activities not only on nonbelievers who practice local religions, such as among the Native Americans in the United States, but also on each other, such as Christians and Muslims trying to convert each other’s members. The Christian evangelical movement has targeted Central and South America for much of its missionary efforts, not toward non-Christians, but to convert the majority Roman Catholic Christian populations to Protestant versions of Christianity. While recognizing these increasingly fuzzy distinctions between home and abroad and “us” and “them,” this essay will focus primarily on missionaries working in “foreign” missions for the major world missionizing religions.

Through the notion of universality, missionaries consider their religious beliefs to be transcultural and

transcendent. The supreme power or truth that these beliefs possess overrides the nonbeliever's personal bonds with his or her immediate family, clan, ethnic identity, political organization, and local religious belief. Missionaries themselves, however, are seldom able to fully separate themselves from their own social and cultural heritage and traditions. There are some core beliefs that are essential to the faith, and therefore required of all believers in all cultures. There are other religious practices that are unique to a missionary's own national or regional (as Scotland, the Middle East) culture and heritage, and these should be modified and adapted as the religion spreads to new areas. Missionaries often link their own social, cultural, economic, and political customs, however, with the universal, core religious beliefs. Frequently these then become one and the same. Islam around the world has a distinctly Arabic nature, due in no small part to the requirement that the Qur'an be read in Arabic. Buddhism reveals its roots in Indian philosophy and culture wherever it is practiced. Chinese Confucian and Daoist concepts are closely woven into the fabric of Son and Zen Buddhism in Korea and Japan. Western Enlightenment ideas about human rights, rational thought, and the scientific method accompany many Christian missionaries. While the central religious message is universal, cultural expressions such as wearing a certain style of clothing, having only one spouse, doing "manly" work, or eating in a certain manner are often required for one to be considered a good convert to the new faith. Because of this, missionaries, such as those Christian missionaries that accompanied European imperial expansion over the last five hundred years, are sometimes viewed as cultural imperialists.

One reason for this charge of cultural imperialism is that Christian missionaries, unlike the missionaries of any other religion, have more often been involved in activities that have gone far beyond simply teaching the gospel under a tree or building a church. Jesuits served as advisers to the Chinese emperor and Japanese shogun in the 1500s and 1600s. Franciscan, Dominican, and other Catholic missionaries owned slaves in the Americas, and both Protestant and



To make potential converts feel comfortable, two Protestant missionaries in China wear traditional Chinese clothing.

Catholic missionary societies owned vast plantations and lands abroad. Besides their ministry, and sometimes instead of their ministry, Christian missionaries were involved in myriad secular activities, including establishing schools and colleges, setting up hospitals and clinics, serving as doctors, nurses, translators, interpreters, government agents, merchants, and military advisers. This involvement in local economies, governments, and cultures had an immense impact on societies and peoples around the world. To cite just one example, many newly independent countries in the second half of the twentieth century, particularly in Africa, were led by men who had obtained their primary and often higher education in Christian missionary schools, which led them to be very "Westernized" in their thinking and attitudes.

Implicit in the charge of cultural imperialism is the idea that the missionary has employed some type of force, coercion, or deception on the convert



A Spanish mission in central Mexico.

to convince him to abandon traditional ways and accept new ones. It is true that at some time in its past, every missionizing religion has been advanced through force—Islam by conquest, Buddhism by zealous feudal warlords, Christianity through the Inquisition. Still, it is also true that each of these religions recognizes that forced conversion is a counterfeit conversion, and that converts must come to their new faith with a free and open heart. The Qur'an, for example, declares, "There is no compulsion (force) in religion" (2:256).

Conversion is a major topic of study in its own right and is too complex to discuss in any detail here. But, depending on the culture in which one lives, conversion to a new religion may require the abandonment of all or large parts of one's birth culture. In many societies religion and culture and daily life are all so closely linked together that it is impossible to change one without changing all. The missionary,

who believes absolutely in the correctness of his or her vision and the benefits, such as eternal salvation, to be gained from it, will argue that each individual should be free to hear the compelling and, it is hoped, convincing message. The problem arises when the missionary has the might of imperial military and economic forces behind him or her and can call on those forces whenever necessary. When European nations and the United States, for example, forced Japan to sign "Open Door" treaties in the mid-1800s, there was generally a clause in each treaty that allowed Christian missionaries to travel anywhere in this country and proselytize freely with no restrictions. Because of the perceived threat that missionaries pose to their traditional cultures and religion, many countries with a single state-supported religion have forbidden missionaries representing other beliefs to proselytize within their borders. Many of the predominantly Roman Catholic countries in South

and Central America, for example, place restrictions on Protestant evangelical missionary activities, and Russia has placed similar restrictions on Protestants, whom they view as threatening the Russian Orthodox Church. In many Islamic countries all non-Islamic missionary activity is strictly forbidden, and conversion from Islam to another religion is punishable by death.

On the other hand, converts have often taken advantage of the missionary's connections to a wider world. For example, as more scholarly studies appear detailing Christian missionary activity during the age of European imperialism, it is clear that many nonbelievers converted less for spiritual reasons than for economic, political, or social ones. Missionaries provided chiefs with firearms, children with education, women with health care and freedom from patriarchal domination, poorer citizens with a perceived enhanced status through the opportunity to wear Western clothing, speak a Western language, and become a clerk or some other functionary in a colonial government. These self-serving motives for conversion meant that missionary successes were often quite tenuous, and there are numerous accounts of backsliders and even whole villages or chiefdoms reverting to traditional beliefs as the material or political advantages of becoming Christian changed. Missionary critics argue that even in those examples where local elites invited foreign missionaries to come and freely spread their message, there were always underlying economic or political motives that dictated this action rather than a deep spiritual commitment to the missionary's religion. It must also be said, however, that many missionaries of all faiths have been remarkable, altruistic people who truly cared for the people among whom they worked. Some fought against the harsh treatment or injustice inflicted upon local people by outside forces, such as colonial settlers, or even local governments. The priests and nuns who have been killed by dictatorships in Central America during the past thirty years represent but a few examples of this compassion and sacrifice.

No matter how or where they arrive, missionaries always meet some resistance and their chances for

success often depend on whom they are able to reach most effectively. In many cases they begin with the people at the margins—women, children, people with physical or mental handicaps, outcasts, the poor and illiterate, widows. In these instances missionaries are tolerated at best, and sometimes martyred by the elites who feel their positions threatened. When missionaries directly challenge the power elites they may be viewed as political troublemakers and their converts as traitors. Rulers in these situations may take exceptionally harsh measures against both the missionaries and converts, such as the massacre of Christians at the beginning of the Edo period (1600/03–1868) in Japan. Only in those cases where a majority of the elites and common people accept the new religion are missionaries able to initiate revolutionary change in a society. Generally, it has also been the case that missionaries are more effective among peoples who do not practice other world religions. Christian missionaries, for example, have had relatively little success in converting Muslims or Hindus.

Missionizing Religions

Buddhism, Christianity, and Islam are the three principal missionary religions in world history. In the twentieth century it was also possible to speak of missionaries for the secular belief of communism. (Although communism and the missionaries who spread it meet many of the criteria listed above, this article will discuss only religious missionaries.) But other religions have had less impact or less sustained missionary activity than these three principal religions.

Although Judaism is one of the oldest continuous world religions, it has discouraged missionary work and even conversion for many centuries. Prior to the Jewish revolts against the Romans in 66–70 and 132–135 CE, there was extensive Jewish missionary activity among certain sects of Judaism to fulfill the prophecy in Habakkuk 2:14, “For the earth will be filled with the knowledge of the glory of the Lord, as the waters cover the sea.” Following the second revolt, however, as many Jews entered the Diaspora, the focus shifted to maintaining a holy community awaiting

Statistics of Protestant Missions in China—December, 1888.

FROM THE CHINESE RECORDER.

	NAME OF SOCIETY	DATE OF MISSION	FOREIGN MISSIONARIES.			TOTAL.	NATIVE ORDAINED MINISTERS	UNORDAINED NATIVE HELPERS.	COMMUNICANTS.	PUPILS IN SCHOOLS.	CONTRIBUTIONS BY NATIVE CHURCHES.
			MEN.	WIVES.	SINGLE WOMEN						
1	London Missionary Society...	1807	31	21	13	65	8	72	3,695	1,927	(?) 14,420.00
2	A. B. C. F. M. ...	1830	16	13	6	35	4	105	816	443	425.07
3	American Baptist, North ...	1834	11	9	10	30	6	37	1,340	244	1,077.00
4	American Protestant Episcopal ...	1835	10	8	3	21	17	3	496	1,614	568.18
5	American Presbyterian, North ...	1838	48	36	18	102	23	84	3,788	2,352	7,090.00
6	American Reformed (Dutch) ...	1842	7	6	2	15	6	16	844	163	2,870.03
7	British and Foreign Bible Society ...	1843	14	7	...	21	...	(?) 114	...	...	...
8	Church Missionary Society ...	1844	28	17	5	50	11	81	2,832	2,041	3,469.20
9	English Baptist ...	1845	21	16	...	37	1	8	1,130	210	425.00
10	Methodist Episcopal, North ...	1847	32	31	17	80	43	91	3,903	1,288	4,490.91
11	Seventh Day Baptist...	1847	2	2	1	5	...	1	30	9	...
12	American Baptist, South ...	1847	7	6	7	20	7	18	776	292	687.70
13	Basel Mission...	1847	24	19	...	43	2	49	1,885	692	949.86
14	English Presbyterian ...	1847	24	16	10	50	8	89	3,428	575	5,435.10
15	Rhenish Mission ...	1847	4	2	...	6	1	4	154	37	50.00
16	Methodist Episcopal, South ...	1848	10	9	15	34	4	7	286	855	246.91
17	Berlin Founding Hospital ...	1850	1	1	4	6	...	1	27	80	...
18	Wesleyan Missionary Society ...	1852	25	12	6	43	2	33	975	552	403.00
19	Woman's Union Mission ...	1859	...	...	4	4	...	2	36	109	8.18
20	Methodist New Connexion ...	1860	7	4	1	12	...	36	1,232	180	101.00
21	Society Promotion Female Educ. ...	1864	...	...	7	7	...	...	...	...	...
22	United Presbyterian, Scotch ...	1865	7	5	1	13	...	14	773	67	(?) 150.00
23	China Inland Mission ...	1865	139	62	115	316	12	118	2,415	153	459.45
24	American Presbyterian, South ...	1867	10	6	3	19	...	5	82	300	92.00
25	United Methodist Free Church ...	1868	3	3	...	6	2	8	329	72	263.00
26	National Bible Society of Scotland ...	1868	4	2	...	6	...	(?) 60	...	...	...
27	Irish Presbyterian ...	1869	3	3	...	6	...	12	68	...	...
28	Canadian Presbyterian ...	1871	5	4	1	10	2	50	2,650	318	491.80
29	Society Propagation of the Gospel ...	1874	(?) 5	2	4	(?) 11	...	...	...	...	...
30	American Bible Society ...	1876	7	4	...	11	...	33	...	...	...
31	Established Church of Scotland ...	1878	1	1	...	2	...	3	30	80	...
32	Berlin Mission ...	1882	4	4	1	9	3	21	500	70	...
33	Allem. Ev. Prot. Miss. Gesell. ...	1884	1	...	...	1	...	...	...	...	...
34	Bible Christians ...	1885	4	2	...	6	...	...	3	...	...
35	Foreign Christian Mission Society ...	1886	5	2	...	7	...	...	2	32	...
36	Soc. Prop. Christ. & Gen. Knowledge ...	1886	1	1	...	2	...	...	...	...	...
37	Society of Friends ...	1886	1	1	2	4	...	...	...	...	...
38	Am. S'dinavian Congregational ...	1887	2	...	...	2	...	...	...	...	...
39	Ch. of Eng. Zenana Miss. Society ...	1888	...	...	3	3	...	...	...	...	...
40	Independent Workers ...	...	2	...	1	3	...	3	(?) 30	(?) 62	...
Total—December, 1888 ...			526	337	260	1,123	162	1,278	34,555	14,817	841,473.39
Increase over Dec., 1887 ...			37	17	39	93	...	...	2,295	1,140	\$5,936.69

This table shows the extent of Protestant missionary activity of the 39 missionary societies and 1,123 missionaries active in China in 1888.

the messiah. Jewish missionary activity ceased and potential converts were even discouraged through an emphasis on strict observance of Torah (Jewish law), and by requiring male circumcision.

Some ancient religions, such as Zoroastrianism or the Egyptian cult of Isis and Osiris, claimed universal messages but were closely tied to specific sociopolitical contexts. They spread most commonly through migration, trade, war, and the conversion of neighboring peoples without the direction of any central mission authority. Many syncretic religions, such as Sun Myung Moon's Unification Church (the Moonies), the Sikhs, and the Baha'i faith have universal messages, do actively promote missionary activity, and seek converts, as do many of the myriad

independent, indigenous churches in Africa, such as the Kimbanguist Church in the Democratic Republic of the Congo.

One of the oldest and most populous religions in the world, Hinduism, with over 800 million practitioners, almost defies description because of its complexity. Because Hinduism had no founder, possesses no single creed, and looks to no single source of authority, it does not possess some of the key characteristics of a missionary religion. In the past, Hinduism essentially spread by the gradual adoption of Vedic sacred texts and practices across India and had no missionary tradition. Beginning in the nineteenth century, however, and continuing today, some "evangelical" Hindu sects, often organized around a particular

guru, have actively sought converts through missionary activities. The most well-known of these are the Maharishi Mahesh Yogi's Transcendental Meditation movement and the Ramakrishna Mission, or Hare Krishnas.

Buddhist Missionaries

“Go forth O Monks, for the good of many, for the happiness of many, out of compassion for the world, for the welfare, the good and happiness of both gods and men. Let no two of you go in the same direction. Teach the Dhamma . . . Explain both in letter and in spirit the holy life, completely fulfilled and perfectly pure” (Vinaya, Mahavagga: I.II.I).

Buddhism was the first world missionary religion, crossing boundaries of race, ethnicity, language, culture, and politics. Having given his Great Commission, the historical Buddha (Siddhartha Gautama; c. 566–c. 486 BCE), living in northern India, sent his disciples in all directions to share his teachings, the dharma. There was to be no centrally organized missionary movement, but simply individual monks and teachers going their separate ways to propagate the Buddha's teachings. The Buddha showed the way by refusing to enter into Nirvana after becoming enlightened, but living on into his eighties to teach what he had discovered through meditation and contemplation.

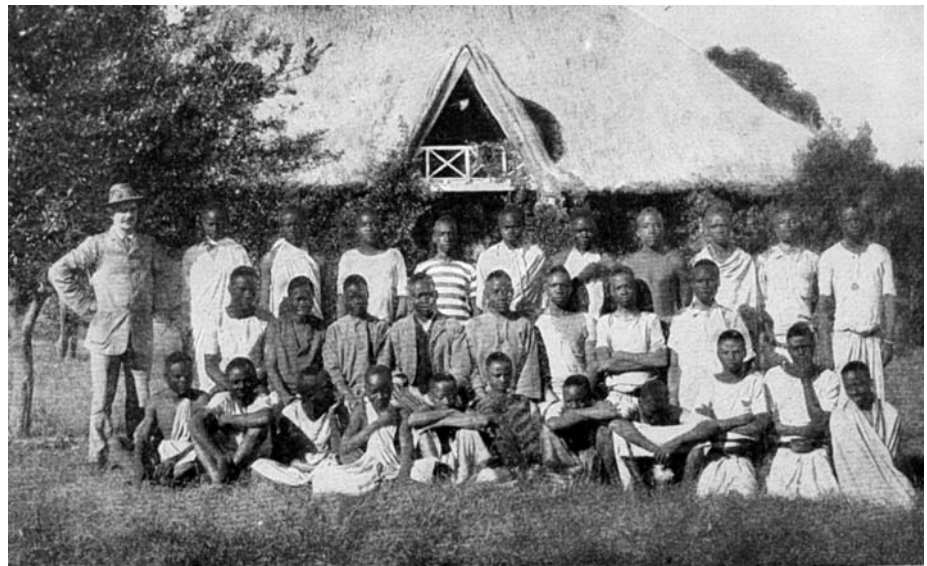
While Buddhist missionaries may belong to different sects, they all share a central core of beliefs, particularly the Four Noble Truths and the Eightfold Path. They do not teach that the Buddha is a deity, nor recognize any supreme god or creator. They consider the Buddha's message universal, one truth having relevance for one mankind. As there is no concept of sin in the dharma, Buddhist missionaries do not offer salvation, but rather the overcoming of, and freedom from, ignorance. They also believe that no outside spiritual force or deity, including the Buddha, can confer enlightenment. After hearing the dharma teachings, each individual must experience and realize the truth for oneself. Buddhist missionaries are unique in not competing against missionaries

from other religions. They are never to use coercion or violence to gain converts, never to try to convert someone who is content in his or her own faith, never to speak disparagingly of other faiths. Intolerance, dogmatism, and religious fanaticism are decidedly non-Buddhist-like behaviors.

Following the Buddha's death, individual monks from the monastic community, the Sangha, traveled with their alms bowls and taught the dharma along caravan routes, such as the Silk Roads, thereby linking Buddhism's spread to the development of long-distance trade. Around 262 BCE the Mauryan ruler, Asoka, adopted Buddhist principles for his vast empire. Besides commissioning the first written dharma texts, he also sent out Buddhist missionaries (monks) across India and beyond. Indian Buddhist monks brought the dharma to China in 67 CE at the emperor's invitation. By the 500s Buddhism had spread to Nepal, Sri Lanka, Vietnam, Burma, Thailand, southern China, Indonesia, and Cambodia. Ch'an Buddhism began in China around 520, and spread from there to Korea. By the 1200s, Japanese Buddhists had developed their own version of Ch'an Buddhism known as Zen. Tibet received its first Indian Buddhist missionary, the Guru Rimpoche (Padmasambhava), in 817. Ironically, when northern India came under the political control of Turkish Muslims between the ninth and twelfth centuries, many Buddhist monks were killed and their universities/monasteries destroyed. By the 1500s, Buddhism had nearly died out in the Buddha's homeland.

After several centuries of relative stagnation, Buddhism began in the 1800s to spread to Europe and the Americas. Since World War II Buddhism has gained a wide following in the West. In the 1950s and 1960s dozens of Europeans and Americans traveled to Asia where they spent years studying throughout the Asian Buddhist world. Many of them have now returned and together with thousands of recently arrived Asian immigrants have established monasteries and Buddhist societies throughout Europe and the Americas. Asian Buddhist monks now regularly visit the West to teach the dharma. Some scholars now speak of American Buddhism, which is

A Protestant missionary in Africa in the late 1800s stands with indigenous Africans who are training to assist in the conversion of other Africans.



characterized by a unique blending of many different Buddhist practices.

Christian Missionaries

“Therefore go and make disciples of all nations, baptizing them in the name of the Father and of the Son and of the Holy Spirit, and teaching them to obey everything I have commanded you” (Matthew 28:19–20).

Matthew writes that after the Resurrection, Jesus appeared among his disciples and gave them his Great Commission. Like the Buddha, Jesus had already set a missionary example as he gathered followers, promising to make them “fishers of men” (Matthew 4:19). Following Jesus’ death, his Jewish Christian followers, based in Jerusalem, spread his message to others in the surrounding Jewish community. Whether they were one of Jesus’ original followers or new converts to his teachings, however, they remained Jews and were expected to keep the Hebrew law. It was Paul of Tarsus, recognized as the prototype and greatest of all Christian missionaries, who began to tell Jesus’ story to the Gentiles (non-Jews), and he and others carried the gospel, or good news, across Anatolia (modern Turkey) and Greece to Rome. It was Paul who separated Christianity from the Hebrew law and its Jewish context, thereby giving it a universal appeal to people of all nations.

Although there have been nearly an infinite number of schisms among Christian believers since Jesus

preached his gospel, there are still some core beliefs that a majority of Christian missionaries share. Some of these beliefs Christians adopted from Judaism, such as a belief in one God, in a messiah, or Christ, and in an afterlife. The central Christian belief is that through faith in Jesus’ sacrificial death and resurrection, individuals are spiritually and physically saved from death, their sins are redeemed, and they will return to God in heaven. All Christian missionaries will also teach that God is a Trinity, a single supreme being in three persons, Father, Son, and Holy Spirit, and that Jesus is both fully human and fully God, two natures in one.

The missionaries who followed Paul carried the gospel across the Roman Empire. A critical turning point in Christian history came when Constantine made Christianity the religion of the Roman Empire in 312 CE. Over the next seven hundred years, missionaries evangelized large parts of Europe, Ireland, Anatolia (including the important city of Constantinople [now Istanbul]), and North Africa. Much of this missionary work was undertaken by monastic monks, such as the Nestorians and Cistercians.

The second millennium began with the Great Schism of 1054, which divided Christianity between the Roman Catholic Church in western Europe and the Orthodox Church in eastern Europe and Russia. Both branches now sent out missionaries. The European Reformation that began in the 1520s gave rise to numerous Protestant sects but conflicts with the Roman Catholic Church and constant fissures and

schisms prevented them from sending out missionaries in any significant number. Meanwhile the Catholic Church dominated the missionary field, sending Dominicans, Franciscans, Jesuits, and others to the Americas, India, and Asia. Since Protestants entered the mission field in the late 1700s, Christian missionaries have encircled the globe, often accompanying Europe's imperial expansion.

While this discussion has focused on organized forms of Christian foreign missionary activity, it is also true that every Christian is expected to make public witness of his or her faith; in effect, to be a missionary. There are several statements attributed to Jesus in the New Testament that Christians believe call on them to personally spread the gospel. One such statement is found in Mark: "Go ye into all the world, and preach the gospel to every creature" (16:15). Thus, while Christian churches send missionaries abroad, members of their congregations serve the "home" mission.

Islamic Missionaries

"Invite (all) to the way of Your Lord with wisdom and beautiful preaching and argue with them in ways that are best and most gracious. For Your Lord knows the best, who have strayed away from His path" (Qur'an 16:125).

Islam is always described as a missionary religion, it has a universal message, and it has been one of the fastest-growing religions in world history. It now numbers well over a billion members worldwide. There has never been, however, a sustained and organized missionary effort in Islam to spread the message said to have been given by God to Muhammad (c. 570–632) and recorded in the Qur'an.

In the Qur'an there are many suras, or chapters, that can be interpreted as referring to missionary work. Like the earlier examples of the Buddha and Jesus, Muhammad was the first missionary for Islam. His missionary role is described clearly in the Qur'an: "O you prophet, we have sent you as a witness and a herald of good tidings, and a warner, and someone who invites people unto God by His permission, and

as an illuminating lamp" (33:45). But the Qur'an also relates that Muhammad is only the messenger, whose duty is simply to convey the message, not to convert his audience to Islam: "It is not required of you (O Muhammad), to set them on the right path but it is God who guides whom He wills" (2:272). Muhammad is to convey God's message "with wisdom and beautiful preaching," and by arguing "in ways that are best and most gracious." Through these and other verses Muslims believe that they too are obligated to share Allah's message with unbelievers. In Islam, this missionary work is known as *dawah*, and every believer is considered a missionary, whether through example or by proselytizing.

Although, as with Christianity and Buddhism, there are different branches of Islam, every Muslim would agree on certain fundamental beliefs. First among these would be the simple statement of faith: "There is no God but God, and Muhammad is his messenger." To convert to Islam, one need only recite this statement in front of witnesses. Actually, it is believed that every person is born pure and a Muslim, but some become corrupted and therefore each new Muslim is considered a "revert," having gone back to their original faith, rather than a convert. Muhammad is believed to be the last and greatest prophet of God, but not divine in any way. There will be a final judgment day and life after death in heaven or hell. A devout Muslim must also perform the Five Pillars, or duties, which include expressing the statement of faith, giving alms, praying five times a day, fasting during the month of Ramadan, and making a pilgrimage to Mecca at least once in one's lifetime.

Muhammad is said to have received his first revelations from God in 610 CE, and they continued until his death twenty-two years later. Muhammad's wife, Khadijah, was his first convert. By the time of his death Muhammad had acquired several hundred thousand followers and spread Islam across much of the Arabian Peninsula. Within a hundred years Islam was practiced across North Africa as far west as Morocco, north into southern Europe, and east to India.



While it is often argued that Islam spread by the sword (i.e., force), scholars have generally discounted this view. Rather, as Muslim armies conquered they also destroyed opposition. Islam has no clergy per se, only local prayer leaders, scholars, and holy men. Therefore Islam spread behind military conquest and through trade, following the caravan routes across North Africa and Asia, with merchants, travelers, holy men, and bureaucrats as well as soldiers carrying God's message. As they settled in new areas they established Islamic institutions, married locally, and over the decades converts appeared. Only in the past century, as Muslims have come under increasing pressure from Christian missionaries to convert, have Islamic associations, organizations, and missionary societies been formed to counter Christian efforts.

Outlook in the Twenty-First Century

Missionaries are not easily defined, as the discussion above and the examples from the three major religions illustrate. In reality, every member of every religion is a witness and example for his or her faith. Religions frequently acquire new members in ways that meet few of the conditions set out at the beginning of this essay. Islam has become the second largest religion in the world without, until very recently, any formal missionary effort. Buddhism is spread by simple monks who depend on the charity of lay believers to survive. Many religions carry out very active and passionate missionary work but their converts are few because their message does not seem to have universal appeal.

From the beginning, Christianity has combined both personal witness and intentional mission organization to spread the gospel. Over the past five hundred years Christian missionary efforts have been aided by Western colonialism and domination of technology. In 2004 there were more missionaries than ever before in world history. Christians alone have over 400,000 missionaries spreading the gospel and spend an estimated \$11 billion on foreign missions. At the end of 2009 the Church of Latter-day

Saints (Mormon Church) alone had over 50,000 missionaries serving in some 160 countries. Evangelical Christians have made it their goal to convert the entire world population to Christianity and provide "a church for every people."

And yet it appears that Islam is the fastest-growing religion today, having increased from around 400 million in 1960 to over 1.5 billion in 2009. A significant reason for this growth is the high birthrate in Asia and Southwest Asia. But Islam is also growing in the former Soviet Union, Europe, and the United States through both conversion and immigration. Buddhism is also gaining many adherents in Europe and the United States. India is experiencing a Hindu revival and many Native Americans, Africans, and other groups are recovering their traditional religions.

As the global village becomes more of a reality, the difference between home and foreign mission will lose all meaning. As transportation and communication become more accessible to the world's peoples, individuals will be able to choose their religious faith more easily than at any time in human history. A simple search on the World Wide Web reveals that in many ways, the Internet is becoming the missionary of the future. In the end, however, it will still be the single believer who brings others to his or her faith, as did the Buddha, Jesus, and Muhammad.

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See also Buddha; Jesus; Muhammad; Paul, Saint; Ricci, Matteo; Thomas Aquinas, Saint

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To convert somebody, go and take them by the hand and guide them. • Saint Thomas Aquinas (1225–1274)

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Mississippian Culture

At the end of the first millennium CE, the Mississippi River valley of North America was the scene of tremendous social and political transformations, resulting in the creation of what archaeologists identify as a Mississippian culture comparable to other complex societies across the globe.

The Mississippian period (c. 1000–1600) in the Mississippi River valley of North America is distinguished by characteristics found worldwide in complex societies: large population aggregations (in the case of the Mississippian culture, some verging on urban centers), monumental architecture, an intensive agricultural base, hierarchical political and social organization, ethnic diversity, and a rich array of accompanying political and religious iconography.

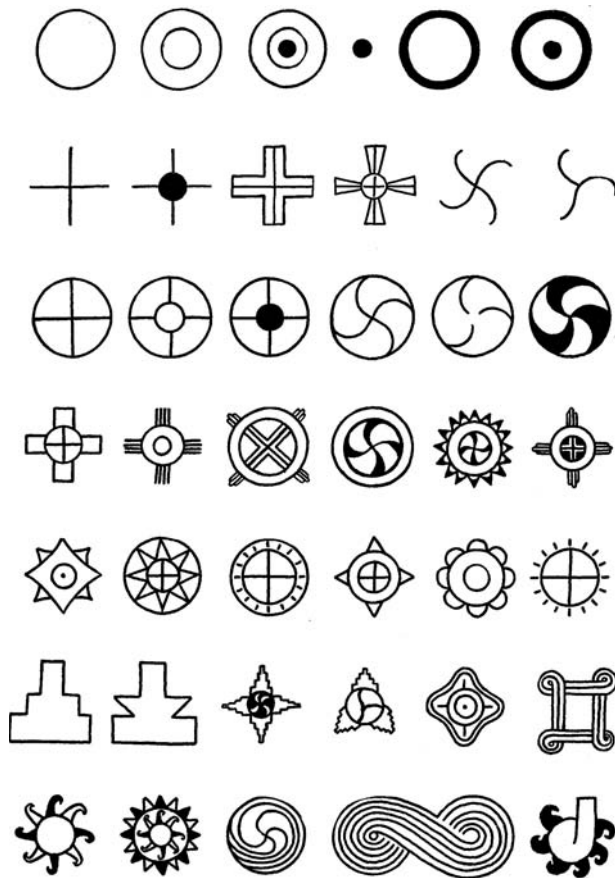
Commonalities

Mississippian material culture and technology, while it differed in detail, shared many similarities with other Neolithic-stage societies. Mississippians lived in large, permanent, often fortified villages that contained from a few hundred to many thousand residents. Some villages enclosed large earthen ceremonial mounds arranged around plazas and are considered specialized civic-ceremonial centers. Such centers served as the ritual and political focus for widely dispersed populations as well as being the residences of ruling chiefs and nobles. War and fertility were both important symbolically. A rich iconography involving depictions of mythic creatures of the sky and underworld played an important role in Mississippian religion.

Maize and native domesticated plants provided the primary subsistence base, but wild animals, especially fish and deer, were important supplements. Villagers hunted, fished, and fought with the bow and arrow. Chipped chert hoes and digging sticks were the main agricultural implements used to farm the large floodplain fields. Pottery manufacture and design peaked with the production of thin, shell-tempered ceramics (made from clay containing crushed clam shells) that were often painted or crafted as elaborate animal or human effigies. The vast majority of raw material needs were obtained from nearby sources. However, a limited number of materials, such as seashells, copper, and mica, were brought from distant sources for consumption by the elites.

Origins

The core geographical region of Mississippian development was the Mississippi River valley and the area around its tributaries, stretching from Illinois south to Arkansas. Mississippian societies subsequently reached north to Wisconsin, west to Oklahoma, south to Louisiana, and east to Florida. In the late nineteenth century when archaeologists first began uncovering Mississippian sites, they assumed a central origin from which subsequent migrations spread Mississippian culture across the eastern United States. During the 1960s through the 1980s Mississippian culture was reinterpreted as an ecological adaptation confined to large floodplains. In this interpretation similar societies coevolved in locations across eastern North America; the theory abandoned the notion of a central origin and migrations outward. To some degree, archaeologists have come full circle to a new



Design elements used by the Mississippian culture were both simple and sophisticated.

theory of a central Mississippian origin. This shift has been the result of new excavations and analyses at one of the earliest, most impressive and influential centers of Mississippian culture—Cahokia. Located in the American Bottom near St. Louis, this center and adjacent mound centers appear to have served as the catalyst for change across much of the midcontinent over the three centuries of Cahokia's existence (1050–1350).

The emergence of Cahokia predates all other Mississippian centers by almost a century; it is a primate center without peers. Consequently we assume its influence through population movements, religious and political ideology, and military force, all of which were pivotal for the subsequent changes we can document in subsequent Eastern Woodlands societies. These changes are related to the emergence of significant social divisions within society. Archaeological excavations have shown that the large flat-topped mounds were platforms for the homes of the leaders

and the temples of the gods. There was now a segment of society—a nobility—that was intimately associated with spiritual, political, and social power, and that was spatially segregated from those who composed the majority of the population. Nowhere was this separation more clearly indicated than in the Cahokia Mound 72 mortuaries, an elite burial ground where several burials show evidence of a ceremony that involved the sacrifice of hundreds of followers and war prisoners. Mound 72 contains a central tomb with an elite individual covered in an elaborate shell cape. He is surrounded by multiple mass graves including several that contain only the bodies of dozens of young women stacked like cordwood. One mass grave contains the bodies of men and women who have been shot with arrows, axed, and sometimes decapitated and then thrown into a pit in disarray. It is reasonable to suggest that several hundred young women and several dozen others (those violently and brutally killed) were sacrificed as part of the mortuary ceremonies that were associated with the burial of a high-ranking individual. Physical analysis has shown that the young women were less healthy and ate more corn than typical of the elite population suggesting they may have been members of the commoner populations.

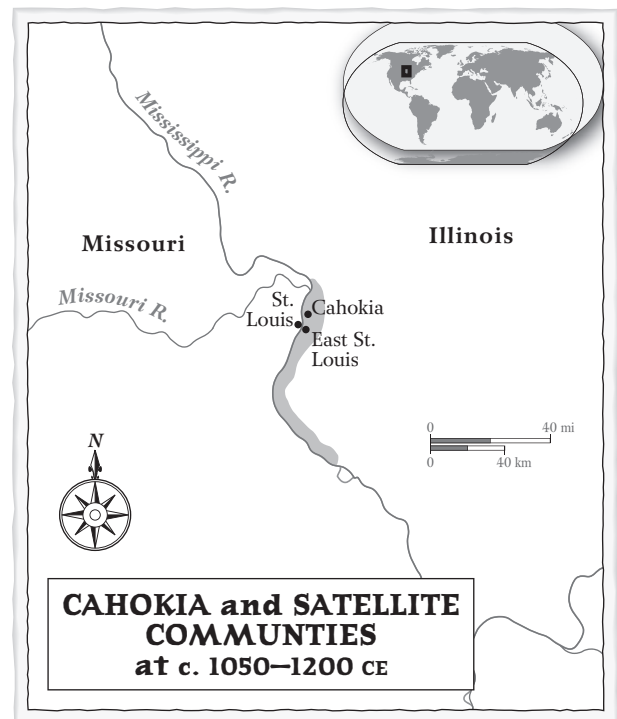
Elite populations and their close kin and followers, based on the archaeology and the ethnographic record, are the primary residents of the massive ceremonial mound centers. The highest ranking individuals live in homes on the top of the flat-topped mounds. Commoner populations may live near or around the edges of such centers as well as spread across the land in small farming communities. This physical separation in living (for example commoners would not normally be allowed into the mound top temples and structures or in the inner elite precincts) is mirrored in death when the role of commoners seemed to be confined to providing the labor to build the elite mortuary mounds and the honor of being sacrificed, especially if you happened to be a wife and daughter. Commoner cemeteries are more dispersed across the landscape and there is some evidence to suggest that a portion of that population's bodies were exposed to

decay rather than buried (a common North American practice). Elite burials also included elaborate shell capes, hundreds of arrows, chunky stones (stone disks that were used in ritual games played in the central plazas of mound centers), mica, and copper.

The leaders of Mississippian chiefdoms such as Cahokia were responsible for organizing large communal feasts and celebrations of religious and political events, a major factor in maintaining group solidarity. They also enhanced and formalized intricate religious rites that included priests, temples, and a rich art that focused on aspects of life renewal, fertility, and, later, warfare. These depictions included some of the most spectacular images produced in native North American arts, such as the red stone goddess figurines of Cahokia. Very likely the same class of nobles were also the war leaders in the numerous conflicts that characterized the Mississippian period.

Cahokia

The highpoint of Mississippian culture, Cahokia, is best viewed as a regional system rather than a settlement. It contained over 120 mounds (including Monks Mound, the largest in North America) and 1.8 square kilometers of inhabited land. It was contiguous with the East St. Louis Mound group of approximately forty-five mounds and habitation areas and immediately across the Mississippi River from the St. Louis Mound group of twenty-six mounds. To put this in a broader perspective, this 13-kilometer linear strip contained three of the four largest mound centers in the Eastern Woodlands region. The archaeologist Timothy R. Pauketat has referred to this continuum of mound, plaza, and habitation zones as a Cahokian “central political-administrative complex.” It formed a corridor that encompassed 14.5 square kilometers and contained nearly two hundred Mississippian platform and burial mounds. Additionally, within 25 kilometers of Monks Mound, there were fourteen other mounded Mississippian centers in the floodplain and the uplands, half of which had multiple mounds. The majority of this monumental construction of platform and mortuary mounds, woodhenges (large circles of



posts that are thought to have ritual and calendrical uses), plazas, borrow pits, and habitation zones occurred during the eleventh to thirteenth centuries. At its height Cahokia controlled an immediate hinterland of over 9,300 square kilometers. In spatial extent and monumental construction Cahokia was equal to other early centers around the world.

Mississippian Influences

Cahokia's influence through political, social, and economic interactions with both its near and distant neighbors had a profound, but uneven, influence on the configuration of the late prehistoric cultural landscape in the Eastern Woodlands. In the thirteenth century Cahokia began to decline and warfare became more prevalent due to the concurrent rise of chiefly political organization throughout the region—a political form that typically incorporated war achievements as a primary role for male advancement in that society combined with the collapse of political and military power at Cahokia. Also at this time, new independent Mississippian centers emerged at such well-known sites as Moundville in Alabama and Etowah in Georgia. These new centers are symbolized by iconography focused on war and on elite achievement, known regionally as the

Southern Ceremonial Complex. The rise of these polities and hundreds of other smaller ones throughout the Southeast created a diverse and contentious political landscape that lasted sufficiently long to be encountered by the early sixteenth- and seventeenth-century Spanish and French explorers.

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Modernity

Modernity is a vexed concept for world historians. Debates about what it means, and whether it can or should be defined in terms of western European standards, have opened the concept to a wider discussion. Especially in conjunction with the term *modernization*, such discussion considers how various peoples—Africans swept up in slave trade and the colonizers who bought and sold them, for instance—experienced modernity and were affected by it.

The concept of modernity has stimulated much debate in world history about its geographical, cultural, historical, and sociological origins. It is historically a nebulous term, extremely difficult to define, both because there is no hard and fast understanding of when the term *modernity* came into widespread use and because there is no clear-cut agreement as to what exactly it is meant to describe. Most would agree that modernity is primarily used to identify a condition of “newness”—whether in terms of an overall zeitgeist (worldview) or innovative advances in technology. Yet pinning down a defining statement of modernity, in order to gain the most complete understanding of it, requires the perspective of its historical development.

Because it is so difficult to identify how exactly modernity came into being, most treatises of the concept begin with an analysis of its etymology, followed by an examination of its cultural significance in a larger context. Many neglect, however, to reveal how tracing the origins of modernity is also to sketch the earliest foundations of the world we live in today, and to provide a more accurate understanding of the global cultural interrelationships that comprise the world.

The Origins of Modernity

Historical debate has begun to question whether or not modernity can actually be said to have had its origins in the western European Middle Ages, which dates range from about 500 CE to approximately 1492 CE. (These dates, as representative of both the beginning and the end of this period, are also in debate, since the Middle Ages can be understood and marked by different events in different cultures.) Notwithstanding this chronological variation—and despite the extremely variegated and complex history of the term as well as its influences, causes, and effects—conventional examinations of the concept of modernity locate its inception in medieval western Europe. This is as a result of the concept’s relation to two overarching developments, as Matei Calinescu describes in his seminal study *Five Faces of Modernity*: (1) the rise of an “awareness . . . of *historical time*, linear and irreversible,” which is also an “*unrepeatable time*,” profoundly related to the “Judeo-Christian eschatological view of history”; and (2) the movement, as a result of this new awareness of time, toward the inevitable comparison between the thought and achievements of the culture of Rome, or pagan antiquity, and those of the Christian Middle Ages, culminating in the late-seventeenth-century “Quarrel between the Ancients and the Moderns” (or the French “*Querelle des Anciens et des Modernes*”). Calinescu grounds his assertion regarding the origins of modernity in an etymological analysis, locating its inception in the increasing use of the word *modernus*, and identifying the foundation of the Quarrel between the Ancients and the Moderns in what he recognizes as the polemical distinction between *antiquus* and *modernus*, in

widespread use by the twelfth century (1987, 13–15). In keeping with the consciousness of a historical, unrepeatable time to which the western European Middle Ages had given rise, the Quarrel between the Ancients and the Moderns was essentially a questioning of authority. In this case, the all-encompassing cultural authority of Christianity, which had saved the European populations from the degradation and destruction following the fall of Rome, was made to give way to the authority of the cultural splendor of pagan antiquity. It is in this way, in its direct challenge to the authority of tradition, and to the authority of the ages, that the concept of modernity acquired its present connotation, as something that invariably represents the new.

Modernity and Modernization

The concept of modernity has often been confused with a companion term to which it is a very closely related—that of modernization. As the western European Middle Ages came to a close at the end of the fifteenth century and the world progressed into the sixteenth century, radical changes in cultural perspective—caused by such events as the discovery of the Americas, the advance of world trade and world travel, the rise of imperialism and colonization, new developments in scientific knowledge, the increased importance of the city, and new understandings of self and place—heralded the advent of modernization. Although it is often mentioned in tandem with discussions of modernity, modernization is much more an umbrella term for a number of sociohistorical, political, and economic changes than it is a description of an ephemeral cultural condition, as is modernity. Modernization, because it is so inextricably connected with change, is also unavoidably representative of the new. By nature of what it is, modernization thus provides the impetus and the foundation for the development and/or recognition of modernity. As the necessary side effect of modernization, then, modernity encompasses the entire range of experience produced by the socio-politico-historical and economic realities of modernization. Modernity



São Paulo's curvilinear Copan Building, built in 1951, was designed by Oscar Niemeyer, Brazil's most famous architect, and remains a monument to Brazilian modernism.

must therefore be understood, in large part, as the cultural condition arising from the dislocations and disruptions brought about by the radical changes of modernization, which is also necessarily at odds with the stasis of tradition.

Modernity: Late 1800s and Early 1900s

In the late nineteenth and early twentieth centuries, this modern movement against tradition finds an important locus in the artistic representation of the condition of modernity, as evidenced by another closely related term—*modernism*. Conventional articulations of the modern and modernism during this time refer to an artistic movement with quite specific characteristics, such as a rejection of artistic tradition, an embrace of experimental form, a fascination

with the meaning and representation of time, and the artistic rendering of the fragmented and alienating reality of modern experience. Such articulations also describe modernism as something that spans a number of western European countries, as well as the United States, manifesting itself in several artistic media, from music, dance, and literature to studio art, sculpture, theater, and architecture. Often overlooked, however, is the manner in which what was identified as “modern” (in the section above on the origins of modernity) splits in this period into two separate yet intricately related spheres. The first, objective or economic modernity, stems directly from the radical cultural change evidenced by the rise of modernization (as manifested in the nineteenth century’s Industrial Revolution and its effects on western European cultural reality); the second, is aesthetic modernity, or the exploration of the relation between objective modernity and its artistic representation. Aesthetic modernity is usually linked with the rise of French symbolism in the late nineteenth century, and its development through the period of World War I (1914–1918) and the cataclysmic alteration of western European and American cultural reality brought about by this event, to the heyday of the 1920s, and the beginnings of concentrated American involvement in the modern trend that had already swept across Europe. Despite their extreme variety and detail, however, conventional articulations of aesthetic modernity tend, if not largely to obscure, then to almost completely ignore the contributions to modern understanding of nonwhite and/or colonized peoples, women, and those outside the western European–American axis. Scholarly discourse has only just begun to address these glaring lacunae, with studies that examine the cultural contributions of these others, as well as the significance of their exclusion to our understanding of the modern. Such studies have opened up many new ways of thinking about the modern, not the least of which is to consider its meaning from new perspectives that, in producing their own versions of modernism, also reconceive more conventional notions of modernity and modernization.

Modernity: A Global Perspective

The relation between modernity and modernization also introduces a less conventional way of understanding the concept of modernity than by locating its origins in the western European Middle Ages. Although many reasons support the assertion that this geographical location is indeed the proper locus from which to derive a cultural understanding of modernity, historical debate has also begun to insist that it is too narrow a view. This becomes all the more important when considering the meaning of the concept from the perspective of world history. Understanding the significance of modernity from a global perspective requires considering what the modern might mean from a number of cultural vantage points, not just that of western Europe. What, for example, does modernity mean from the perspective of the indigenous peoples who were displaced by imperialism’s never-ending quest for new markets, or the cultural emphasis on the growth of empire? When seeking to understand the concept of modernity from a global perspective, it is important to recognize that the western European understanding of time (and therefore its relation to modernity) is not the only one, and that those developments identified as pertaining to modernization and modernity do not come to all peoples at the same time, or in the same way.

A more complex, nuanced, and accurate understanding of modernity must propose the possibility of numerous and interrelated modernities—as a means to gain a more accurate understanding of western European modernity, and as a way to open a path to knowledge regarding the meaning of modernity in other cultural contexts. For example, the rise of imperialism and the growth of empire that began in the fifteenth century, with the discovery of the Americas, led to the development of the Atlantic slave trade and the cultural involvement at different points in time of various European countries (to name just a few, first the Spanish and the Portuguese through the sixteenth century, the French in the sixteenth and seventeenth centuries, and finally the British in the eighteenth century). The millions of Africans who



were dispersed across the New World and beyond as a result of this development, and who thus came to comprise the black diaspora, did not experience modernization and modernity in the same way as did those Europeans who were the authors of imperial expansion. For Africans, modernization and modernity represented an end to autonomous cultural development, and an almost insurmountable barrier to that development, rather than the necessary and inescapable march toward an inevitable, and primarily European, progress. In this instance modernity must represent, first, a deep and painful cultural loss, and second, the long climb back to autonomous cultural life, a climb that must also take place at different points in time and in very different ways in each of the various cultural contexts in which the black diaspora was shaped.

Modernity beyond the “New”

In the early twentieth century, the disintegration of culture long held in place by tradition created a sense of almost dangerous novelty—a “newness” like nothing ever before seen or even imagined. Although other periods (such as the Italian Renaissance of the sixteenth century) also understood themselves as new and, therefore, modern, the early twentieth century seemed to many to mark an even more cataclysmic change than any that had ever come before. In the present day, however, the fantastic cultural changes of a century ago have now become commonplace, and what was once considered radically “new” is no longer a reason to marvel. In fact, the early twentieth century’s cult of the “new” has itself now become a part of our cultural tradition. How then, can modernity be understood at the dawn of the twenty-first century? What does it mean to be “modern,” once the “new” is no longer new? While such questions must necessarily remain as complicated as is the subject with which they are concerned, they are yet appropriate questions to ponder—for the consideration and impact of modernity does not, and cannot, simply end with the end of an era. Perhaps, rather than wondering whether or not our current

understanding of modernity has come to an end (as much current discourse has proposed), we must instead contemplate what it means for one era to be absorbed into another—as each understanding of the new must grow old, and each notion of modernity must be swallowed by another, more urgent articulation of the modern. What was radically new in the early twentieth century cannot enthrall the early twenty-first century. In this age beyond the “new,” modernity is more likely than not to be described in the plural, as manifest in various cultural valences, and the locus of its urgency may now be simply the fight to resolve the problem of cultural understanding and coherence in a global community.

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See also Postmodernism; Progress; Western Civilization

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It is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being. • **John Stuart Mill (1806–1873)**

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Mongol Empire

In the early thirteenth century, an empire arose in the steppes of Mongolia that forever changed the map of Asia, enhanced intercontinental trade, and changed the course of leadership in two religions: at its height, the Mongol Empire was the largest contiguous empire in history, stretching from the Sea of Japan to the Carpathian Mountains.

The rise of the Mongol Empire began with the unification of the Mongol and Turkic tribes that inhabited the Mongolian steppes in the thirteenth century. Its immediate impact on the geography, trade, and religion cannot be overlooked, nor should its influence in later eras be ignored.

The Rise of Chinggis Khan

Temujin (c. 1162–1227), who was eventually given the honorific Chinggis Khan, emerged on the steppes as a charismatic leader, slowly gaining a following and a reputation before becoming a *nokhor* (companion or vassal) to Toghril (d. 1203/1204), the khan of the Kereits, another tribe. While in the service of Toghril, Temujin rose in power and became a major leader among the Mongol tribes. Eventually, however, Temujin and Toghril quarreled; when the quarrel came to a head in 1203, Temujin emerged victorious.

Afterwards Temujin continued to fight other tribes for dominance in the Mongolian steppe. By 1206 he had unified the tribes of Mongolia into a single supatribe known as the Yeke Mongol Ulus, or Great Mongol Nation. He reorganized Mongol social structure and dissolved old tribal lines. Furthermore, he

organized his army on a decimal system (units were organized into tens, hundreds, thousands, with the largest grouping at ten thousand) and instilled a strong sense of discipline into it. (For example, troops learned not to stop and plunder the enemy camp before victory was assured; under Temujin's rule any booty gathered before victory was declared would be confiscated.) Finally, in 1206 Temujin's followers recognized him as the sole authority in Mongolia by granting him the title of Chinggis Khan (or, traditionally in English, Genghis Khan), which is thought to mean Oceanic, or Firm, Resolute Ruler.

Expansion of the Mongol Empire

The Mongols expanded out of Mongolia, conquering Xi Xia (modern Ningxia and Gansu provinces of China) by 1209. In 1211 Chinggis Khan invaded the Jurchen Jin dynasty (1125–1234) of northern China. Initially, these were not campaigns of conquest; they were raiding activities. But as their successes grew, the Mongols began to retain the territory they plundered. Although the Mongols won stunning victories and conquered most of the Jurchen Jin by 1216, the Jin continued to resist the Mongols until 1234, seven years after the death of Chinggis Khan.

Mongol expansion into Central Asia began in 1209 as the Mongols pursued tribal leaders who opposed Chinggis Khan's rise to power. With each victory the Mongols gained new territory; additionally, several smaller states sought to become vassals. Ultimately, the Mongols found themselves with a large empire, now bordering not only the Chinese states but also the Islamic world. In Central Asia, they now bordered the empire of Khwarizm, whose



Portrait of Khubilai Khan, grandson of Chinggis Khan, the founder of the Mongol Empire.

territory included Central Asia, Afghanistan, Iran, and part of modern Iraq.

Initially, Chinggis Khan sought peaceful relations focused on trade with Khwarizm. However the massacre of a Mongol-sponsored caravan by the governor of Otrar, a city in Khwarizm, changed this relationship. After diplomatic means failed to resolve the issue, Chinggis Khan left a token force to maintain military operations in northern China and marched against Khwarizm in 1218.

After capturing Otrar, Chinggis Khan divided his army and struck Khwarizm at several points. With his army spread across the empire in an attempt to defend its cities, Muhammad Khwarizm Shah II could not compete with the more mobile Mongol army in the field. Thus he watched his cities fall one by one until he had to flee with a Mongol force in pursuit. Ultimately Muhammad died from dysentery on an island in the Caspian Sea. Although his son, Jalal ad-Din, attempted to defend what is now Afghanistan, Genghis Khan defeated him near the Indus River in 1221, forcing Jalal ad-Din to flee to India.

Although he destroyed Khwarizm, Chinggis Khan kept only the territory north of the Amu Dar'ya River so as not to overextend his army. Meanwhile, he returned to Mongolia in order to deal with a rebellion in Xi Xia. After resting his army, he invaded Xi Xia in

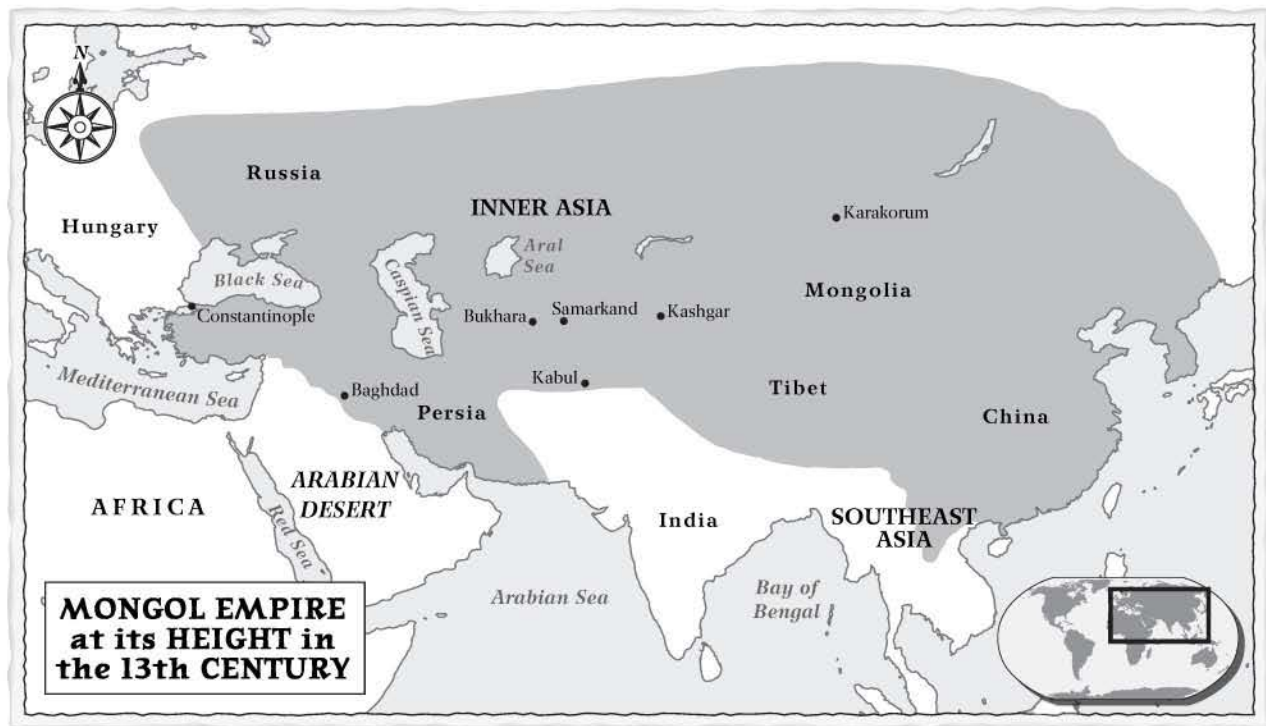
1227 and besieged the capital of Zhongxing. He died during the course of the siege but ordered his sons and army to continue the war, which they did.

The Mongol Empire after Chinggis Khan

Ogodei (1185–1241), Chinggis Khan's second son, ascended the throne in 1230. He continued operations against the Jin and successfully conquered it in 1234. Mongol forces also invaded Iran, Armenia, and Georgia during Ogodei's reign, bringing those regions under control. Meanwhile, a massive force marched west, conquering the Russian principalities before invading Hungary and Poland. While they did not seek to control Hungary and Poland, the Mongols left both areas devastated before departing, possibly due to Ogodei's death in 1241.

Ogodei's son Guyuk (d. 1248) came to the throne in 1246 only after a lengthy succession debate. In the interim, Guyuk's mother served as regent. Guyuk died two years after taking the throne; his wife then served as regent, but did little to assist in choosing a new khan, which led to a coup in 1250 by Mongke (1208–1259), the son of Chinggis Khan's fourth son. During his reign Mongol armies were once again on the march. He and his brother Khubilai (1215–1294) led armies into the Southern Song dynasty (1127–1279) while Hulugu (c. 1217–1265), another brother, led an army into the Middle East.

In 1256 Hulugu's forces successfully destroyed the Ismailis, a Shiite group in northern Iran. He then moved against the Abbasid caliphate in Baghdad. The caliph, nominally the leading religious figure in Sunni Islam, refused to capitulate but did little to defend the city. The Mongols sacked Baghdad and executed the caliph in 1258, ending the position of caliph for several centuries. Hulugu's armies also invaded Syria, successfully capturing Aleppo and Damascus. Hulugu withdrew the bulk of his army in 1259–1260, however, after receiving news that Mongke had died during the war against the Song. Meanwhile, the Mamluk sultanate of Egypt struck the Mongol garrisons in Syria and defeated them at



Ayn Jalut in 1260. The Mongol Empire spiraled into civil war after the death of Mongke, and Hulugu was never able to recover the Syrian conquests for the long term, as he was preoccupied with his rivals in the rest of the empire.

Khubilai eventually prevailed (in 1265) in the civil war, but the damage to the integrity of the empire was great. While the other princes nominally accepted Khubilai as the leader of the empire, he had very little influence outside Mongolia and China. Khubilai and his successors, known as the Yuan dynasty (1279–1368), found their closest allies in Hulugu and his successors. Hulugu's kingdom, known as the Il-Khanate of Persia, dominated the territory of present-day Iran, Iraq, Turkey, Armenia, Azerbaijan, and Georgia. Central Asia was ruled by the descendants of Chagatai (d. 1241), Chinggis Khan's third son. Meanwhile in Russia and the Russian steppes, descendants of Jochi (d. 1225?), Chinggis Khan's first son, held power. Their state became known as the Golden Horde.

The Mongol Empire in World History

The impact of the Mongol Empire on world history is incalculable, especially in geography, trade, and religion.

Geography

In terms of geography, both physical and human, the Mongol expansion forever changed the face of Asia. The change began in Mongolia. Prior to the Mongol Empire, the inhabitants of that region were members of many disparate tribes. Under Chinggis Khan, all of the tribes were united into one new collective unit. Furthermore, tribal identities were stripped away as old tribal elites were dispensed with and a new social organization was forged that focused on the family of Chinggis Khan. The Mongolian nation of the modern era exists today because of the rise of the Mongol Empire. Chinggis Khan also unified the Mongol tribes through the imposition of a written language. Having seen the value of writing among the Naiman, one of the tribes he defeated in 1204, Chinggis Khan ordered that a Mongolian script be instituted. This script was adapted from the Uygur script, itself based on Syriac, brought east by Nestorian Christian missionaries. It remained in use in modern Mongolia until the twentieth century, when it was replaced with a Cyrillic script; it is still in use in the Inner Mongolian Autonomous Region of China.

The Mongol expansion also caused the movement of other tribes, primarily Turkic. While some moved into Hungary and the Balkans, as well as Syria, many

moved into Anatolia (modern-day Turkey). A strong Turkic presence existed in Anatolia since the eleventh century, but the new influx of Turks eventually led to the Turkification of the region. One of the groups that moved into the region was the Osmanli, who established the Ottoman Empire in the fifteenth century.

Other groups also emerged from the Mongols. Later Turkic peoples, such as the Tatars of Crimea and Kazan, the Kazakhs, and the Uzbeks, trace their origins to the Mongols who settled the territories of the Golden Horde. The Tatars were direct offshoots from the collapse of the Golden Horde in the later fifteenth century. The Uzbeks, named after a ruler of the Golden Horde during its golden age, also came from the Golden Horde. The Kazakhs split from the Uzbeks and remained a primarily nomadic people until the twentieth century, whereas the Uzbeks settled in the more urban areas of Central Asia in the sixteenth century. For a brief period they established an empire that was a contemporary of the Ottoman, Safavid, and Mughal empires. The Mughal Empire itself gained its name from the Persian word for Mongol. Its founder, Babur (1483–1530), was a descendent of the Central Asian conqueror Timur (1336–1405), who traced his lineage back to Genghis Khan.

While new groups were formed from the Mongol armies and the Mongol invasions set off a number of migrations of nomads across Eurasia, the Mongols also caused a tremendous amount of destruction. Although much of the data in the sources concerning the number of people killed during the Mongol conquests is exaggerated, those exaggerations do reflect the reality that thousands died, and the Mongols were not above depopulating an area if it suited their purpose.

Trade

From the beginnings of the Mongol Empire, the Mongol Khans fostered trade and sponsored numerous caravans. The very size of the Mongol Empire encouraged the wider dissemination of goods and ideas throughout Eurasia, as merchants and others could

now travel from one end of the empire to another with greater security.

The fact that virtually a whole continent was under one rule helped make it possible for inventions such as mechanical printing, gunpowder, and the blast furnace to make their way west from China. In addition, commodities such as silk could be purchased at lower prices because cost of travel and security decreased thanks to the Pax Mongolica afforded by the Mongol Empire. Artistic ideas, sciences such as astronomy, and medicinal ideas also traveled back and forth. China, for its part, was enriched by outside influences in art, theater, and by advances in science and medicine as well.

Religion

The central importance of Chinggis Khan in the Mongol Empire cannot be ignored. As descent from Chinggis Khan became a key component in establishing one's right to rule throughout much of central Eurasia, it had a considerable impact on rulers. Russian princes in Muscovy and Central Asian rulers alike often forged their genealogies to connect themselves to Chinggis Khan, much as some Muslims forged genealogies to connect themselves to the Prophet Muhammad. In Mongolia, the principle of descent from Chinggis Khan had a dramatic impact on religion.

Virtually all of the elite in Mongolia could trace their lineage back to Chinggis Khan, which made it difficult for one prince to assert primacy over others and become the leader of the majority of the Mongols. Thus, princes had to find other ways of legitimizing power. Altan Khan (1543–1583) did this by establishing ties with the leader of the Yellow Sect in Tibetan Buddhism, who was bestowed with the title of Dalai Lama, and, with the aid of Altan Khan, became the preeminent figure in Tibet. This courtship of Buddhist figures also led to the conversion of Mongolia to Buddhism in the sixteenth century.

The Mongols' destruction of the Abbasid caliphate had significant consequences for religion as well. The caliph was meant to be the spiritual, and, if

possible, political leader of the entire Islamic world, although even prior to the rise of the Mongols, this was an ideal more than a reality. After the Mongol conquest, although several rulers maintained the presence of a puppet caliph, the institution was not revived with any credible authority until the nineteenth century, when the Ottoman sultan also served as the caliph. The result was a decentralization of Islamic authority in the centuries following the defeat of the Abbasids.

Further Implications

The establishment of the Mongol Empire in many ways marked a crossroad in world history. As the largest contiguous empire in history it united Eurasia in a fashion that has not been repeated. Actions within the empire inevitably rippled across the rest of Asia and Europe, whether through trade, warfare, or religious affairs. Furthermore, because it ended several previous dynasties and instigated the creation of new power centers, the Mongol Empire may be viewed as a catalyst for significant geopolitical change.

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See also Chinggis Khan; Steppe Confederations; Warfare—Steppe Nomads

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Moses

(C. 13TH CENTURY BCE)

HEBREW PROPHET AND LEADER

Moses, the Hebrew prophet and leader, figures prominently in biblical accounts of his people. Yahweh, the Hebrew God, charged Moses with freeing the Hebrews enslaved in Egypt and leading them to Canaan, the land promised to their ancestors. Moses also consulted Yahweh and instituted the Decalogue and Covenant Code, both of which would prove to be major elements in establishing the Israelites' culture and religious practices.

The prophet Moses, leader of the Hebrews and one of the Bible's most renowned figures, began his life in Egypt during a difficult time for his people. The reigning pharaoh, who some scholars suggest may have been Ramses II or Seti I, felt that the Hebrew populace had become too large and decreed that every Hebrew male child be killed at birth. Moses was born in the midst of this compulsory genocide, but with the aide of his sister, the pharaoh's daughter, and two defiant midwives, he survived. Three months after his birth, Moses' mother crafted a papyrus basket and plastered it with bitumen and pitch. She then carefully placed Moses and the basket in the Nile River; his sister stood at a distance to watch what would happen. The daughter of the pharaoh saw the floating container and had her maid bring it to her. After discovering the child, she took pity on him, and requested that a Hebrew woman come and serve as his nurse. Ironically, the woman chosen for this task was Moses's mother. Moreover, she was able to rear

him in the household of the pharaoh who desired to kill him.

This special birth motif is a common theme in stories found throughout the Near East and in cultures around the world. The theme often introduces people, primarily men, who amazingly avoid death during their infancy or are born miraculously to mothers who are barren. Subsequently, the children become great leaders. One example of note from the neighboring Mesopotamian culture is the legend of Sargon. According to Akkadian writings, the mother of Sargon of Agade also made a basket sealed with pitch after the birth of her son. She placed the infant in the basket and let it sail down the Euphrates River. Akki, the drawer of water, discovered baby Sargon and reared



A drawing of Moses copied from the catacombs at the Basilica of St. Agnes outside Rome.

Let me tell you something that we Israelis have against Moses. He took us 40 years through the desert in order to bring us to the one spot in the Middle East that has no oil! • Golda Meir (1898–1978)



Sir Lawrence Alma-Tadema, *The Finding of Moses* (1904). Oil on canvas. Alma-Tadema was renowned for fanciful representations of classical antiquity. In this painting, which depicts a caravan carrying Moses in his papyrus basket from the Nile, the artist included archaeologically precise details and inscriptions.

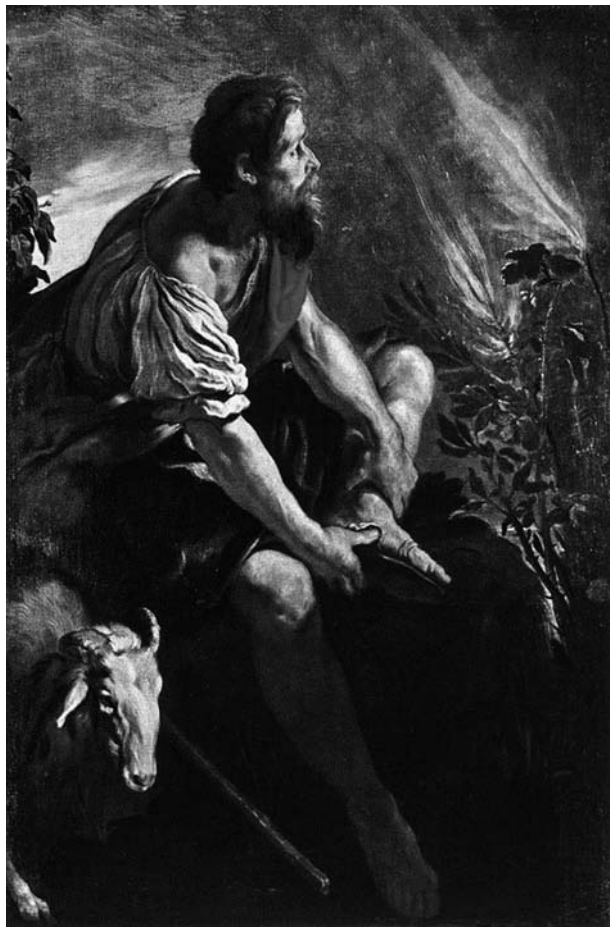
him; the goddess Ishtar protected him, and Sargon became a successful king.

Although Moses did not become a king, he lived his youthful years in the home of the ruling pharaoh. Here Egyptian teachers educated him, and he learned the intricacies of Egyptian culture. However, the biblical writers explain that Moses was very much aware of his Hebrew ethnicity. For example, he murdered an Egyptian whom he saw beating a fellow Hebrew. But because someone witnessed his crime, Moses had to leave Egypt immediately in order to save his life.

Shortly after his departure, he encountered Yahweh, the Hebrew God, for the first time. He was now married to Zipporah, the daughter of Jethro, a Midianite priest. While walking his father-in-law's flock on Mt. Sinai, he witnessed a bush that burned without

being consumed. Yahweh spoke to Moses from the bush and charged him to return to Egypt, liberate the Hebrews, and lead them to a land that had been promised to their ancestors.

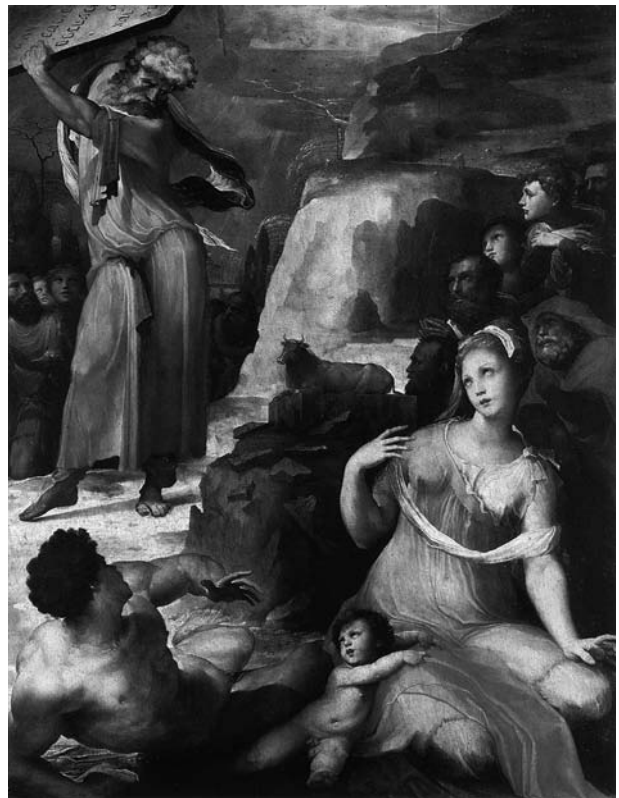
With the assistance of his brother Aaron, Moses confronted the pharaoh regarding the release of the Hebrews. The process was taxing, as the pharaoh refused his numerous requests. Thus, the writers describe how Moses, with the hand of Yahweh, instituted ten plagues, some of which brought darkness upon the land, a cacophony of frogs, locusts, excruciating boils, and damaging hail. However, the tenth and final plague, the death of all of the Egyptians' firstborns, was the zenith of this battle of wills. This act, without question, reflects the Hebrew genocide that Moses narrowly escaped during his birth. There



Domenico Feti, *Moses before the Burning Bush* (1613–1614). Oil on canvas.

are continuing scholarly debates regarding the exodus from Egypt, the route(s) taken, and the famous parting of the sea, but most agree that the event would have happened at the Red Sea.

Once the Hebrews safely left Egypt, Moses and Aaron began their trek to the Promised Land. The journey led them through the wilderness for forty years. During this time, there were problems with apostasy, grumblings regarding the conditions during the journey, and disagreements among the leadership. Yet Moses consulted Yahweh and instituted the Decalogue and Covenant Code, both of which would prove to be major elements in establishing the Israelites' culture and religious practices. Sadly, the brothers were not permitted to enter the Promised Land. Nevertheless, Moses—as the prophet, the liberator, and



Domenico Beccafumi, *Moses and the Golden Calf* (1536–1537). Oil on wood. Duomo, Florence.

the spiritual leader—is responsible for the Hebrew Exodus and the victorious trek to Canaan. There are no contemporary extra-biblical writings that reference Moses or the Exodus. But most scholars argue that the biblical sources are well constructed and that later authors would have been unable to create such an individual as Moses.

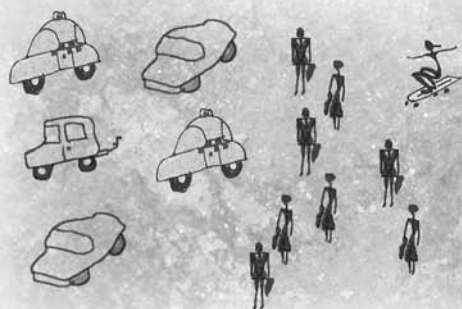
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See also Judaism

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Motecuhzoma II

(1467–1520)

EMPEROR OF PRE-SPANISH MEXICO

Motecuhzoma II was emperor of the Triple Alliance (Aztec Empire) at the time of the Spanish conquest of Mexico. Although a strong king with numerous accomplishments, Motecuhzoma II has been burdened with an undeserved reputation as a weak and ineffectual opponent to the conquering Spaniards.

When the Spanish conquistador Hernán Cortés came to Mexico in 1519, Motecuhzoma II was the emperor of the Triple Alliance (Aztec Empire). Born in 1467 into the royal family of Tenochtitlán, the dominant city in the alliance that ruled the empire, Motecuhzoma II was called Motecuhzoma (Angry Lord) Xocoyotzin (the Younger) to distinguish him from his great-grandfather, the king Motecuhzoma Ilhuicamina (An Arrow Pierces the Sky), also known as Motecuhzoma I.

Succession in the Tenochtitlán dynasty passed among male members of the royal family as determined through election by a royal council upon death of a king. By 1502, when the emperor Ahuizotl died, his nephew Motecuhzoma II (grandson of the emperor Axayacatl) had distinguished himself in battle and was an obvious choice for the throne. Native historical accounts are unanimous in their praise of Motecuhzoma II's qualities. For example, the *Codex Mendoza* (a postconquest history written in the ancient style) describes his "bravery and leadership in war" and goes on to describe him as follows: "Motecuhzoma was by nature wise, an astrologer, a philosopher, and skilled in all the arts, civil as well as military. His subjects greatly respected him because of his gravity, demeanor, and power; none of his predecessors, in comparison, could approach his great

state and majesty" (Codex Mendoza, folio 14 verso; Berdan and Anawalt 1992, vol. 4:34).

During his reign (1502–1520) Motecuhzoma II led wars of conquest to consolidate the distant provinces of the empire. He worked to concentrate power in the hands of the top nobility at the expense of commoners. Whereas Ahuizotl had permitted talented commoners to occupy important offices, Motecuhzoma stripped these commoners of their titles and decreed that only members of the top nobility could hold high office. Nigel Davies calls this "a definite step in the direction of an absolute monarchy" (Davies 1973, 216). He also carried out a series of religious and calendrical reforms to help claim supernatural support for his political agenda.

In 1519, Hernán Cortés and a band of several hundred Spaniards landed in Mexico. Motecuhzoma did little to fight the Spaniards, who were able to enter Tenochtitlán without opposition. Cortés took the king hostage, and he was soon killed. Native sources state that the Spaniards killed Motecuhzoma, whereas Spanish sources state that he was killed by an Aztec mob that was assaulting the palace where he was held.

One of the central "mysteries" of the Spanish conquest of the Aztecs is Motecuhzoma's failure to oppose Cortés more vigorously. Why did the king not send his armies—with tens of thousands of experienced troops—to fight Cortés? One interpretation blames the Aztec king for indecisiveness and vacillation. According to this view, the king was frozen in uncertainty and therefore permitted Cortés to enter Tenochtitlán unopposed. This popular view of Motecuhzoma as an indecisive and weak leader, however, is contradicted by his history as emperor between 1502 and 1519.



Antonio Rodriguez, *Portrait of Motecuhzoma II* (c. 1680). Museo degli Argenti, Florence, Italy.

According to recent scholarship, indigenous nobles and Spanish Franciscan friars in the decades after the conquest conspired to invent reasons for Motecuhzoma's hesitation. One such reason was the dubious notion that Motecuhzoma believed Cortés to be the god Quetzalcoatl returning to reclaim his kingdom. A related reason was a series of omens throughout his reign that supposedly alerted Motecuhzoma to his impending doom. These stories "explained" Motecuhzoma's behavior and allowed the surviving colonial-period Aztec nobility to make sense of the conquest. These stories also helped the Spanish friars promote the notion that the conquest was preordained by God in order to bring Christianity to the New World. Many authors of works about the conquest of the Aztecs—particularly the influential books by Prescott (2000; first published in 1843) and Thomas (1993)—have accepted these stories at face value. Revisionist scholarship, however, indicates that these stories were myths invented in the sixteenth century, and identifies other factors that explain Motecuhzoma's actions in a more satisfactory fashion.

The actions of Motecuhzoma in fact indicate that he followed the advance of the Spaniards closely and attempted to have his subjects defeat them along the way (most notably at Cholula, where a planned ambush turned into a massacre of Aztec troops). He ultimately let the Spaniards into Tenochtitlán only as a last resort after recognizing their huge military and technological superiority. In Aztec diplomacy, a ruler who submitted peacefully to a conquering army secured a lower tribute quota and milder treatment for his people than a ruler who openly opposed the imperial troops. Motecuhzoma's failure to oppose Cortés more vigorously may have arisen from an attempt to secure better treatment for his subjects under the Spanish crown. Regardless of the actions of Motecuhzoma, however, the final Aztec defeat was assured by the introduction of smallpox and its devastating effects on the native population.

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See also Aztec Empire

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Mountains

Mountains evolved as havens of bio- and cultural diversity and have long been associated with indestructibility, ruggedness, and characteristics hostile to human endeavors. Until the U.N. designated 2002 the International Year of the Mountain, environmentalists ignored the fragility of mountain regions. Poor, indigenous mountain peoples, victimized by central governments, often have little choice but to overexploit their environment, and are threatened by warfare ubiquitous in many mountainous lands.

The word *mountains* may conjure up an image of gigantic rock precipices, sharp peaks, glaciers and snow—and a team of grim-faced mountaineers, roped together, risking avalanches, rock falls, and blizzards in their arduous upward progress—the sort of scene one might see in the upper sections of the Alps or the Himalayas, or in the many other dramatic high landscapes of the planet. But that scene represents only a small fraction of our mountain environment. While there has been much debate among academics over how to define *mountain*, no simple statement has evolved. The people of Wales and northwestern England would insist that they live among mountains, yet their highest summits barely exceed 1,000 meters (about 3,280 feet) above sea level. Nomads of Tibet or agricultural peasants of southern Peru who live 4,000 meters (more than 13,120 feet) above sea level would be classified as mountain folk, yet their local landscapes may be as flat as the North American prairies.

Nevertheless, a varying combination of high altitude and steepness of slope make for short growing seasons and slow soil formation processes. The

variation in average annual temperature with altitude and latitude has combined to give the Lofoten Islands of North Norway, close to sea level and 70° north, and the upper reaches of the Swiss Alps, above 2,000 meters and 46° north, similar landscapes, referred to as “alpine.” Both are above the limits of tree growth (timberline) and have been molded by glaciers. In contrast, locations at high altitudes (above 3,500–4,000 meters, or roughly 11,500–13,120 feet) that are close to the equator, such as in Ethiopia, Kenya, or Ecuador, with rather rounded landforms, may support flourishing agriculture. Carl Troll (1900–1975), the famous German mountain geographer of the twentieth century, remarked that above 3,000 meters (about 9,850 feet) in Indonesia, for instance, there are high mountains without a high mountain (alpine) landscape.

In its efforts to ensure a critical assessment of the importance of mountains to sustainable human progress, the United Nations adopted a pragmatic approach in its declaration of 2002 as the International Year of Mountains (IYM), claiming that mountains occupy about 20 percent of the world’s terrestrial surface and provide the direct life-support base for about 10 percent of humankind. Indirectly, in terms of their resources, such as provision of more than half of all fresh water, forest products, minerals, grazing lands, and hydropower, mountains are vital to the survival of over 50 percent of the total population. Furthermore, mountains have provided the spiritual essence of all major and many minor religions. Second only to coastal areas, they are the major focus of tourism, the largest and most rapidly expanding industry in the world. Mountains shelter some of the world’s most important centers of biodiversity



People living near the Pamir Mountains in Tajikistan call them both “the roof the world” and “the feet of the sun.” Photo by Jack D. Ives.

and a large share of its cultural diversity. Finally, climate change, especially the currently anticipated global warming, would have some of its earliest and most noticeable effects in mountain regions. It follows that mountains are becoming a serious object of concern.

Geographical Distribution of Mountains

Mountains are found on every continent, from the equator to the poles as far as land exists. Taken together as a single great landscape category or ecosystem, they encompass the most extensive known array of landforms, climates, flora, and fauna, as well as human cultural diversity. From a geological and tectonic point of view they comprise the most complex of the Earth’s underlying structures.

Mountains and uplands incorporate the inhuman and extremely cold and sterile high ice carapaces of

Antarctica and Greenland as well as the high, dry, hypoxic, and almost uninhabitable ranges of Central Asia and the south central Andes. They also include richly varied and even luxuriant ridge and valley systems of the humid tropics and subtropics, such as the eastern Himalayas, the Hengduan Mountains (Yunnan, China), Mount Cameroon, sections of the northern Andes, and parts of New Guinea. In east Africa and Ethiopia, the flanks and valleys of the high mountains have long been the preferred human habitat compared with the arid lowlands that surround them. An enormous array of other mountains must be included—for instance, the high volcanoes of the Caribbean and Central America, Indonesia, Japan, and Hawaii, where humans have long benefited from access to rich soils regardless of exposure to extreme fiery hazards. So-called middle mountains (German: *mittelgebirge*) range from Tasmania to South Africa and from central and northern Europe to the Urals and Siberia. While the Urals contrast with the Alps

Multiple hand-built terraces and rice paddies in the Nepal Middle Mountains east of Kathmandu are a remarkable feat of engineering; the irrigation system demonstrates how indigenous peoples prove to be outstanding soil conservationists. Photo by Jack D. Ives.



(the epitome of “high mountains,” German: *hochgebirge*) because of their more subdued relief, their other mountain attributes warrant special policies to ensure sustainable resource use and preservation of their traditional landscapes.

The high mountains of the world are associated with the most recent, or Tertiary to present, geological period of mountain building resulting from movement of the Earth’s tectonic plates. This has established two great systems of mountain ranges: the circum-Pacific and the transverse Atlas-Pyrenees-Alps-Caucasus-Hindu Kush-Himalaya-Indonesian arc. Collectively they form the loci of most of the world’s active volcanoes and the majority of seismic epicenters (earthquakes). Mountains are dangerous places to live, given the combination of gravity, steep slopes, often very high levels of precipitation, tectonic disturbance, and volcanic activity. Many mountain regions are also dangerous because of the actions of people.

Changing Attitudes Toward Mountains

Try to picture the classical image of a mountainous landscape: the physical characteristics, together with relative inaccessibility and remoteness from the mainstreams of world society, provide images of indestructibility, ruggedness, and hostility to most human endeavor. Yet these same characteristics over a long timeframe have led to unparalleled biodiversity and cultural diversity. Mountain communities evolved in semi-isolation, developing and preserving local languages, costumes, customs, and intricately adapted farming and grazing practices. They frequently retained high levels of independence. The independence of mountain communities, however, was bought at a price: hard physical labor for survival, the risk of natural hazards, and periodic forced out-migration as population growth depleted local resources.



A young Lisu woman, a member of a hill tribe living in northern Thailand. Photo by Jack D. Ives.

Many mountain communities became famous as providers of fiercely effective mercenaries for the national armies of lowland powers. For example, the Swiss mountain contingents contributed to many pre-modern European armies, a surviving remnant being the Vatican's Swiss Guard. More recently, during two world wars and the Falkland Islands campaign, the Gurkhas of Nepal won international fame. They continue to supply contingents to the Indian and British armies.

Prior to the early twentieth century, remoteness, lack of "modern" communication links, and low population densities led to mountain regions being established as buffer zones with only roughly surveyed frontiers between powerful lowland-based empires. Those imperial conflicts and compromises left many present-day states with irrational frontiers, such as those possessed by Afghanistan—a nineteenth-century product of the rivalry between the British Empire and imperial Russia. This has frequently led to major political and military problems and insurgencies for

which the world as a whole is paying a disastrous price today.

As far as the affluent West was concerned, until the last decades of the twentieth century, mountains were virtually the preserve of mountaineers and tourists, especially winter-sport enthusiasts and warmer-season trekkers, and a relatively small number of scientists. The people who lived and made their livelihood in the mountains were largely ignored.

In Europe, as nations industrialized and modernized during the nineteenth century, roads and railways were built, and the first waves of affluent tourists and mountaineers began to penetrate the Alps, bringing with them money. In the twenty-first century we think of Switzerland and Austria as regions of great wealth, but national government policy recognizes that mountain agriculture, essential to the conservation of the beauty that makes the mountains a tourist attraction, depends upon heavy subsidy. In this sense a broad division can be made between the development of mountain regions in the

Climb the mountains and get their good tidings. • John Muir (1838–1914)

industrialized countries and those of the developing world—the difference being that industrialized countries have money to help preserve the scenic nature of the mountains whereas developing countries focus on exploitation. A further subdivision must be made between mountain regions of the Old World (Europe) and those of the New World (the North American West, New Zealand, and Australia). In contrast to the European Alps, for example, that have a very long history (pre-Roman) of settlement and environmental adaptation, mountain regions of the New World have experienced colonization and development only very recently (from about the mid-nineteenth century).

Globalization has spread mass tourism from industrial countries into selected areas of the mountain regions of developing countries. Where tourism, especially mountaineering and trekking, has selectively penetrated parts of the developing world's mountain regions, it has brought about significant change. Tourism does bring increased wealth, but very selectively, and most of the commercial profits go back to the industrialized countries as investment profits. The recent, similar “moneyed” approach of nouveau riche Chinese entrepreneurs is having a parallel impact on “within-country” regions, such as northern Yunnan Province in China's scenic southwest

Tourism can and has caused serious disruption to local cultures. (The outstanding example is the Mount Everest region of Nepal, whose inhabitants, the Sherpas, have become relatively affluent.) The 1970s and 1980s recognized the growing need to preserve the Alps and to avert (perceived) imminent environmental catastrophe in the Himalayas. In the Alps, uncontrolled growth of two-season tourism threatened the traditional mountain landscape, although staunch Swiss and Austrian democratic processes have tempered that threat. In the Himalayas massive deforestation was blamed on “ignorant” mountain subsistence farmers; their rapid population growth (Nepal, for instance, at 2.7 percent per year) and their dependency on the forests for construction materials, firewood, and fodder, led to the assumption that the (perceived) impending environmental collapse was due entirely to imprudent indigenous land use on the

mountain slopes. Furthermore, increased numbers of landslides and acceleration of soil erosion, influenced by gravity and torrential monsoon downpours, was widely believed to cause downstream siltation and an increase in severe flooding in Gangetic India (the region formed by alluvial deposits of three great river systems, including the Ganges), and in Bangladesh. Thus the potential for international dispute was added to the threat of environmental disaster. Regardless, prior to 1992 concern remained limited.

Why, as recently as the 1970s or even the 1980s, were mountains not afforded a more prominent place on the world's political agenda, when environmental movements had been in full swing for some time? A partial answer is that mountains had not yet attracted an effective constituency. During the 1972 U.N. Stockholm Conference on the Environment, great strides were made in recognizing the growing gap between the have and have-not regions of the world and by the establishment of ministries of the environment in numerous member countries. Yet mountains did not even merit a footnote. It was not until the 1992 United Nations Conference on Environment and Development (UNCED; the Rio de Janeiro Earth Summit) that a real breakthrough appeared possible with the inclusion of a special chapter for mountains in Agenda for the 21st Century (Agenda 21), the summit's plan for fostering governmental and individual sustainable action. Chapter 13 (which deals with managing fragile ecosystems and sustainable mountain development) of Agenda 21 led ten years later to the U.N. General Assembly's designation of 2002 as the “International Year of Mountains.”

Problems Facing the World's Mountains

Undoubtedly, mountains are threatened by general overuse of natural resources—water, forests, grasslands, and minerals—that can lead to soil erosion, water and air pollution, and downstream damage. This is particularly severe on steep slopes (as compared with regions of gentle relief). Indiscriminate road construction on unstable slopes and erection of



A Tibetan lady holds a bunch of radishes (1979). Tibetans who live 4,000 meters above sea level would be classified as mountain folk, yet their local landscapes may be as flat as the North American prairie. Photo by Jack D. Ives.

high dams, usually for the sole benefit of downslope communities, are aggravating factors. Unregulated mass tourism can also lead to environmental degradation, loss of biodiversity, disruption of mountain cultures, and an augmented sense of deprivation as well as actual deprivation on the part of many poor mountain people. These are the topics that hit the news headlines. But they are frequently overdramatized. Too often the causes, as outlined in the case of the Himalayas, are misunderstood, oversimplified, or even falsified for political advantage. In any case, mountain communities, whether they are in the Alps or in the Himalayas, are in economically marginal positions compared with their lowland counterparts. A large proportion of the world's poverty, especially in Asia and South America, is located in mountain regions. It is difficult to make a precise statement because demographic and related data are usually aggregated by their inclusion into larger political survey units, so that specific information is unobtainable.

The entire complex of mountain problems has been further exacerbated by an apparent unwillingness, until very recently (principally after the terrorist attacks of September 11, 2001), to publicize the single most devastating process that is occurring within mountains: warfare in all its forms. This includes conventional armed conflict, guerrilla insurgencies, drug wars, and terrorism. Moreover, mistreatment of mountain peoples has caused a great increase in the number of internal and international refugees. The U.N. Food and Agriculture Organization (FAO) claimed during the launch of the IYM on 11 December 2001 that of the twenty-seven wars affecting the world at that time, twenty-three were located in mountains regions. This disproportionate burden that the mountains and their people carry signals real disaster—human, economic, environmental, political—on an unprecedented scale.

In terms of overall conflict, mountain peoples are frequently victimized by the central governments. In northern Thailand, western China, and the



Himalayan countries, they are unfairly and wrongly blamed for catastrophic environmental degradation. The real culprits are frequently large commercial interests intent on resource exploitation and central governments seeking access to resources at the expense of the local people who are often marginalized minorities with little political clout. Nevertheless, poverty often leaves the local mountain people with little alternative but to overexploit their own environment. Regulations, such as logging bans, are imposed by the bureaucracies in the lowlands, and they often lead to unsatisfactory solutions that may further exacerbate mountain poverty, thus generating further unrest. This acute dissatisfaction has erupted over the last decade into widespread insurrections in many of the world's mountain regions, from Pakistan, Nepal, and northeast India to Colombia and Bolivia.

Future Directions

The vast extent of the world's mountainous territory, together with its extreme complexity, both in terms of the inherent natural phenomena and the innumerable ways in which human communities have adapted to them, are a challenge indeed to sustainable development. Mountains as a whole are among the least known and least understood areas of the world. The International Year of Mountains has provided an unprecedented opportunity for expanding research and for rapid growth in communication. This has combined with the growing awareness that many of the forecasted negative aspects of global warming will have early major and accelerating impacts in mountain regions. Such concern has resulted in an enormous upsurge in interdisciplinary and international

research collaboration, the expected results of which await future application. The first task, however, is to reduce the burden of conflict and, related to this, to facilitate involvement of mountain people in management of their local resources and in development of relations with society at large.

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See also Climate Change; Environmental Movements; Erosion; Indigenous Peoples; Tourism

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Mughal Empire

During its peak the Mughal Empire (1526–1857) flourished as a result of a strong centralized government, an increase in trade, and the rise of new markets in urban centers such as Delhi, Agra, Lahore, Dhaka, Surat, and Masulipatnam. Indo-Islamic architecture reached its apogee under the empire, with opulent palaces, tombs, forts, mosques, and gardens.

The Mughal Empire ruled the area of present-day Afghanistan, Pakistan, and much of northern India from 1526 until the official defeat of its last ruler, Bahadur Shah II (1775–1862), by the British in 1857, though its true decline dated from the death in 1707 of Aurangzeb (1618–1707), the last of the great Mughal emperors. The years of Mughal preeminence saw extraordinary developments in art, architecture, civil administration, and efforts at religious tolerance.

Establishment and Golden Era

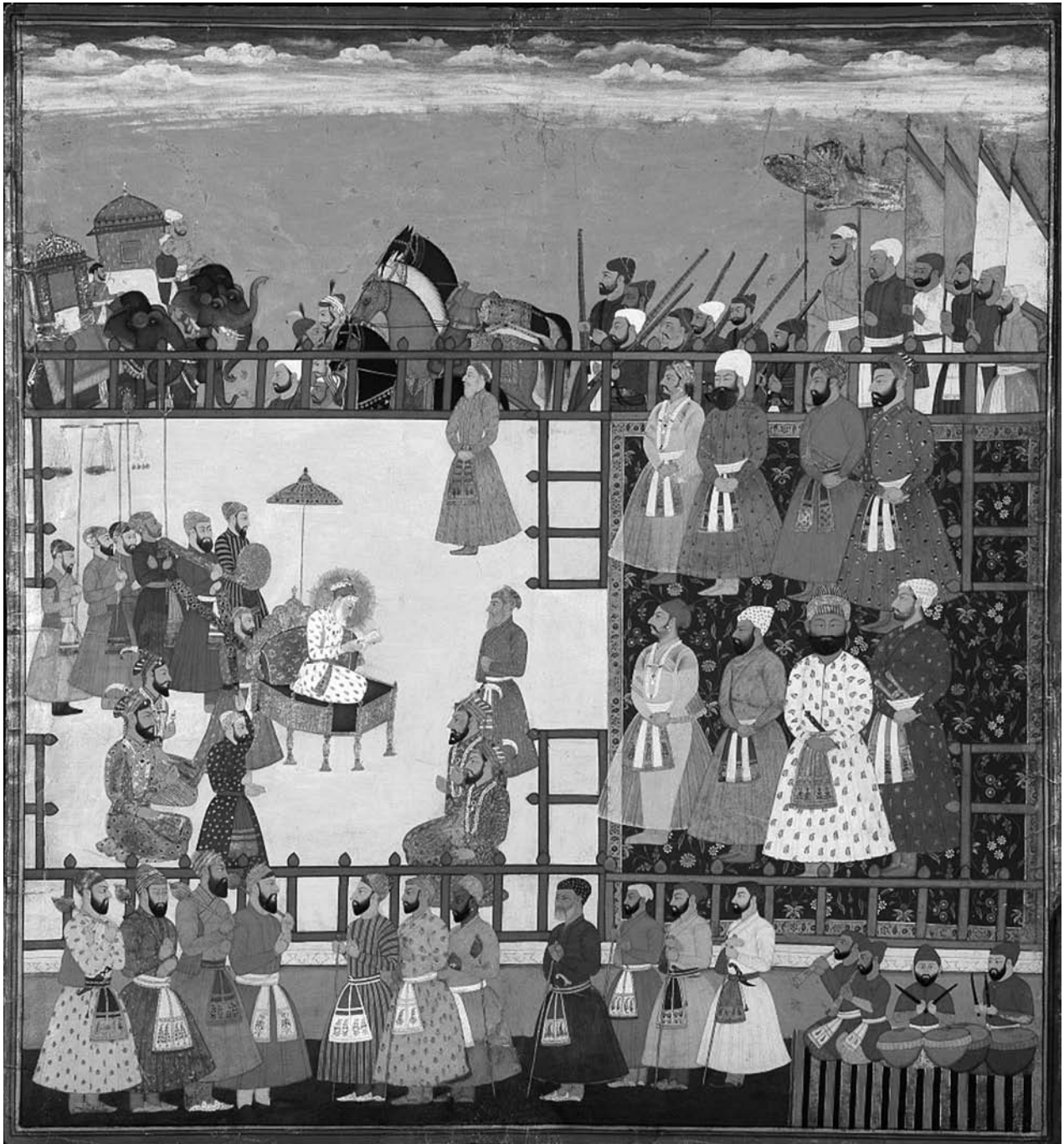
Babur (1483–1530), the ruler of Fergana in present-day Uzbekistan, founded the Mughal Empire when he defeated Ibrahim Lodi, the ruler of the Delhi sultanate (1192–1526), in the first battle of Panipat in 1526. With Delhi under his control, Babur proceeded to vanquish the Rajputs of central and northern India, and the Afghans. Babur's successor Humayun (1508–1556) was not able to check Sher Shah (1486–1545), the powerful Afghan ruler of Bengal (present-day Bangladesh and northeastern India), and after defeat in the battle of Chausa in 1539, Humayun took asylum at the court of Persia. Humayun eventually returned to power but ruled for just a year before dying. He was succeeded by his son Akbar (1542–1605), one of

the greatest kings of India, who ascended the throne in 1556. Akbar cemented relations with the Rajputs through matrimonial alliances while defeating recalcitrant rulers, and he overhauled the administration of the empire. His major contribution was his policy of religious eclecticism—an enlightened vision of religious tolerance.

Akbar bequeathed his son Jahangir (1569–1627) an empire stretching from Kabul in the northwest, Kashmir in the north, Bengal in the east, and beyond the Narmada River in the south. Jahangir's reign was marked by political conspiracies; his queen, Nur Jahan (d. 1645), was the true power behind the throne from 1620, acting through her clique of male supporters. The Mughal Empire's golden age was the reign of Jahangir's son, Shah Jahan (1592–1666), under whom such monuments of world architecture as the Taj Mahal and the Great Mosque at Delhi were constructed.

Decline

Shah Jahan's successor, his son Aurangzeb (1618–1707), was an Islamic puritan and orthodox by temperament; his reign marked the beginning of the end of the Mughal Empire. His relentless campaign in the Deccan (in central India) and wars against Rajputs, Sikhs, Marathas, and Jats drained the royal treasury. Crises in the bureaucracy, weak successors, provincial governors' assertion of independence, and the invasion of the Persian king Nader Shah (1688–1747) in 1739 all contributed to the erosion of the empire. The absence of central authority resulted in the rise of provincial kingdoms, in whose political affairs European traders began to take an active interest. The



This painting depicts the Mughal emperor Aurangzeb holding *darbar* (court) in a camp in northern India, circa 1700. Asian Art Museum, Gift of the Connoisseurs Council, 2006.

British East India Company began to strengthen its military position, and ultimately the whole of India came under the British rule.

Accomplishments

A centralized administration beneath an all-powerful emperor provided stability to the Mughal Empire.

Land revenue was the main source of income, and elaborate arrangements were made for collection and assessment. Many of the administrative features of Akbar's administration, such as division of the empire into provinces, districts, and villages, were retained by the British when they took power.

Urban centers such as Delhi, Agra, Lahore, Dhaka, Surat, and Masulipatnam flourished under the



The Taj Mahal in Agra, India.
Photo by Dr. Bakshi Jehangir.

Mughals as a result of trade and the rise of new markets. The Mughal aristocracy took active part in trade and shipbuilding activities, and the mercantile community accumulated wealth and prospered. India's trade relationships with the outside world expanded; Indian textiles, indigo, and saltpeter were in great demand, while for its part the empire imported bullion and spices. Indian Muslims settled in Southeast Asia, which helped encourage trade with that region. Although Asian merchants initially controlled a major share of oceanic trade, gradually from the eighteenth century onwards European shipping dominated the scene.

Indo-Islamic architecture reached its apogee under the Mughals. The palaces, tombs, forts, mosques and gardens reflected the aesthetic sense, opulence, and settled condition of the great Mughals. The monuments constructed by Akbar were magnificent structures of red sandstone, with pillars along many sides and both carved and painted designs. Under Shah Jahan Mughal architecture made use of marble inlay, foliated arches, mosaic work of precious stones, and copious ornamentation. The Taj Mahal stands apart in architectural splendor and is one of the most beautiful tombs in the world. Landscape architecture, especially gardens, also flourished under the Mughals. Keeping in tune with the

liberal religious outlook of Akbar, manuscripts of Hindu classical texts such as the *Mahabharata* and *Ramayana* were illustrated. Portrait paintings and scenes of hunting, battle, and court life reached their pinnacle under Jahangir. In the arena of music, the musician Tansen (1520–1589) is remembered; his ragas are still popular.

Although Persian was the court language, regional languages developed. Urdu was very popular. The lyrical stanzas of the famous Hindi poets Tulsidas (1543–1623) and Surdas (1483–1563) are recited in northern India even today. The historian Abul Fazal (1551–1602) created the magnum opus *Akbar nama*, an important source material for the reign of Akbar. The vibrant intellectual life of the great Mughals was reflected in the huge imperial library, where records of religious debates that took place at the time of Akbar were preserved. Conflict between liberalism and orthodoxy permeated the Sufi movements also. The concept of the unity of beings, as advocated by Akbar and some Sufi saints, was challenged by strict adherents to traditional Muslim law. Sufi saints such as Ahmad Sirhindi (1564–1624) and Abdul Kadir (1459–1533) endeavored to purge Sufism of liberal practices.

The Mughals had left an indelible mark on the history of the Indian subcontinent. The composite



culture that had started under the Delhi sultanate took a firm shape, and a national culture for the whole of India continued with the Mughal fusion of old with new.

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See also Akbar; Aurangzeb

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Muhammad

(c. 570–632 CE)

PROPHET AND FOUNDER OF ISLAM

Muhammad is the founder of the religion of Islam. Born into the Quraysh clan in the city of Mecca, he belonged to a family of merchants. At the age of forty he had a vision that turned him to preaching the word of one true God, Allah. He fled from Mecca to Medina where he attracted many Muslim converts. His teachings are recorded in the Qur'an.

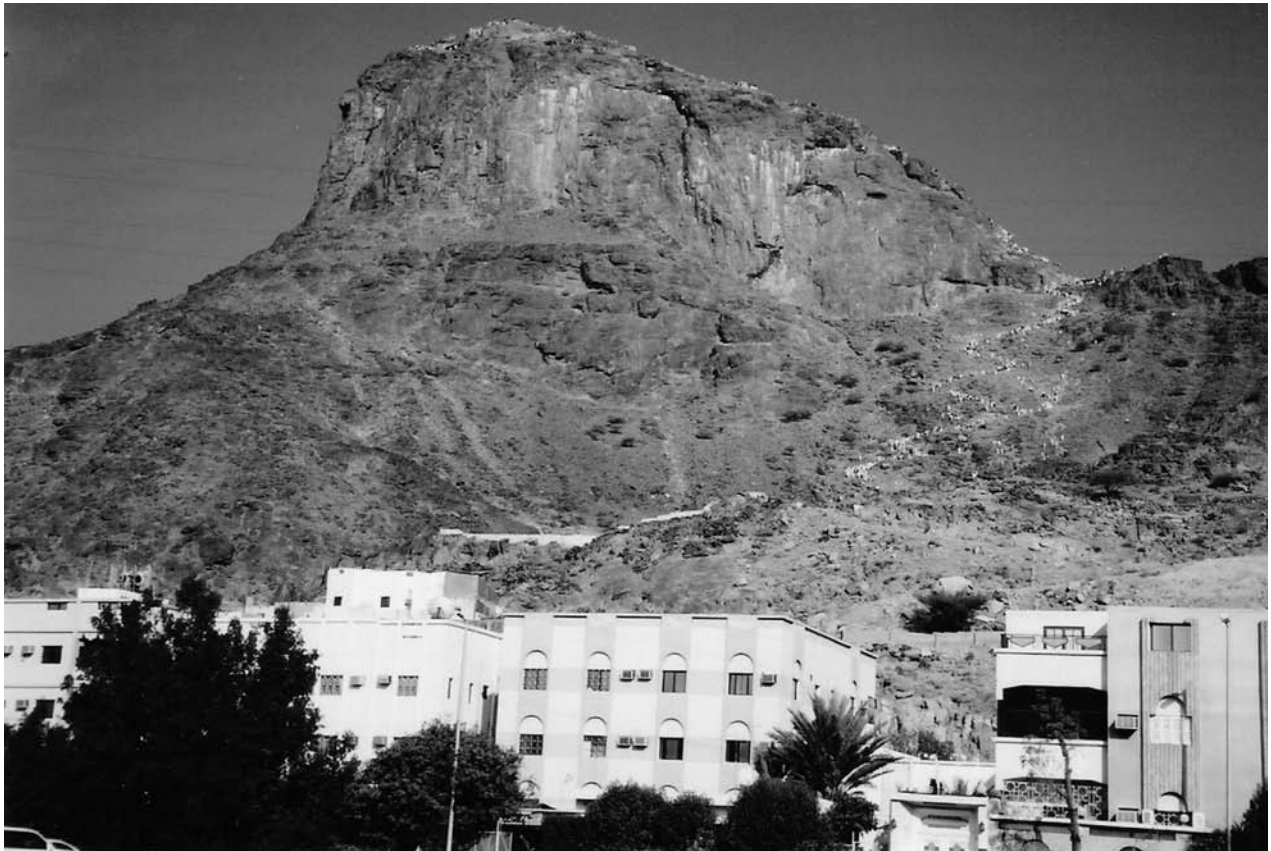
Muhammad (570–632 CE) was the Prophet of Islam, now the second largest religion in the world with a following of 1.5 billion people across different regions and races. He belonged to the Arab-celebrated tribe of Quraysh in the oasis town of Mecca, Saudi Arabia. His father died prior to his birth, so he was raised first by his grandfather, Abdul Mutalib, and then following his death by an uncle, Abu Talib. In his early youth, Muhammad adopted his family profession of business in which he prospered more by his personal morals than by the maneuvers of a merchant. He is known to have accompanied his uncle on trading trips to Syria, where he came into contact with Christians and Jews. His community bestowed upon him the honorific titles of *al-Ameen* (the trustworthy) and *al-Sadiq* (the truthful).

Muhammad later made the same journey in the service of a wealthy widow named Khadijah. Despite a fifteen-year disparity in their age, they were married not long after the trip and eventually had two sons and four daughters. It proved to be a long and successful marriage of twenty-six years, broken only by Khadijah's death. One of Muhammad's daughters, Fatimah, married his cousin, Ali, giving rise to the direct line of descendants from the Prophet. At the age of forty, Muhammad claimed that God (Allah

in Arabic) had selected him as a prophet to call his people and the rest of humanity to the worship of this one true God who had also sent the prophets Abraham, Moses, and Christ with the same duty. Muhammad took upon himself the mission of reforming the Meccan society and religion. Messages that God revealed to Muhammad are contained in the Qur'an, the holy book of Islam.

Muhammad gained a few converts to his new religion, Islam ("submission [to God]"). But the powerful, rich Meccan elites, whose socioeconomic interests and political power he challenged, persecuted his followers. These elites were just about to kill him, too, when he moved to another oasis town, Medina (al-Medina in Arabic, "the City [of the Prophet]"). This important event, which came to be known as the Hijra (emigration) in the history of Islam, took place in 622 CE and marks the year 1 in the Islamic lunar calendar.

Muhammad worked to reconcile the warring tribes of Medina into peace and brotherhood. After gaining many more new converts (Muslims), he established the Ummah, a small community of people based solely on faith rather than on tribal, racial, or any socioeconomic relations. Along with preaching God's revelations in the Qur'an, Muhammad instructed his people through his own precepts and practices, called the hadith. The Qur'an and the hadith are two primary sources of Islamic sacred law (sharia). The law calls upon people to establish peace, socioeconomic justice, political enfranchisement, and respect for the human rights of women and minorities. The main thrust of the Qur'an and the hadith is to build an Islamic society on the basis of good conduct, brotherhood, kindness, sharing and caring, respect



Jabal al-Noor, or Mountain of Light, is the place where Muhammad used to pray and meditate.

for others, helping the poor, protecting the helpless, justice and equity for all, promoting virtue, and preventing evil. Muslims take Muhammad as a model of moral perfection.

Under Muhammad's guidance, the small Muslim community (Ummah) that he founded in 622 turned Medina into a city-state. Muhammad framed a signed contract between the Muslims and the Jews of Medina, the Charter of Medina, which is the first of its kind in world history. The Charter guaranteed protection of life and property and freedom of religion to the people of Medina and their allies in the region. The signatories of the charter promised to defend the city-state, to maintain peace and law and order, to submit to equity and justice in judicial and debt matters, to fulfill their obligations in protecting the defenseless, to stop mischief, murder and tyranny, to treat each other as equal partners in peace, and to guarantee religious freedom to all.

The peace and safety of the city-state of Medina under its charter and guidance of Muhammad attracted non-Muslims inside and outside its borders, and the

number of Muslim converts increased. But Muhammad's old enemies in Mecca soon started intrigues with internal and external enemies of the new city-state that threatened Mecca's economic and political domination in Arabia. Skirmishes between the Muslims of Medina and the pagans of Mecca turned into the Battle of Badr in 624. Muhammad with a small band of 313 Muslim followers was outnumbered and outmatched by the 1,000-strong, well-equipped army of Mecca. But the superb war strategy of Muhammad and the courage of his followers defeated the Meccan army. Despite the guarantees in the charter, claims were made following each battle that Jews had sided with the enemies of Medina, resulting in expulsions from the city.

Muhammad said that he initiated his first war of defense (jihad, "making efforts [in the cause of Allah]") with the divine permission that God revealed to him (Qur'an XXII: 39–40). The permission God gave him was to fight against wrongfulness and oppression—not to grab the natural or national resources of an enemy. In his first jihad, Muhammad established

The ink of the scholar is more sacred than the blood of the martyr. • **Muhammad** (c. 570–632 CE)

rules of engagement. He prohibited the killing of women and children and of weak, peaceful, and innocent men. He prohibited the mutilation of dead enemy soldiers and the scorched-earth destruction of an enemy's water and food supplies. He forbade the mistreatment of prisoners of war. Poor prisoners could pay for their ransom by teaching Muslim children reading and writing, and by promising not to fight again. The Meccan pagans imposed two more ferocious battles upon the Muslims, but they failed to obliterate the city-state of Medina.

In 628, Muhammad offered the Treaty of al-Hudaybiya, which guaranteed mutual peace, security, and freedom, to his allies and to his bitter but defeated Meccan enemies. But Meccans soon started violating the treaty, and in 630 Muhammad marched on Mecca with a force of ten thousand Muslims to protect his allies. Before his march, he guaranteed peace and respect to all noncombatants. Mecca fell to his troops without a fight, but rather than slaughtering his enemies, he forgave and embraced them and let them keep their properties. The phenomenal peace of Muhammad turned enemies into friends and Muslims.

In his last Sermon of the Mount, shortly before his death in 632, Muhammad reemphasized the

importance of kindness, of protecting the rights of women and slaves, of the strict prohibition of bloodshed, injustice, and usury, and of the significance of peace and brotherhood. Muhammad reminded his audience, "There is no superiority of Arabs over non-Arabs, and vice versa, nor is there any superiority of whites over blacks, and vice versa."

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See also Islam

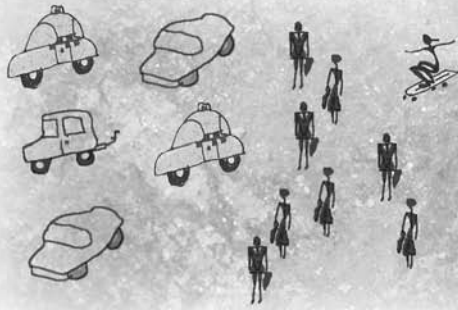
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Museums

A museum is a place for housing, conserving, restoring, and displaying objects and collections of artistic, scientific, or historical significance. These collections are generally selected, arranged, and presented by a curator and made available for public viewing through exhibitions. The museum is an institution with an important role for conserving cultural heritage and in educating the public about the items in its care.

The museum, or institute of the Muses (the goddesses of song, poetry, and the arts and sciences more generally), has been with us for millennia, since the time of the ancients. Plato's library in Athens is thought of as one of the first, while the Musaeum at Alexandria, including the great Library of Alexandria, is considered one of the most famous. Today museums take all shapes and sizes; some are housed in magnificent monuments to preservation, while others are virtual and only accessible online. Museums contain and display all manner of objects and artifacts, from the ancient to the near new, from the conventional to the bizarre. Often thought of as dedicated to archeological, anthropological, and natural history preservations, museums are also dedicated to various themes, places, and peoples: from maritime to space, from science to fashion, from wars to sports, and from Goethe to Elvis.

From "Curiosities" to "Ethnographica"

Starting in the second half of the nineteenth century, anthropological museums began to flourish in virtually all major European and American cities. Through the 1920s these institutions became major centers

for the construction of global narratives, whose rise and fall can be charted over the course of this period. Such an investigation also reveals that museums and global narratives are by no means exclusively Western phenomena.

In the Western world, museums developed out of an impetus to understand and categorize the world. It was during the Renaissance that a combination of mercantile wealth and human inquisitiveness created the first "curiosity cabinets" in Italy. Initial curators of such cabinets had few organizing principles, and they listed the relics of saints along with "curios" of animal and plant remains. Frequently such cabinets presented little more than mementos retrieved from long-distance voyages undertaken in the 1500s and 1600s. Yet already within these cabinets a clear separation between *artificialia* (or human-made artifacts) and *naturalia* (or natural objects) soon appeared. This distinction became more pronounced with the development of the natural sciences in the 1700s. The most significant development was the publication of the *Systema Naturae* (1735) by the Swedish naturalist Carolus Linnaeus (1707–1778). Linnaeus's system classified plants by reproductive apparatus and created a taxonomy that accommodated new plant types encountered during exploratory voyages. While Linnaean categories functioned well in the realm of *naturalia*, one could not extend them to indigenous artifacts. Over the next century, however, scholars invested considerable time and effort in replicating Linnaeus's system for the realm of human artifacts. Their endeavors became even more pronounced as Westerners increasingly encountered non-European peoples following 1750. Expeditions into the African continent or the watery expanse of the Pacific

Give me a museum and I'll fill it. • Pablo Picasso (1881–1973)



A museum in Tirupati, India, specializes in temple art. Photo by Klaus Klostermaier.

Ocean returned thousands of objects that stimulated not only curiosity about indigenous peoples but also attempts to classify the world's diversity into well-ordered epistemological systems.

By the 1800s, this search for organizing principles received additional currency from the field of archaeology. Conceived to support the available Greco-Roman literature, archaeology provided additional findings that extended and reinterpreted the humanist traditions. While classical archaeologists operated within the framework of an existing body of Greek and Roman literature, anthropologists were free to conceive histories from the material cultures of so-called nonliterate societies of Africa and Oceania. At the same time, however, there emerged a growing

concern about the availability of indigenous artifacts. Early anthropologists argued that Western expansion brought about the transformation of indigenous cultures around the world. They believed that Western commerce, diseases, and theology reshaped indigenous societies to such an extent that material culture became tainted with Western influence or, in the worst case, ceased to exist. Either way, there emerged a need for an “anthropology of salvage,” which ultimately called for storage houses for indigenous artifacts and established their value as historical sources. This salvage anthropology became instrumental in the creation and sustenance of anthropological museums, which were thus conceived as a thesaurus of human cultures.



The Rise of World History in Anthropological Museums

Armed with new perspectives on the importance of indigenous artifacts, anthropological museums flourished throughout the second half of the nineteenth century. Skilled anthropologists employed the salvage agenda to mobilize civic pride in their respective cities in an attempt to create leading anthropological institutions. Concern over disappearing non-Western heritages enlisted patrons and established networks of collectors. Over the next decades, there also emerged increasing pressure to impose a coherent, orderly framework on the artifacts amassed that could be displayed in the museums' hallways. The concern about vanishing indigenous peoples was nowhere more pronounced than in the United States, whose westward expansion to the Pacific Ocean often conflicted with the interests of Native Americans. The emerging Smithsonian Institution, created by the U.S. Congress in the 1840s, provided a museological example for other institutions to follow in dealing with indigenous artifacts. Within the United States, a number of other anthropological museums emerged, and the competitive atmosphere with regard to indigenous artifacts soon spread to such countries as Germany, Great Britain, and, later, France.

The Fall of World History in Anthropological Museums

A number of important factors contributed to the decline of world historical narratives within anthropological museums. Most telling were novel methodological approaches in anthropology. By the first decade of the twentieth century, museum practitioners began to venture into the wider world. While formerly relying on collectors such as colonial officials, missionaries, and traders, museum anthropologists decried the paucity of indigenous information accompanying the artifacts they obtained. To remedy such omissions, museum anthropologists organized expeditions to particular regions of the world. While the primary objective of such expeditions was still the

collection and study of indigenous artifacts, many expedition participants, dissatisfied with the superficiality of previous data collection, argued for a more localized understanding of cultures, something that could be accomplished only by long-term residence among the members of a particular society. Such considerations, however, could not be easily accommodated in museum displays.

Anthropology's turn from global to local or regional methodology was under way before the outbreak of World War I. This conflict, however, greatly facilitated matters. It disrupted supply lines of collectors around the world, realigned colonial territories, and decimated the scholarly community. Similarly, certain practitioners were stranded as foreign nationals and by default restructured their studies around specific locations. The most prominent example was Bronislaw Malinowski, who as a national of the Austro-Hungarian Empire, ran into complications in the Australian colony of Papua. His ensuing research among the Trobriand Islanders resulted in a number of influential monographs. Although Malinowski did not invent the anthropological method of participant observation, his work enshrined anthropology's turn away from material culture. Museums continued to exist, but theoretical innovation shifted to the university setting. Anthropology's attempts at universal histories gave way to more localized studies that have dominated the discipline ever since.

Non-Western Museums and Their Global Narratives

By 1930, global historical narratives had departed from the hallways of anthropological museums. These institutions still served as important training and employment stations for generations of anthropologists, but novel theoretical constructs emerged elsewhere. Hence emerged the stereotype of anthropological museums as relics of a bygone era so popular in postmodern and postcolonial literature. There exists, however, an interesting byproduct of historical investigations into anthropological museums. Legitimate questions emerged about whether or not



European explorers and colonists in the early 1600s often brought indigenous peoples of the Americas to European cities, treating them as museum pieces, or objects of curiosity. In the 1800s museums became storage houses for indigenous artifacts and established the value of such objects as historical sources.

anthropological museums were indeed Western institutions. While it is difficult to generalize in this context, there seems to be ample evidence that similar processes existed in other societies. Just as Western societies appropriated indigenous material culture to construct historical narratives, so an indigenous appropriation of Western artifacts was a frequent occurrence. Material culture is once again indicative in this case. During the height of the collecting frenzy (three decades before World War I) a number of suspect artifacts started to arrive in anthropological museums. These were things that incorporated Western materials and colors, and whose production involved iron tools. Museum curators generally instructed collectors to abstain from such “tainted” artifacts, yet their numbers started to increase by the 1900s. Deemed inauthentic at the turn of the century, these artifacts are currently restudied to reveal indigenous counternarratives (or, as some historians put it, counterethnographies) to museum world histories. There are even some accounts of indigenous museums, one of the most famous, perhaps, located on the island of Tahiti in the Pacific Ocean. There, inside a *marae* (religious structure) located at Tarahoi, Captain William Bligh (of *Bounty* fame) discovered

an odd collection of artifacts that included mementos hailing from the *Bounty* mutineers—British symbols of power—and a portrait of James Cook. The last was usually carried to arriving ships, whereupon the captains were asked to add their signatures on the back. Bligh did not make much of Tarahoi, but historians now recognize here the emergence of a museum narrating the encounters between Tahitian and foreign societies.

Controversies

A significant issue for any museum is the means by which its artifacts or displays are acquired: were they acquired legally and ethically, or is there some dispute over their acquisition? A series of relatively recent cases have served to bring these issues to the fore. Perhaps the most famous case is that of the Elgin or Parthenon Marbles, a series of classical Greek marble sculptures that have been housed in the British Museum in London since the early nineteenth century, but which are very much wanted by many to be returned to their original home in the Acropolis of Athens. Even today the theft and trafficking of antiquities is an increasingly common

and serious transnational crime. It gained significant international attention following the pillaging and looting of the Iraqi National Museum in the wake of the United States' invasion and war in 2003. In recent years a number of prominent American art museums, including the Cleveland Museum of Art, Metropolitan Museum of Art in New York, the J. Paul Getty Museum in Los Angeles, the Museum of Fine Arts in Boston, and the Princeton University Art Museum have all returned works of art to Italy that were found to be stolen or looted by third parties and sold on. Similarly, the bones of Australian Aborigines acquired on voyages in the early nineteenth century and long held by National Museums Scotland, the Royal College of Surgeons in London, and the National Museum of Ethnology in Leiden, the Netherlands, have recently been returned to their tribal descendants for reburial. While there have been some successes in winning the return of artifacts, particularly human remains, the very nature of many museums and the means by which their numerous artifacts were collected means that this contentious issue will likely remain unresolved as long as there are museums.

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See also Art—World Art Studies; Imperialism; Libraries

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Music—Overview

Throughout history music has served as a means of telling (and remembering) stories, as a force in shaping or influencing society, as a mode of spiritual or religious expression, and in political contexts to either suppress or excite people subjected to restricted freedoms. The commercial music industry since the 1990s has fostered the spread of cultural and ethnic identities, especially through the genre of world music.

In examining music's role in history it can be argued that music serves two major roles: it reflects the ideals and realities of societies, embodying history and memory, and it influences and sometimes creates those societal ideals, realities, and possibilities for the future.

Music Tells Stories

Music serves a fundamental role in the history of humanity as a means of telling stories about the past, and thus carrying collective memories into the future. Among the Mande of West Africa, the *jali* are a class of hereditary professional musicians and verbal artists who serve as orators, genealogists, and purveyors of oral history. The power to manipulate words has historically given the *jali* a privileged position in Mande society. Similar to these West African bards were minstrels (secular musicians) in the European Middle Ages (and *jongleurs* before them), who served as storytellers and purveyors of narrative.

Mexico also has singing-poetry traditions, such as the *corrido*—a narrative ballad genre that was especially popular during the Mexican Revolution—in which singers compose verses commemorating past

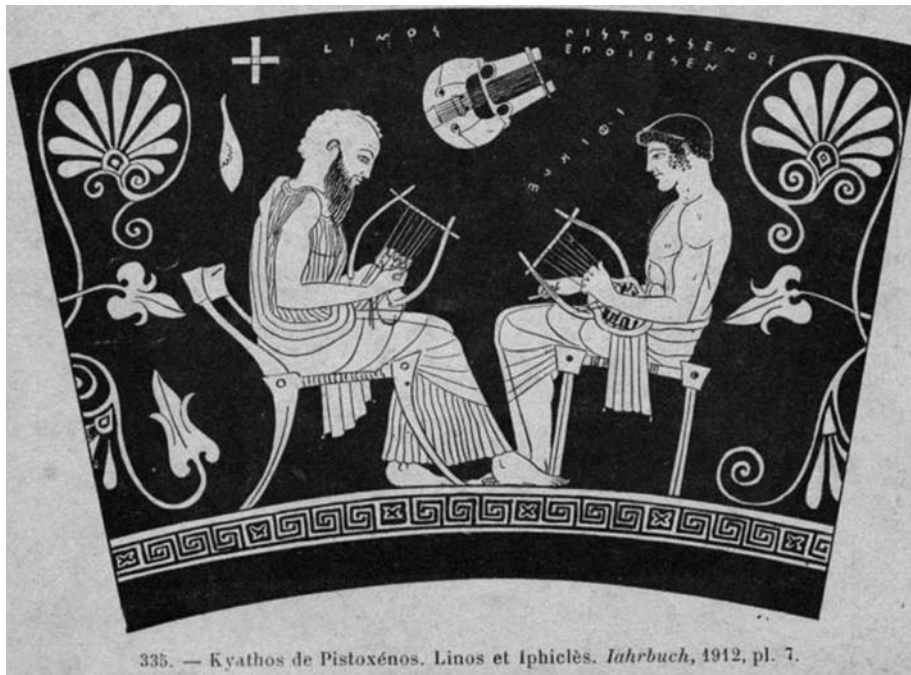
and current events. Recently a subgenre known as *narco-corridos* has chronicled the exploits of Mexican drug traffickers, frequently celebrating them. On the other side of the globe, programmatic music abounds in Chinese traditional music, such as the *pipa* (lute) composition, “The Great Ambuscade,” which recounts a historic battle between two warlords in 202 BCE. Whether documenting the past or commenting on contemporary events, music helps people comprehend their histories and present realities.

Music and Morality in Early History

Music may provide a means of recording and remembering events, but it can often play an active role in shaping society, a fact that has concerned some of history's most influential thinkers. In ancient China and Greece, respectively, Confucius (551–479 BCE) and Plato (428–347 BCE) developed similar ideas about music's influence on the moral fabric of society. Both believed that the health of the state depended on playing the right kind of music. For Confucius, aesthetic ideals should follow morality: “good” music was that which contributed to good values; the “wrong” music could have severe consequences. A famous story depicts Confucius as advisor to a certain prince of the state of Lu. Against the advice of Confucius, the prince indulged his court with music for entertainment, distracting him from his princely duties and spoiling the economic prosperity of Lu.

Similarly, Plato warned of the danger music posed to society. In his *Republic*, he outlined an ideal society that would ban the music of certain instruments, and he favored the Dorian modal scale as encouraging

If a composer could say what he had to say in words he would not bother trying to say it in music. • **Gustav Mahler (1860–1911)**



Linus teaches Iphikles how to play the lute. Reproduction drawn from an Attic red-figure skyphos (vase) by the Pistoxenos painter (c. 470 BCE). From *Histoire de l'art dans l'antiquité*. Paris: Hachette, 1882–1914.)

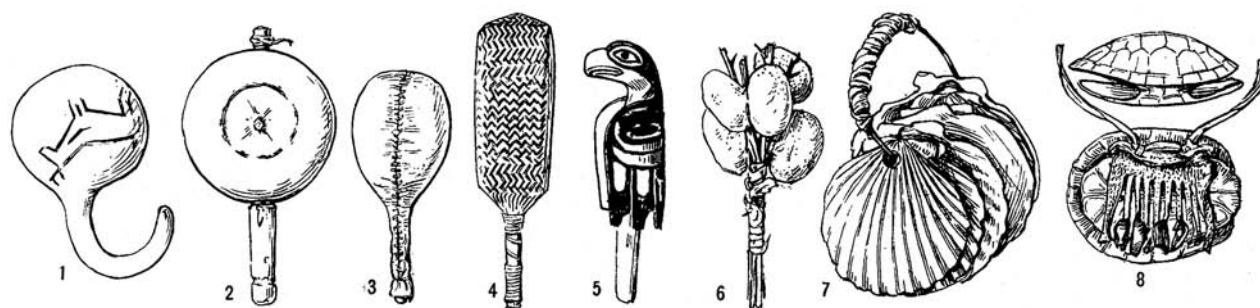
bravery. (The Greeks developed seven modal scales based on the unequal intervals between the eight notes in a scale, each mode named for a different city whose mood most closely reflected the scale's tone.) According to Plato, music and athletics could mold the ideal citizen if the training in neither took precedence over the other, but rather complemented one another to provide balance of mind and body. For Plato, as for Confucius, aesthetics were in the service of morality, and indeed he argued that it was more important for a poet to be a good person than a good musician. The conservative philosophies of Confucius and Plato were born of concern about the perceived downfall of their respective societies, and both thinkers believed that changes in the musical cultures of their times were indicative of, as well as causes of, social decline.

Music and Spirituality

Religious worship around the world frequently involves music, sometimes as ornamental to worship services, and other times as the very vehicle for

praising and communicating with a higher power. Yoruba religions in West Africa, Cuba, Brazil, and Trinidad begin services with music as a means of praising the *orishas* (gods) and welcoming them into houses of worship; these traditions also use music and dance as vehicles for inducing altered states of consciousness in which one of the *orishas* may inhabit the body of a believer for a brief time. In Sufism, a mystical branch of Islam, music is used in the *sema* ceremony in order for participants to achieve an ecstatic state so that they may communicate with god. Biblical references to music include the use of music in worship, and the Christian Church was the main patron of Western classical music up through the eighteenth century.

Connections between music and spirituality are often made explicit in legends, myths, and parables, and this other-worldly derivation suggests the importance of music for social groups. The ancient Greeks, for their part, believed that music came directly from the gods, a tempestuous gift from Apollo in Pandora's box. A legend in Indonesian oral history tells of an event around 300 BCE, when a great king won



This series of drawings shows a variety of percussive musical instruments used over time and across cultures: (1, 2) gourd rattles (Hopi of Arizona); (3) rawhide bag with pebbles (Sioux); (4) Rattle of plaited fiber with pebbles (South America); (5) carved rattle in shape of a fish hawk (Tlingit of Alaska); (6) rattle of cocoons of moths with handle (California); (7) shell rattle strung on wooden hoop (California); (8) tortoise shell rattle with leather thong clappers (Arizona); (9) rattle with wrought-iron disk and bells (Africa); (10) cloth belt rattle with deer hoofs and beads (California); (11) ankle rattle with bells (India); (12) musical bones (United States); (13) clappers (China); (14) sheep bone rattle (Spain); (15) hollowed hardwood clapper (China); (16) war drum (Fiji); (17) skin tambourine (Native America); (18) kettle drum (India); (19) two-headed drum (Japan); (20) gong (China); (21) cymbal (China).

a battle in which he gained control of the enemy's bronze drums, thus harnessing the power of the god of thunder as well as presaging the creation of Indonesia's classical percussion tradition, gamelan. More recently, there is a famous Indian folk ballad of Kenaram, a notorious sixteenth century murderer who changed his ways only after hearing the song of a devout poet named Bangshi Das; afterward he became Bangshi's pupil. This Indian ballad articulates the Hindu belief that music is devotion; through music one can attain the highest connection with god.

Other groups advocate the separation of music and spirituality. Despite the exception of Sufism, in most Muslim religious services music is forbidden. In Europe, the influence of Enlightenment philosophy in the eighteenth century encouraged secularization in the arts, and Western classical musicians began relying less on Church patronage. By the end of the century, Wolfgang Amadeus Mozart (1756–1791) was able to work essentially as a free agent in Vienna, and students of Western classical music hold his music in high regard due to his individual genius, rather than any connections between his music and spirituality.

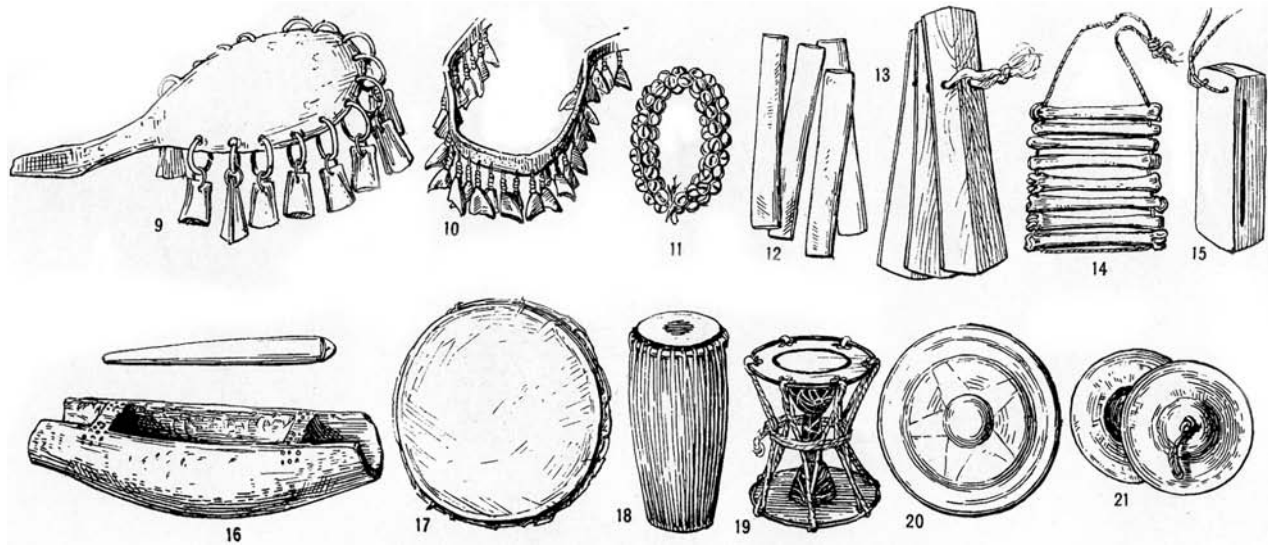
Music's Role in Colonialism and its Aftermath

In the era of European colonial expansion, beginning around the sixteenth century, many groups of people,

along with their music, were subjected to European economic, political, and cultural dominance. Music has been integral to colonial and postcolonial processes. For Europeans, music was occasionally used as tool for the subjection of foreign peoples, and it was often used for religious conversion. For societies seeking to escape from European hegemony, music served a crucial role, particularly in nationalist and independence movements in India, Africa, the Caribbean, and Latin America.

A major consequence of European colonialism was the idea, apparently widely held among both colonizer and colonized, of European music's superiority. There is little doubt that the notion of European cultural superiority greatly facilitated European hegemony, and in this sense music was an aid to colonization. In the late eighteenth and early nineteenth centuries, for instance, Spain sent music teachers along with missionaries to California in order to teach European polyphonic choral singing to Amerindians in the region. In addition to teaching and proselytizing, these emissaries of the crown often forbade the performance of indigenous musical practices.

Strategies for opposing European colonial power often included the reclamation of local musical practices. In India, for example, British colonialism had hastened the decline of court patronage of Hindustani and Karnatak classical music traditions. The rise of nationalism, which culminated in independence in



1948, however, included a renewed interest in and public patronage of traditional arts, and the period saw a rise in education and public performance of Indian music. In Trinidad, steel-band music played a most active role in the independence movement. Along with the leadership of Eric Williams (1911–1981) and the People's National Movement (PNM), Trinidad achieved independence in 1962. In his political campaign, Williams appointed steel-band musicians as his personal assistants, arranged for steel-band performances at PNM political rallies, and, in general, advocated for the steel-band as a symbol of Afro-Trinidadian national culture, ultimately cementing the notion of the steel drum as the national instrument of Trinidad. Similarly, cultural nationalist movements in Brazil and Cuba both countered legacies of Eurocentrism by focusing on the cultural contributions of their African-descended populations.

Composers trained in Western classical music were important in nationalist movements, notably Heitor Villa-Lobos (1887–1959) in Brazil. Such composers were influenced by European works from the late nineteenth and early twentieth centuries, such as Igor Stravinsky's ballet, *Rite of Spring*, which included Russian folk tunes, depicted pagan folk scenes, and caused a riot at its 1913 debut in Paris.

The Commercial Music Industry

From the mid-nineteenth century on, the world of music has been increasingly impacted by the rise of

the commercial popular music industry, especially as it has developed in the United States, beginning in the 1840s with blackface minstrelsy. As it has progressed into the twenty-first century with global pop music, commercial popular music has been created in the context of electronic mass media, the increasing connectedness of previously isolated groups of people due to communication and travel opportunities, and the growth of multinational corporations. While some argue that popular music has served the role of simply advancing the capitalist project (see Adorno 1944), it can also be argued that popular music's position in society is more complicated, as it is often used strategically by individuals and social groups as a means of identity formation and resistance to the alienation of capitalism.

As commercial popular music from the United States has been marketed abroad, musical cultures from outside the United States have in large part been faced with decisions about whether or not to incorporate this music into their own practice. Oftentimes, the decision has been to integrate aspects of Western popular music with the sounds and symbols of local musical practices, thus creating hybrids which are simultaneously international and local. In the 1980s and 1990s in Zimbabwe, for instance, popular musicians such as Thomas Mapfumo created music that was based on rock music instrumentation—drum kit, electric guitars, and keyboards—but which also included aspects of local Shona culture, such as the Shona language and an electrified version of the traditional thumb-piano, *mbira* (Turino 2000).

The ancient Chinese musical instrument called the *bianzhong* (this example from the first century CE), comprises bronze bells of various sizes that are struck with a gong.



Mapfumo was, himself, a pioneer performer in the world music industry.

“World music” emerged as a genre label in the 1990s, a creation of record-company executives as a marketing tool for recordings that mainly included folk and popular styles from countries other than the United States, although occasionally folk music from within the United States itself has also fallen under the world music rubric. In some ways, world music is just another example of the commercial market exploiting cultural difference for economic profit. On the other hand, individuals and their communities now have greater potential access to remote social groups; that exposure has the consequence of loosening the bonds of identification with certain organizations, such as the nation-state, in exchange for others, such as a diaspora group.

Music, Identity, and Visions of the Future

In the late twentieth and early twenty-first centuries, individuals and social groups have often used music as a strategy to form a collective identity. Beginning in the 1980s, children of South Asian immigrants in Great Britain began mixing traditional Indian music with European and North American electronic music, creating a number of hybrids, of which the

most well-known is perhaps *bhangra*. Such hybrids have great significance for young South Asians, allowing them to feel connected, across the diaspora, both to their homeland in India as well as to contemporary Western youth culture. Meanwhile, the U.S.-based country music genre often articulates working-class attitudes, family values, and ethics of hard work. After the onset in 2008 of the international economic crisis, which hit automakers—and their blue-collar employees—particularly hard, the country singer John Rich released the populist anthem “Shuttin’ Detroit Down,” which lambastes corporate greed and government bailouts. Such songs give voice to the twenty-first century North American “everyman.”

If music reflects society, and allows individuals the chance to create society, then it also surely offers glimpses of how people imagine the world should be. In that sense, it has been argued that music is a “prophecy” of the future (Attali 1985). Whatever the case, music’s roles in world history are multiple and significant, meaning that we should all be sure to keep listening.

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See also Music and Political Protest



A Chinese man plays a traditional instrument for passersby in Beijing.

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Music and Political Protest

Because music engages hearts, bodies, and minds it has been a powerful force to foster feelings of solidarity throughout history—in political revolutions, religious reformations, union organization, civil rights movements, and antiwar demonstrations. From “classic” protests songs (“L’Internationale”), to surprising examples of the genre (“Yankee Doodle Dandy”), to newer forms like Thomas Mapfumo’s African-roots-music-inspired Chimurenga, music has brought people together in many calls to action.

Music has been an integral part of expressive culture worldwide and a source of personal and public enjoyment and edification for millennia. Most cultures have used music, and still do, to accompany and enhance every conceivable collective activity and ceremony, from the mundane to the sublime: eating, working, storytelling, worshipping, marrying, performing, mourning, healing, criticizing, satirizing, and just plain celebrating. Because it is an integral part of everyday life and is a medium that evocatively and holistically engages minds and bodies, thoughts, emotions, and desires, it is no surprise that the power of music has been employed to create feelings of solidarity and loyalty to political causes and movements in the modern world.

Songs of Revolution

In the 1950s, the sociologist R. Serge Denisoff wrote that modern protest songs had their roots in the rousing defiant songs of early Protestantism such as “A Mighty Fortress Is Our God” (c. 1528), considered the battle hymn of the Reformation. A century later

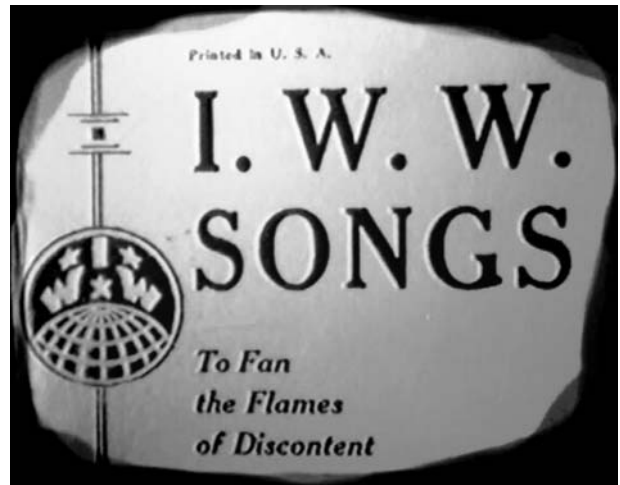
Protestant songs rallied radical forces in the English Civil War (1641–1651), notably “Levellers and Diggers” (1649) written by Gerrard Winstanley. As the leader of the radical group True Levellers (1649–1651)—later known as Diggers to further distinguish themselves from a group close in values called Levellers—Winstanley (1609–1676) composed this protest ballad so that the Diggers’ vision and practice of fostering Christian agrarian and egalitarian communist communities could reach the masses in a popular and traditional art form. As social levelers Diggers wanted to “level all estates” (that is, abolish private property rights) and allow all people to cultivate the earth as “a common treasury.” Common ownership, they believed, would ensure universal freedom and the end of privilege; it would bring an end to unequal social, economic, and political power.

Naturally, the Diggers’ seizure and cultivation of common land alarmed local landowners who regarded such acts as threats to their own holdings and to their supply of landless laborers. Consequently, England’s Council of State sent soldiers to break up the Digger communities that spontaneously arose in many parts of the country. Winstanley printed and distributed the song hoping to rally the spirits of Diggers throughout England who suffered persecution by local landowners and clergymen. They learned and sang it in their communities: “You noble Diggers all, stand up now . . . Your houses they pull down, stand up now . . . But the gentry must come down, and the poor shall wear the crown . . . With spades and hoes and plows stand up now . . . That we should now begin, our freedom for to win . . .”

The Levellers, quite similarly, believed in popular sovereignty (government created by, and subject to, the

will of the people) and representative government; equality before the law; and freedom from arbitrary arrest, religious oppression, and taxation without consent. They found resonance in British North America and gave rise to protest movements there in the eighteenth century. A New York grand jury found an early North American protest song, “Come On, Brave Boys” (1734), inflammatory and seditious, and ordered the song sheet to be publicly burned although no author or publisher could be identified. Among the protest songs that articulated colonial discontent and stirred seditious activities before the American Revolution (1775–1783) were “American Taxation” (1765), “The Liberty Song” (1768), “The Taxed Tea” (1773), and “Liberty’s Call” (1775). Rebellious colonists appropriated a bright ditty called “Yankee Doodle” (c. 1755–1775), originally written by a British surgeon to poke fun at rustic American colonial soldiers, and rewrote the words so that its upbeat melody would inspire their troops and serve as a protest against British arrogance. The colonists sang this song at Lexington and Concord to insult the retreating British soldiers, and it became wildly popular among American troops. Songs were spread by newspapers, periodicals, ballad sheets, and broadsides, and by singing in public houses and military encampments.

With the help of these early print media and face-to-face communications, music sustained insurrectionary impulses in France as well. The French Revolution (1789–1799) generated nearly three thousand popular songs, including a huge hit in 1790 “Ça Ira” (“It’ll Be Okay” or “There is Hope”), which people sang in the streets of Paris, Lyon, and Marseilles. Inspired lyricists altered the words as the revolutionary cause became more radical (“aristocrats to the lampposts, we’ll hang them . . .”). During the dark days of foreign invasion, “La Marseillaise,” composed in April 1792 by Claude-Joseph Rouget de Lisle as a simple marching song, sustained revolutionary initiative. French revolutionary forces sang it as a morale booster on the way to Paris to battle the Prussian and Austrian armies that had invaded France to restore the old monarchical regime. Originally entitled “Chant de



The Industrial Workers of the World put their songbook together “to fan the flames of discontent.”

guerre de l’armée du Rhin” (War Song of the Army of the Rhine), it became so popular with volunteer units from Marseilles that it was renamed in their honor. Supporters of the revolution all over France learned the tune and lyrics, and it became the French national anthem in 1795. Although the song has seven verses, today only the first verse and chorus are usually sung. The fourth verse is typical of the song’s defiant, martial, and rousing tone. Even in the twenty-first century, “La Marseillaise” embodies the passion, sense of purpose, and commitment that aroused millions of French people to overthrow their monarchy and fight for liberty, equality, and fraternity.

Singing lifted people’s spirits, made revolutionary ideas and sentiments accessible to the illiterate majority, promoted solidarity across social groups, and invited the dispossessed classes of France to proclaim over and over again their devotion to the Revolution. “La Carmagnole,” both a song and a dance, took its name from the short jacket worn by militant *sans-culottes* (the term, meaning “without knee breeches,” applied to the working-classes). When first sung in August 1792, the song insulted the queen, Marie Antoinette, and anyone who opposed the Revolution.

The French revolutionary tradition provided fertile ground for “L’Internationale” (The International), a song that would become the anthem of the nineteenth- and twentieth-century revolutionary proletariat. Inspired by the establishment and subsequent destruction of the radically democratic and egalitarian

Paris Commune of 1871, Eugène Pottier wrote the lyrics shortly after the demise of the Commune; the French factory worker Pierre Degeyter added a melody in 1888. The song became an international hit as the Industrial Revolution spread across Europe, the United States, and the world. Embraced by socialists, communists, anarchists, and trade unionists, and sung at every one of their meetings and demonstrations, captured well the grassroots, militant, democratic, and anti-capitalist spirit of the early socialist and communist movements. Between 1890 and 1945, “L’Internationale” rivaled “Amazing Grace” and “Silent Night” in international popularity.

Since “L’Internationale” was sung on every continent and in scores of languages, there are various versions of its lyrics adapted to meet the needs of working people in different lands. Translated into Russian in 1902, it was sung at socialist (Menshevik and Bolshevik) and organized workers’ meetings before 1917 and became a crucial expression of commitment to the egalitarian, collective, and emancipatory ideals of the October (Bolshevik) Revolution (1917), and of the world socialist movement during the Russian Civil War (1917–1921). The English version, recorded in the United States in 1935, included references to the Russian Revolution.

An ocean away, *corridos*, folk ballads popular in Mexico from the 1880s to the 1930s, nurtured a sense of popular independence and defiance during the Mexican Revolution (1910–1920). They typically recounted the deeds of individuals whose conduct served as a model to the community. *Corridos* about the revolutionary folk heroes Pancho Villa and Emiliano Zapata conveyed stirring messages of nationalism, class anger, resistance, and hope; not only did such songs ridicule upper-class rule and *gringo* intervention, they recruited peasant fighters for the armies of Villa and Zapata. *Corridos* about Pancho Villa generally described particular battles or his valor, leadership, defiance, and courage. *Corridos* about Zapata were similarly praiseful but more closely tied to land reform and his commitment to end the exploitation of peasants. The theme of defiant and armed resistance to authority conveyed by

such *corridos* had great appeal to a peasantry that enjoyed little economic and political freedom or mobility. Singers (*corridistas*) played in town squares on market days and sold broadsides of new or popular *corridos*. Mexicans who could not read often purchased the broadsides as mementos of the occasion and, hoping to revive the allure of the song as it had been performed, made the broadsides available to literate members of the community. As a folk art form, however, *corridos* were extremely malleable and spread from town to town during the revolution; most were memorized, not written down, so the content changed as it was remembered differently or altered to reflect local sensibilities.

As early as the 1920s leaders of the Communist movement in China believed music could win converts to the Communist cause. Chinese recognition that music had the power to sway people’s outlook and emotions in fundamental ways went back at least twenty-five hundred years to the time of Confucius. Leaders like Mao Zedong (1893–1976), who had peasant origins, understood that song enabled the illiterate peasant majority to express and comprehend everyday needs and realities. Consequently, Communists held that music was the most appropriate and effective medium to teach their revolutionary perspective. They rewrote lyrics that had long accompanied traditional folk melodies and made them into songs of revolution. “Nanniwan” (1943), based on a tune from northern Shaanxi, was such a song. A new genre of Communist revolutionary music during the Chinese Civil War (1927–1949) employed a marching, resolute tempo expressing worker and peasant unity; like the reworked folk genre it protested current conditions but remained optimistic about the future and the outcome of the armed struggle against capitalism, imperialism, and feudalism. Red Army troupes often performed the songs to entice enlistments.

This belief in the politically mobilizing power of music continued after the Communist victory in 1949 when the party controlled print, broadcast, and performance media and Cultural Revolution (1966–1976) was on the horizon. A prominent example was “The East Is Red” (c. 1960) a song that served to rally



X-Ray Spex, Rock Against Racism Rally, Victoria Park, Hackney, East London, 30 April 1978. Photo by Andy Wilson, Creative Commons license.

pro-Mao forces in the People's Republic of China. In keeping with the traditions of Chinese Communist political music, a farmer from Shaanxi province reputedly created the song by putting new lyrics to the tune of a local folk song.

Music of Solidarity and Organizing

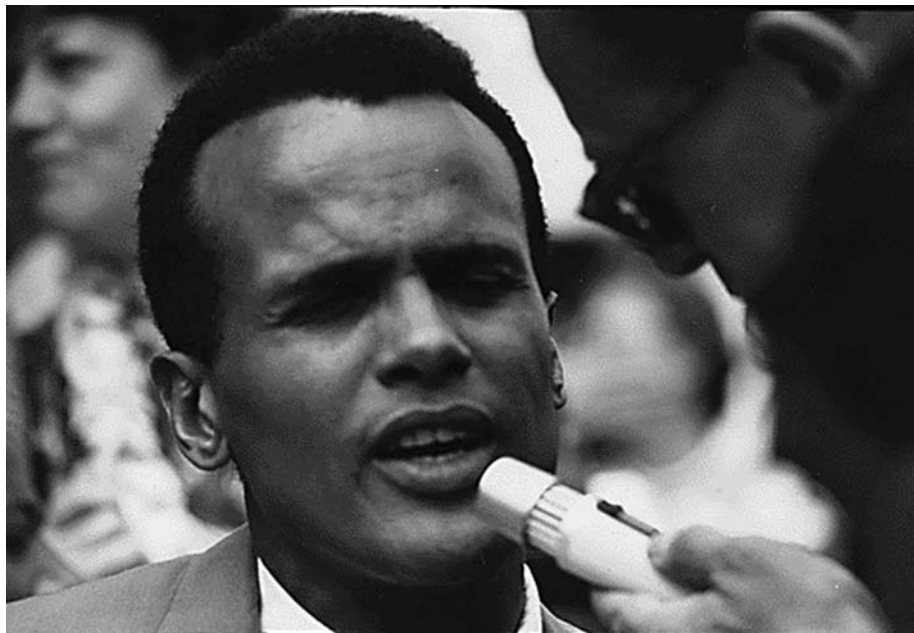
In order to inculcate values that were opposed to the individualism, competition, and nationalism inherent in mainstream social and cultural institutions, the Socialist and Communist parties before World War II provided social environments for their members with football clubs, marching bands, plays, musicals, gymnastics, picnics, summer camps, schools, and consumer cooperatives. All these organizations and events were aimed at socializing individuals into working-class solidarity, cooperation, and mutual support. Marching bands accompanied all large leftist demonstrations.

German Communists in the 1920s and 1930s used music to energize their recurrent street protests with songs like "Up, Up Let's Fight." Bertolt Brecht wrote the lyrics, appropriating a thirty-year-old tune popular with supporters of the deposed German emperor. Such militant marching songs primed Communists

for frequent high-stakes street battles with police and Nazis. While mischievously grounded in German popular culture, the songs boosted morale and advertised the Communists' determination to press the class struggle wherever they went. Communists disseminated such songs extensively through daily newspapers and new forms of photojournalism, such as the astonishingly successful *Arbeiter-Illustrierte-Zeitung* (*Workers Illustrated News*). They also used phonograph recordings, live musical performances, and radio broadcasts to build and sustain a broadly proletarian antiestablishment movement during the Weimar Republic.

Protest Music in the United States

In the United States the Industrial Workers of the World—the IWW, or Wobblies—strove to organize all workers, skilled and unskilled, into one big worldwide union regardless of trade or specialization; their radical labor organizers, including Joe Hill, wrote songs that carried the union's message to those who had little formal schooling. The IWW, founded in 1905, relied on songs to encourage protest and resistance because organizers learned that when people sang a song and had a little fun, they retained the



The singer Harry Belafonte, pictured here at a Washington D.C. civil rights march in 1963, was a vocal protestor of racial discrimination. National Archives and Records Administration.

message. Like other groups in other countries, Wobblies borrowed the melodies of commonly known tunes and altered the lyrical content. The Wobblies' lyrics spoke to working people's concerns, recruited them for the union, and created a common bond among them. One of their most recognized songs is "Solidarity Forever," which set new words to the inspirational and well-known American Civil War song "Battle Hymn of the Republic." Ralph Chaplin wrote lyrics that stressed unity over individual efforts—including a strong and defiant chorus—and reflected the IWW's struggles to organize unskilled workers against the bosses. Wobbly songs sustained workers during long strikes (Goldfield, Nevada, in 1906; Lawrence, Massachusetts, in 1912; Paterson, New Jersey, in 1913; and the Mesabi Range, Minnesota, in 1916) and in protest marches before and during World War I. Typical of other militant movements with few economic resources, Wobblies spread their songs by means of newspapers, ballad sheets, and songbooks, and by singing in taverns and itinerant work camps.

The tradition of using popular folk music as a recruitment and organizing tool and as a means of protesting conditions for workers continued in the United States in the 1930s. Some songwriters, such as Woody Guthrie and the folk musicians he inspired, helped recruit for the Congress of Industrial Organizations (CIO) labor federation. Guthrie spread a message of populist protest and hope across the country

during the Great Depression by making phonograph recordings and performing live at work camps. As unions gained collective bargaining rights in the late 1940s, however, U. S. labor songs lost their revolutionary edge and leftists were purged from unions. Still, people facing injustice turned to song to express their hopes, frustrations, and alienation and to protest their conditions.

Music sustained the struggles of civil rights protesters in the United States after 1960. Songs used by union organizers to foster solidarity became staples of the civil rights movement's sit-ins and freedom marches; these included "We Shall Not Be Moved," a black spiritual whose lyrics were changed by striking African American textile workers in North Carolina in the 1920s, and "We Shall Overcome," a Baptist hymn originally called "I'll Overcome Some Day" (tobacco-worker organizers altered its lyrics in the 1940s). Both songs expressed faith that the future would be better than the past, that their cause was just, and that patient nonviolence would succeed in the end. Of the many musical styles prevalent in the early 1960s, only folk music—whether it was developed by the Wobblies and Woody Guthrie and shaped by black spirituals and rhythm and blues, or whether it took shape in "freedom songs" performed by Bob Dylan, Joan Baez, Pete Seeger, Odetta, and Harry Belafonte—protested racial discrimination and became central to building support for the civil rights movement across the United States. In fact, the term

Music doesn't lie. If there is something to be changed in this world, then it can only happen through music. • **Jimi Hendrix (1942–1970)**

“protest music” was coined at this time to identify the socially critical folk music of this era.

This socially conscious stance of folk performers informed the views of a new generation of young Americans, and young blues and rock musicians began incorporating socially aware lyrics into their songs. Stylistically, rock and roll had been considered dangerous music in the United States since the 1950s: it was a raucous music of youthful outsiders that combined African American and Anglo American musical styles, and was performed by black and white musicians for racially mixed audiences. As the civil rights movement peaked and the anti-Vietnam War movement began to pick up steam in the mid-1960s, folk and rock music were at hand with new antiestablishment content and style. An entire oppositional counterculture grew among young people in the late 1960s, and antiwar songs like “War,” an energetic protest song in the African-American call-and-response tradition by Edwin Starr, “Fortunate Son” by Creedence Clearwater Revival, “The Unknown Soldier” by the Doors, and “Ohio” by Crosby, Stills, Nash, and Young made the Top 10 in the pop music charts. Jimi Hendrix’s irreverent, psychedelic rendition of “The Star-Spangled Banner” at Woodstock in the summer of 1969 brought 400,000 fans to their feet. These songs and others found wide play on commercial radio and television (and at live converts) aimed at adolescents and young adults. Responding to and helping to create the antiestablishment mood of a large section of youth, the protest songs were commercially successful, sold millions of records, and were easily reproduced and played using tape recorders and, after 1970, cassette tapes. They entertained and helped politicize millions of people, bringing them out into the streets to engage in mass civil disobedience in protest of the Vietnam War, and to rail against the Democratic (and later Republican) administration that conducted it.

New Genres for Protest and Mobilization

In Great Britain rock emerged as a highly politicized genre in the 1970s under the influence of mellow

yet “ragged” Jamaican reggae and defiant, anarchist, staccato, hard-edged punk music. Commercial radio, transistor radios, and cassette tapes made the music very accessible to youths who approved its socially critical edge and stylistic innovation but lived outside Jamaican and punk enclaves in Britain. Style and content merged: the musicians and leftist politicians who formed Rock Against Racism (RAR) focused on mobilizing working-class youth against racist ideology and organizations, in particular the neo-fascist National Front Party (NF), which had been gaining electoral support among white working-class youth. RAR drew on rock’s defiant style to make political statements and to take public attention away from the NF. Drawing on musical styles with multicultural roots, the RAR’s main slogan was “Black and White / Unite We Fight!” The biggest RAR events took place between 1976 and 1978, when bands like the Clash, Steel Pulse, Stiff Little Fingers, and X-Ray Spex played at giant marches and concert performances in London and elsewhere. Well into 1979 RAR also issued a series of instant public responses to local, racially motivated hate crimes and violence. By 1980, the music of protest had served its purpose: the NF was a spent force in British politics.

From the 1960s onward British and American blues and rock, influenced by African musical forms, influenced musical styles in other countries. As old and new imperial powers they had economic and cultural reach worldwide, and they encouraged and often funded the spread of mass communication technologies—such as commercial radio and television, vinyl recordings, inexpensive cassette tapes and tape players, and transistor radios—through foreign-aid subsidies and new multinational media corporations. Once in place these mass communication technologies served to disseminate indigenous protest.

In Argentina, *rock nacional* (national rock) developed as part of a politicized youth counterculture that opposed the military dictatorship of the late 1970s and early 1980s, explicitly criticized the government, and created an oppositional movement that contributed to the restoration of democracy. The progressive and politicized lyrics of *nueva canción* (“new song”), a protest-music movement of the 1960s and 1970s with

close ties to South American socialist parties, gained great popularity throughout Latin America, especially in Andean countries. Fusing traditional folk-music idioms with commercial Anglo American rock styles, its lyrics commented critically on poverty, social inequality, and imperialism and advocated for greater democracy, social empowerment, and human rights. The movement in Chile was suppressed after the 1973 coup and continued its protests underground.

In the early 1990s, a Haitian group, Boukman Eksperyans, wrote and performed Creole songs that drew on voodoo beliefs and merged them with imported funk rock and dance music. (*Boukman* is the name of the enslaved voodoo priest who instigated the 1791 revolt among slaves that led to Toussaint L'Overture's revolt, which finally gained Haiti's independence from France in 1804, and *eksperyans* means "experience" in Creole, so the group's name had political resonance in Haiti.) Their song "Kem Pa Sote" ("You Don't Scare Me") rebuked the corruption and brutality of the military regime that in 1991 had overthrown the elected president, Jean-Bertrand Aristide, and it inspired an insurgent movement among the Haitian people that ended the dictatorship.

The Israeli peace movement has long used music at its large open-air rallies to oppose government policies regarding Palestinian rights and Palestinian sovereignty. During the First Intifada (1987–1993), songs like *Yorim VeBokhim* ("Shoot and Weep"), which was banned from the radio for months on charges of subversive content, protested Israeli government policy in Palestinian-occupied territories. Israeli peace groups and opponents of Israel's barrier in the West Bank transformed Pink Floyd's late-1970s critique of the British school system, *Another Brick in the Wall*, into a song of social protest regarding conditions in Israel/Palestine, rewriting the original lyrics ("We don't need no education / We don't need no thought control") to read: "We don't need no occupation / We don't need no racist wall." For its part, Palestinian political music has protested the Israeli state as a colonial power and expressed the need for Palestinian sovereignty and a homeland. Appropriating the musical form of hip-hop, the Arabic group DAM rapped in Arabic and Hebrew about national

aspirations, national oppression, social and political inequality, and Israeli government brutality.

In the mid-1970s, political protest led to a new musical genre in the African country of Zimbabwe that was partly influenced by Jamaican reggae (called "African roots music" by its fans and performers) and Anglo American rock being broadcast on commercial radio and recorded onto inexpensive and easily distributed cassettes. This new African music, created by Thomas Mapfumo (b. 1945) and other indigenous singer/songwriters, articulated black peoples' experiences under (and their resistance to) the white Rhodesian colonial and settler system. This genre, which became known as Chimurenga (struggle or liberation) music, blended traditional Shona music with Western rock and jazz instruments and a political message full of symbolic meanings, traditional proverbs, and rock's rebelliousness. These innovations transformed Zimbabwean popular music of the 1970s. Black Zimbabweans flocked to the performances of Chimurenga artists, bought their vinyl singles, and listened to recordings on commercial radio before the white government banned this music. After the ban they listened to it on guerilla radio and bootlegged cassettes. They instantly identified with the music and Shona lyrics, and Mapfumo in particular became a household name. The upbeat, energizing music with its socially critical lyrics but easy, swaying rhythms galvanized the African population and encouraged young people to cross the border into Mozambique for training in guerrilla warfare. In the eyes of many Zimbabweans, including the first president of Zimbabwe, it was Chimurenga music that won the liberation war by invoking the wisdom and guardianship of their ancestors and by emphasizing the necessity of all Zimbabweans to live together, suffer together, and struggle together for the good of all. Mapfumo remains a living cultural icon in Zimbabwe today.

Implications and Directions

Because music is such an integral part of people's lives it will continue to shape and influence their perceptions of what is important politically, their personal and social aspirations, and the ways in

which these are expressed. It is one cultural arena in which ideological struggle and political mobilization will continue to take place as music circulates along with other cultural goods and commodities, sometimes in face-to-face communication or via print and broadcast media, but increasingly via new media technologies like MP3 players; iPods and other personal, portable media players; and music- and video-sharing websites and social networking websites (Web 2.0).

Music has promoted a variety of political ideas and protests, with different cultures and groups appropriating and creating music suitable to their goals. In the 1960s and earlier, music was an integral part of what were more or less organized political movements. Where populist political movements declined, as in the United States and much of Europe in the 1980s and 1990s, politicized musicians took the lead in staged commercialized “mega-events” like Live Aid, Farm Aid, and Band Aid. In these concerts, music itself provided the organizing vehicle. It was mass music that mobilized masses of people. The point was not to protest political or social inequality or to foment revolution but to raise money for famine victims in Africa or dispossessed farmers in the American Midwest—and music still called people to action.

Writing in the late 1990s, Ron Ayerman and Andrew Jamison noted that protest music can still conjure a movement and its meaning long after the movement has ceased to be active; protest music can encode and embody forms of collective meaning and memory; and it can foster processes of identity and identification vital to the emergence and continuance of new political protest movements.

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See also Labor Union Movements; Peacemaking in the Modern Era

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Mysticism

Humans can depart from normal states of consciousness in many different ways—by holding their breath, dancing together, taking drugs, or contemplation. What happens differs from case to case, but people often claim such experiences as a direct encounter of God or other supernatural spirits. Most religions made room for such mystic visionaries, and their lives often inspired new departures, especially when organized groups arose to pursue mystic visions together.

Mysticism is a type of religious experience claimed to involve a direct and personal experience of God, or of some eternal, spiritual element in the universe. Most of the major world religions have a significant mystical dimension to their faith. It is sometimes the case, however, that such mystical trends are not regarded as an orthodox feature of the religion. Although mystical experience differs somewhat from religion to religion, there appear to be features in common. Mystics typically subscribe to forms of spiritual discipline involving meditation or the repetition of the name of the divine. Such disciplines may often involve asceticism or withdrawal from the world. Mystics usually aspire to achieve a form of merging with God, or of spiritual salvation. The process of spiritual training undergone by mystics is often supervised by a spiritual adept or teacher. Within a particular religious tradition, the experiences associated with mysticism may be written in spiritual texts or transmitted orally. However, since the mystical experience is essentially individualistic and subjective, there may be difficulties in comparing the experience of one person with that of another.

It seems reasonable to suppose that people have, from very ancient times, attempted to gain a direct relationship with spiritual elements in the world around them. But documented traditions within the major faiths are much more recent. Hinduism has many traditions that may legitimately be described as mystical, most notably the practice of yoga. This mystical philosophy may be dated to the Upanishads of approximately 500–400 BCE and has been practiced in various forms until the present day. Yoga emphasizes the control of breathing as an aid to concentration and meditation. It is often accompanied by a renunciation of the world and by a tendency toward asceticism. The goal of yoga is that one should obtain union with Brahman, the spiritual force of the universe, and hence release from the cycle of rebirth. The use of yoga postures, or asanas, is but one element of yogic mysticism. In more recent times, celebrated practitioners of yoga include Ramakrishna (1836–1886) and Vivekananda (1863–1902).

Sikhism also espouses a form of mysticism whose goal is a direct experience of the divine. The principal approach is that of *nam japan*, or repetition of the name of God. This method, along with a meditation upon the nature of God, was the mystical approach advocated by the founder of Sikhism, Guru Nanak (1469–1539?). In another Indian religion, Jainism, there is an emphasis upon asceticism, and also meditation. Jainism was founded by Vardhamana (Mahavira), who lived from approximately 599–527 BCE. The ultimate goal of Jaina mysticism is *moksha*, or release from the cycle of birth and death.

Buddhism, founded by Siddhartha Gautama (c. 566–c. 486 BCE), subsequently known as the Buddha, is arguably a mystical religion, although it does not



For several hundred years mystics have been drawn to standing stones found throughout northern Europe, such as these in Avesbury, England.

incorporate any form of divine figure. The practice of Buddhism is derived from the enlightenment experience of the Buddha, achieved after a prolonged period of meditation. The express purpose of Buddhism is to enable human beings to eliminate their feelings of suffering, and the practice of meditation is one of the principal methods used to achieve this. The initial aim of meditation is to calm the fluctuations of the mind, and then to gain insight into the nature of existence. In this way the Buddhist comes to understand that the world is impermanent, and that through nonattachment to the world, one can begin to eliminate feelings of suffering. Eventually

the Buddhist aspires to a state of supreme calmness and equanimity known as enlightenment. Buddhism spread from India to Southeast Asian countries such as Thailand and Cambodia, and north to Tibet, China, and Japan. The Buddhist tradition that developed in Japan became known as Zen, and one of its main exponents was Dogen (1200–1253). Zen has had an important influence on Japanese art and poetry, an example being the work of the poet Matsuo (Basho) Munefusa (1644–1694). Buddhism continues to influence Japanese cultural life to this day.

The Daoist tradition in China advocates a tranquil life, and one in which the aspirant seeks to live in tune

Religion is to mysticism what popularization is to science. • **Henri Bergson (1859–1941)**



Headquarters of Theosophical Society at Adyar, India. In 1875 Madame Blavatsky, a Russian mystic and spirit medium, founded the Theosophical Society in New York with her friend, Colonel Olcott. The organization was a boon to the spiritualism movement. Photo by Klaus Klostermaier.

with the natural world. The Daoist attempts to live in harmony with the Dao, or the creative energy that is present throughout the natural world. The *I Ching* is usually regarded as the principal text of Daoism, and was historically attributed to Laozi in approximately the sixth century BCE.

The mystical tradition in Islam is known as Sufism, a term that may be derived from *suf*, the Arabic for wool. This may refer to the tradition of Sufis wearing a cloak of rough wool. This very much reflects the ascetic tendency, which is an element in Sufism much as it is in other mystical traditions. The aim of Sufis is a direct experience of God. Sufis often traditionally

associate themselves with a religious community, led by a sheikh or spiritual leader. Sufism continues to be an active tradition in the present day.

The approach to mysticism within Judaism is known as kabbalah, and it emphasizes a direct understanding of God as being the force behind the entire universe. Judaic mysticism utilizes meditation and contemplation, and encourages the aspirant to develop a sense of love toward humanity.

Within Christianity the history of mysticism is connected to some extent with that of monasticism, which evolved in Egypt during the third and fourth centuries CE. The early monastics led extremely



simple lives, withdrawing from the world and devoting themselves to God. The monastic tradition was placed on an established basis by Saint Benedict (c. 480–547 CE). Noted Christian mystics include Saint John of the Cross (1542–1591), Saint Teresa of Ávila (1515–1582), and Jakob Böhme (1575–1624).

Mystics have generally attempted to seek the most direct spiritual experience of their particular religious tradition. In so doing, they have often been perceived as a threat by the religious orthodoxy. From time to time, mystics have given expression to subjective experience, and while this may have been contrary to established tradition, it has been a reminder of the attempt to seek direct understanding of the divine. To that extent, mysticism is still an important contemporary tradition, particularly for those who seek that form of religious experience.

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See also Buddhism; Daoism; *I Ching*; Jainism; Philosophy, Asian

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From a relatively obscure position in the French military, Napoleon quickly rose at the beginning of the nineteenth century to become the ruler of almost all Europe. He is remembered in world history for breaking new ground in promoting equality, religious freedom, education reform, and introducing a new civil code, the Code Napoleon.

Napoleon Bonaparte was born in Ajaccio, Corsica, and graduated from a French military school as an artillery lieutenant. In 1793 he scored his first victory as an officer in the French Revolutionary army, destroying ten British ships in the harbor at Toulon. He was then made brigadier general, at age twenty-four. On 5 October 1795, Napoleon's ultimate triumph of force was foreshadowed when he used artillery to fire upon a Royalist mob—his famous “whiff of grapeshot”—to protect the Revolutionary government in Paris. Now a national hero, he was promoted to commander-in-chief of the French forces in Italy. From this position he would eventually go on to rule almost all of Europe.

Napoleon married Josephine de Beauharnais in 1796 and immediately left to lead the French army in Italy, which was fighting the Austrians. He was soon victorious and formed the Cisalpine Republic out of part of northern Italy.

When an invasion of England proved impossible, in 1798 Napoleon was sent to invade British-controlled Egypt. He was generally successful in his land battles, but Britain's Vice Admiral Horatio Lord Nelson destroyed his fleet in the Battle of the Nile. Nonetheless, the discovery of the Rosetta Stone and

the many scholars, artists, and cartographers who accompanied Napoleon on the expedition laid the foundation for modern Egyptology, one of his enduring academic legacies.

When Napoleon returned to France, he took control of the government in the coup d'état de Brumaire (9–10 November 1799), becoming, at thirty-seven, First Consul of France. Again faced with the Austrians in northern Italy, Napoleon led his army through the Alps and won the Battle of Marengo on 14 June 1800.

Later in 1800, Napoleon oversaw the drafting of his Civil or Napoleonic Code. Perhaps his most important legacy, Napoleon's code organized the thousands of Royalist and Revolutionary decrees, abolishing feudal privileges and establishing equality before the law. The code also established freedom of religion and the separation of church and state. In 1801 he smoothed relations with Rome by signing the Concordat with Pope Pius VII, bringing Catholicism back to France while, over the Pope's objection, maintaining freedom of religion.

The 1802 Peace of Amiens with England allowed Napoleon to concentrate on domestic reforms, including a nationwide infrastructure improvement program and the first moves in Europe toward universal public education.

On 2 December 1804, backed by the Senate and the people, and to thwart efforts by Royalists to assassinate him, Napoleon consolidated his power still further, and was declared Napoleon I, Emperor of the French. However, his imposition of the progressive Napoleonic Code over his successive European conquests, effectively dismantling the centuries-old conservative



Jacques-Louis David,
*Napoleon at the
St. Bernard Pass* (1801).
Oil on canvas. Napoleon
appointed David, a
supporter and prominent
artist in the Neoclassical
movement, as his
official court painter.
Kunsthistorisches Museum,
Vienna.

European social order, arrayed all the monarchies of Europe against him, and war soon returned.

In 1805, abandoning plans to invade England, Napoleon moved his Grande Armée to central Europe to meet oncoming Russian and Austrian armies. His greatest victory was the Battle of Austerlitz on 2 December 1805—although it was diminished somewhat by Nelson’s earlier destruction of the French fleet off the coast of Spain at Trafalgar. At Austerlitz, Napoleon defeated a larger force by employing masterful military and psychological tactics.

In 1806, Prussia and Russia declared war on France. Napoleon conquered Prussia and signed a treaty temporarily ending hostilities with Russia in 1807. In 1806 he established the Continental System, an economic blockade of England that lasted six years, doing economic damage on both sides but ultimately failing to break the island nation. He put his brother Joseph on the Spanish throne, but Arthur

Wellesley, the future Duke of Wellington, invaded Spain and the French forces eventually withdrew.

When Josephine proved unable to bear children, Napoleon reluctantly divorced her and in 1810 married the Austrian Emperor’s daughter, Marie Louise. They had a son in 1811.

By 1810, England and Russia were the only major powers outside the French Empire. Czar Alexander had quit the Continental System, demanded that France abandon Poland, and was prepared to invade. Napoleon moved first, and in 1812 led his army into Russia. He won at Borodino on 7 September and entered an abandoned Moscow, which was soon engulfed in flames ignited by Russian partisans. Napoleon withdrew, and the campaign cost him 90 percent of his army. In October 1813, a massive coalition of forces defeated Napoleon at Leipzig in what became known as the Battle of Nations, sealing the fate of the first French Empire.



Jacques-Louis David, *Napoleon in His Study* (1812). Oil on canvas. National Gallery of Art, Washington, D.C.

Paris fell to allied forces in May 1814. Napoleon abdicated on 11 April and was exiled as Emperor of Elba, a small island off the coast of Italy. On 1 March the following year he returned to France to reclaim his throne from the Bourbon Restoration of Louis XVIII. He took Paris on 20 March without firing a shot, beginning the period known as the Hundred Days. He wanted only to govern France, but his old enemies soon moved against him, and after initial success he was defeated at Waterloo, in Belgium, on 18 June 1815. Exiled to the tiny British island of Saint Helena in the southern Atlantic Ocean, he dictated his memoirs and died on 5 May 1821, officially of stomach cancer but possibly, as many historians now believe, of poisoning. His remains were returned to Paris in 1840.

Often considered the father of modern Europe, Napoleon's legacy goes far beyond his military genius, and is subject to a wide variety of interpretations.

Although he promoted the ideas of equality, meritocracy, religious freedom and a common system of law throughout his empire, he was an absolute ruler, suppressing many with whom he disagreed. Nonetheless, the Napoleonic Code remains the basis of French law, and it was the primary influence on nineteenth-century civil codes throughout continental Europe and Latin America. Napoleon's sale of the Louisiana Territory to the United States helped lead to that nation's greatness, and he had a profound influence on the rise of European nationalism: his efforts on the Italian peninsula and in the German principalities foreshadowed the unification of both Italy and Germany. Though the restored old regimes remained influential for a time, Napoleon's example of leadership based on merit eventually became the goal of Western nations.

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International Napoleonic Society

See also Napoleonic Empire

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Napoleonic Empire

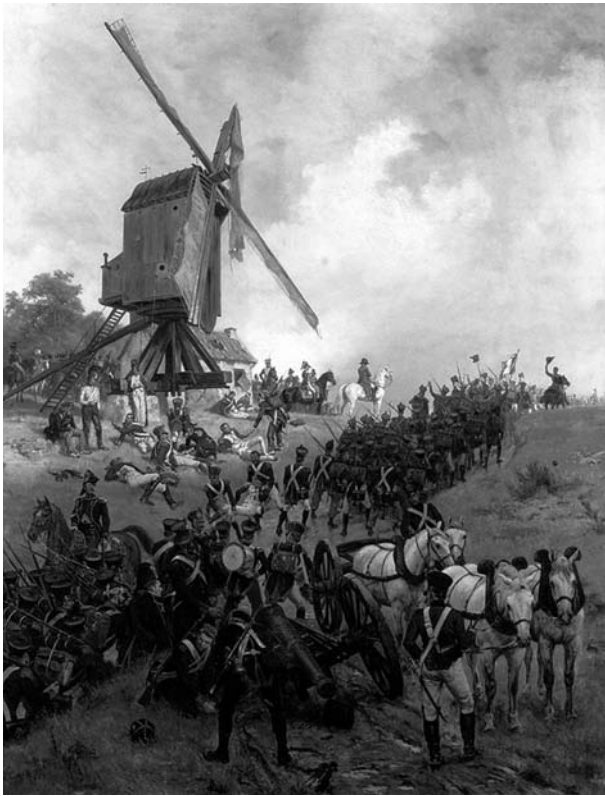
The Napoleonic Empire (1799–1815) was the largest, most politically uniform state Europe had seen since Roman times, and it laid the foundation for many fundamental institutions of modern Europe.

When Napoleon Bonaparte became First Consul and head of the French state in November 1799, France had already been at war with the great European powers since 1792 and had acquired several adjacent territories as a consequence. Thus, the First French Republic, founded with the overthrow of Louis XVI in August 1792, had already become an empire by 1799. In 1795, France annexed the Austrian Netherlands, present-day Belgium, turning them into French departments governed from Paris under French laws and institutions. In 1797, they did the same with the all the areas of the Holy Roman Empire—now Germany—on the left (western) bank of the Rhine. In 1795, the United Provinces, the modern-day Netherlands, was renamed the Batavian Republic under a puppet government. In 1796, Napoleon created a “satellite republic” in northern and central Italy with himself as its president—the Cisalpine Republic—and its capital at Milan. In 1798, occupying French armies set up the Roman and Parthenopian republics over the Papal States and the mainland parts of the Kingdom of Naples, respectively, in southern Italy, and the Helvetic Republic in present-day Switzerland; the first two lasted only a few months, and were soon overthrown by an internal revolt; the third is still the official name of the Swiss Confederation. Until a series of military reverses in 1799, France effectively controlled most of western Europe.

The Creation of the Inner Empire, 1800–1805

Napoleon’s first task was to recapture these territories from the Austro-Russian coalition and reestablish French hegemony in one form or another. This he did in a series of well-coordinated military campaigns in 1799 and 1800. By 1801, a general peace had been concluded with all the major powers, culminating in the Peace of Amiens with Great Britain in March 1802. Although Britain and France were soon at war again, France did not return to war with the continental powers until 1805, allowing Napoleon time to consolidate his rule in France itself, in northern and central Italy, and in the Low Countries. Simultaneously, Napoleon cultivated the larger states of western and central Germany within the Holy Roman Empire, winning them over from their traditional allegiance to the Hapsburg emperors with promises of territorial growth at the expense of the tiny imperial states and greater control over their states if freed from Hapsburg domination.

By 1805, the Napoleonic Empire is best expressed as a power bloc, a hegemony, over most of western and southern Europe. This hegemony was exercised in three different ways. The left bank of the Rhine, modern Belgium, and northwestern Italy were annexed directly to France; satellite states were recreated in the Netherlands and north central Italy; the rest of western Germany was the preserve of states closely allied to France: Nassau, Baden, Bavaria, and Württemberg chief among them. These territories became deeply imbued with core French institutions, either by their direct imposition or through free but



Ernest Crofts, *The Battle Of Waterloo* (1877).
Oil on canvas. The battle on 18 June 1815
effectively ended the Napoleonic Empire.

conscious imitation. These were principally the Civil Code, which guaranteed open trials and equality before the law, and the centralized state based on prefects—civil servants appointed by the central government—and departments, the units they administered. The satellite states received constitutions modeled directly on that of France, which created a strong executive and a centralized bureaucracy; everywhere, local laws, weights and measures, currency, and administrative structures were replaced by those developed by the French revolutionaries since 1789. This also meant the abolition of the vestiges of feudalism, of provincial and noble privileges, and the confiscation of the properties of the church. To be within the French Empire meant joining a uniform, standardized political system; the old orders were swept away in every area the French took under their definitive control. Taken together, the areas under Napoleonic hegemony before 1805 became an “inner empire,” the true core of Napoleonic power. Here, French public institutions and legal and administrative practices were readily assimilated, at least by the

local elites, and usually endured after Napoleon’s military eclipse and fall in 1814–1815. This was crucial for the future development of Europe, because the embedding of the Civil Code and the centralized state laid the legal and institutional foundations of many western European states.

These reforms were aimed primarily at increasing state power, and that new power was enforced by the creation of the gendarmerie, a paramilitary police force mainly devoted to patrolling the countryside. Particularly after 1805, when large-scale war erupted again in Europe, this new force was used primarily to impose mass conscription and heavy taxation on peasantries for whom central authority had been a mere shadow before Napoleonic rule. Even in the more stable period of peace, 1800–1805, the arrival of the new state came as a traumatic shock. Much of southern and western France remained under virtual martial law in these years; northern and central Italy saw widespread, if localized, peasant revolts; very traditional forms of local justice and government, based on arbitration, were expunged from rural parts of the Rhineland for example. Independently, the German princes met similar opposition within their own borders. Some aspects of Napoleonic rule, such as the religious settlement or the ruthless imposition of conscription, were never really accepted outside France, or over much of the south and west of France itself.

Nevertheless, the propertied classes, which also included much of the peasantry, benefited from the higher levels of law and order brought to the countryside by the gendarmerie, particularly by wiping out banditry. Justice became quicker and cheaper to obtain under the Code than in the past, and was administered by an honest, professional magistracy. The fair and equitable reparation and administration of property taxes was largely achieved by the compilation of accurate land registers (the cadastre), although indirect taxes became very high under Napoleon. The prefects proved able and honest local administrators, all of which left a deep, favorable impression on the elites of western Europe, even among those politically opposed to Napoleon.

In the eyes of empire builders men are not men but instruments.

• **Napoleon Bonaparte (1769–1821)**

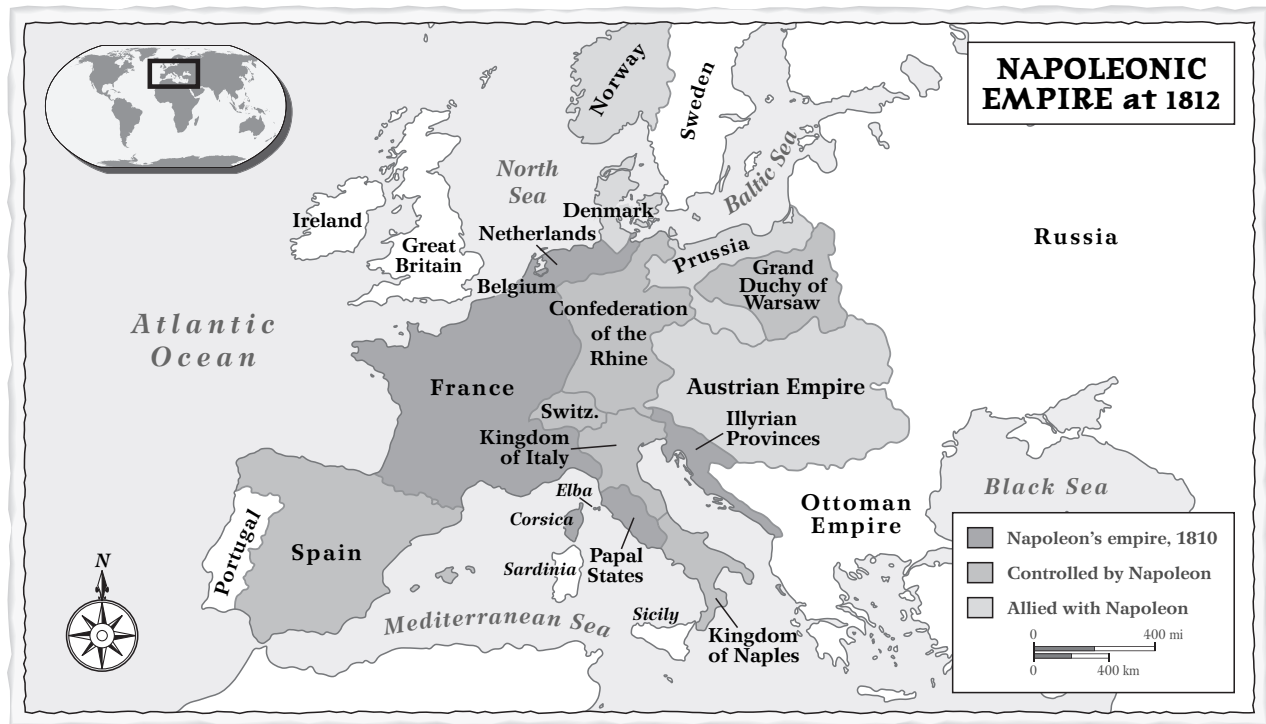
Democratic politics, however, formed no part of Napoleonic rule. The western European experience of the new Napoleonic state did not include meaningful representative, parliamentary government. Also, as the core of the Napoleonic Empire took shape, that core was not wholly French. Many non-French areas, particularly the allied German states, the Rhineland, the Low Countries, and northern Italy, absorbed French institutions and proved better sources of taxes, conscripts, and administrators than western or southern France, where resentment of the revolutionary reforms of the 1790s persisted. When the empire expanded through war from 1805 onward, these areas came to form an “inner empire” around the new territories to the east and south.

By 1805, the Napoleonic Empire had emerged as a direct challenge to other European empires in several senses. Its territorial expanse and the material and human resources it controlled made it an obvious military threat and a regional power of the first order, at least in western and central Europe. At a more structural level, its compact territorial nature and, above all, its centralized, uniform administrative system marked it out as very different from the looser, more arbitrational imperial model of the Holy Roman Empire and of the Habsburg monarchy. On one level, Napoleon now chose to imitate his rivals; on another, they chose to imitate him. In December 1804, Napoleon crowned himself “Emperor of the French,” and according to the new constitutional formula, “the French Republic was entrusted to a hereditary dynasty” (quoted from the coronation oath). In line with this, the Italian and Batavian Republics became kingdoms, the former under Napoleon but effectively ruled by his stepson, Eugène de Beauharnais, the latter under his brother, Louis. However, the real changes in the European order came in the years immediately following the creation of the empire. Fearing that the change of title heralded an attempt by Napoleon to become Holy Roman Emperor, the Habsburg emperor, Francis I, dissolved this ancient institution, and henceforth styled himself

Emperor of Austria. In the same spirit of suspicion about Napoleon’s ambitions, Austria soon joined with Britain and Russia in a new coalition against Napoleon. They were crushed by the French in a lightning campaign in 1805, and when Prussia and Russia attempted to fight on, they were defeated in a series of campaigns in 1806–1807 that took French armies into Russia itself.

The “Grand Empire,” 1805–1814

This round of victories altered the shape of the empire and of Europe as a whole in dramatic, unexpected ways. In 1805, Napoleon seized the southern Italian Kingdom of Naples, placing his brother Joseph on the throne in place of the Bourbons. The states of western and southern Germany were linked together in the Confederation of the Rhine, with Napoleon as its “Protector,” thus providing a new kind of political “umbrella” to replace that of the Holy Roman Empire; territory seized from Prussia and Hesse-Cassel in north central Germany became a new Kingdom of Westphalia, under Napoleon’s youngest brother, Jerome. Further east, following the Treaty of Tilsit, with Czar Alexander I, a new state, the Grand Duchy of Warsaw, was created from the Prussian parts of Poland. Napoleon annexed Tuscany and the Papal States, in central Italy, in 1809, and the North Sea coast of Germany, between the Kingdom of Holland and Denmark, in 1811. After 1805, the Napoleonic Empire was no longer a purely West European state system, but a pan-European Empire. Territorially, the Napoleonic Empire reached its height in 1811. Its own departments, ruled directly from Paris, numbered 130, embracing 44 million inhabitants; when the satellite kingdoms and the Confederation of the Rhine are added, the “Napoleonic hegemony” contained over 80 million people. Appearances are deceptive, however. The territories acquired in this second phase of expansion proved less ready to accept the set of laws and administrative institutions that defined the Napoleonic imperium than those regions under its control up to 1804. Feudalism was much more powerful in



northern Germany, southern Italy and, especially, in Poland, than elsewhere in Europe, nor was the principle of religious toleration readily accepted in many of these regions. Thus, the Civil Code was never fully implemented in many of these areas. Although they became important sources of conscripts for the armies and for supplies, these regions came to represent an outer empire, which never properly absorbed the essence of Napoleonic rule, although the Grand Duchy of Warsaw remained politically very loyal to Napoleon, personally, for having restored its independence. Spain was never really under Napoleonic control, and its resistance proved an important springboard for the British to relaunch the war against Napoleon effectively in 1808, several years before Napoleon's military power was smashed in the 1812 campaign against Russia. By 1814, the "Napoleonic adventure" was effectively over.

The empire's administrative and legal uniformity was not mirrored in Napoleon's economic policies. To defeat Britain by economic means, Napoleon imposed a blockade along the imperial coastlines, which proved largely ineffective. His "Continental System" was a series of treaties erecting customs barriers protecting France from all European competition, even within the empire, creating a "one-way common market."

The Napoleonic Legacy

Napoleon's hegemony over Europe was brief; in some regions, it lasted only three years. Nevertheless, his reforms exerted a lasting influence on how the states of western Europe were governed henceforth. Although the Congress of Vienna, which reorganized Europe after Napoleon's fall, reordered the borders of states to a considerable degree, Napoleonic administrative institutions and, above all, the Civil Code reemerged sooner, rather than later, as basis for civil government in what had been the inner empire, and would become the historic core of the modern European Union. Later, the centralized, culturally uniform model established under Napoleon became the guiding principle of French overseas imperialism, starting with Algeria in 1829 and spreading across much of Africa and Indochina in the late nineteenth century. The legacy of the Napoleonic Empire in European and imperial history is less in Napoleon's transient military exploits than in the durability of his civil reforms.

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See also Napoleon

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Nationalism—Overview

In its most familiar but basic nineteenth- and twentieth-century form, nationalism is the doctrine that each nation has a right to its own state, and that a state is legitimate only if it represents a nation. Four interrelated features of the modern world were conducive to the emergence of nationalism: politics, economies, dissemination of text-based culture, and racial, religious, and ethnic differences.

Until recently, conventional wisdom held that nationalism arrived on the world stage in western Europe around the end of the eighteenth century. Its birth was sometimes dated more precisely: 20 September 1792, when the French revolutionary troops who turned back the invading Prussian and Austrian coalition forces at Valmy did so with the cry “*Vive la nation!*” Whether or not the victory was the result of nationalist fervor or effective artillery is moot. But there is little doubt that the mass mobilization with which the French Revolution met its enemies, the administrative and cultural centralization begun by the republic and continued under the empire, and the belief in France’s destiny inspired by Napoleon prefigured many of the themes of later nationalism. So too did the response that France’s victories evoked. Resistance to French armies was carried out in the name of the nation, even when—as in the case of the patchwork of states, principalities, and imperial possessions which was to become Germany—no political entity corresponded to that name. Indeed, it was in the German language that the nation received its first explicit philosophical articulation, in the writings of Johann Gottfried von Herder and Johann Gottlieb Fichte. Once it found expression, the rhetoric of nationalism was

taken up with great enthusiasm in the nineteenth and early twentieth centuries. Wars were fought, dynasties overthrown, empires challenged, and borders redrawn in the name of national self-determination.

The conventional wisdom has been subject to criticism on many fronts. Some historians have argued that nationalism had very little presence in the consciousness of ordinary people until well into the nineteenth century and perhaps even later. Eugen Weber (1976) has shown that most French peasants in the late nineteenth century had little sense of being French. John Breuilly (1982) has argued that nationalism was initially a political project designed to further the interests of elites, and only engaged popular sentiment as a result of the administrative and educational policies of the state. If this line of criticism encourages us to think of nationalism as emerging rather later than the end of the eighteenth century, a second line of criticism locates nationalism earlier. Linda Colley’s (1992) account of eighteenth-century Great Britain tracks the development of a sense of British national identity over that period. Colley’s argument is not inconsistent with, and indeed it presupposes the existence of, an English and perhaps even a Scottish sense of national identity before that. Liah Greenfeld (1992) and Anthony W. Marx (2003) trace the emergence of nationalism back to the early sixteenth century, and Adrian Hastings (1997) has presented a strong case for a sense of English nationhood even prior to the Norman Conquest.

It is important to separate different questions here. One concerns the extent to which nationalism was a significant presence in the consciousness of those in whose name nationalist struggles were carried on. Another concerns the use of nationalist rhetoric by



political leaders, intellectuals, and cultural figures. It may be that Breuilly is right about the relatively shallow roots of nationalism, even in the nineteenth century. But it may also be that Greenfeld and Marx are right in that nationalist rhetoric was making its appearance in political and cultural discourse at least four hundred years earlier. In other words, nationalism may have begun its career as an elite phenomenon, and only become a mass possession very much later.

Definitions

In its most familiar nineteenth- and twentieth-century form, nationalism is the doctrine that each nation has a right to its own state, and that a state is legitimate only if it represents a nation. In more recent years, however, some nationalist movements—for example, the Welsh in the United Kingdom, the Kurds in Iraq—have been prepared to settle for something less than full political self-determination. Although these concessions may be born out of necessity, they suggest adopting a more moderate and inclusive conception of nationalism as the claim that a nation has a right to political recognition, perhaps a degree of autonomy within a federal structure, and that a state is legitimate to the extent that it provides that recognition.

But what is the nation? And what is it about the nation that justifies its claim to a privileged political status? There is a limit to the extent that we can provide general answers to these questions. But there are some general characteristics. Nationalism came on the scene with the idea that a group of people is constituted as a political community through a shared cultural identity, and (enough) people believe that this identity should take priority over others. There is an enormous variety in the constituents of this identity, not only between nations but within a nation at different times. Each nation does have its own story to tell, but the plot may change. Every nation does, however, appeal to a common history, a story of triumphs and disasters, of heroism and betrayal, through which the nation has come to be what it is. Every nation thinks of itself as having a homeland, which is described and celebrated in the nation's art, literature, and music,

and which provides the ground in a near literal sense of its national identity. Typically (though not universally), the national culture is based on a common written language, and members of the nation are able to communicate with each other through that language. The culture is also egalitarian: as Benedict Anderson (1991, 20) put it, the nation is “always conceived as a deep, horizontal comradeship.” This is, of course, compatible with considerable inequality of wealth, power, and prestige. The nation is like the God of the great monotheistic religions: all are equal in the eyes of the nation, if in nothing else. However, insofar as the nation is conceived as the basis of legitimate political rule, nationalism is a populist doctrine: sovereignty is located in the people.

The Origins of Nationalism

Nationalism is the doctrine that a community, united by land, history, and language, has a claim to political recognition. The more visible nationalist movements of the nineteenth century—those of Germany, Italy, Greece, Poland, and many others—sought to remake political borders so that they would correspond to the aspirations of the nations they claimed to represent. It is possible, however, to recognize earlier, less strident versions. English borders were, more or less, secure by the sixteenth century; they were extended by the incorporation of Scotland in 1706. (The attempt to include Ireland was much less successful.) A conception of England, involving landscape (“this scepter'd isle”), religion (Protestantism), history, mythology (Edmund Spenser's *The Faerie Queene* was important), a cast of characters (the English yeoman, the squire), a literary tradition, even special modes of warfare (the long bow), had begun to play an important role in public discourse in the sixteenth century. When England and Scotland formed Great Britain it formed an unusual, but not unique, multinational nation (Canada and the old Soviet Union are other examples). While England and Scotland could continue to celebrate their distinct national identities—though a strong case has been made by Hugh Trevor-Roper (in Hobsbawm



Eugène Delacroix, *Liberty Leading the People* (28th July 1830). (1830). Oil on canvas. Allegorical female figures have prominently stood for countries and their causes.

and Ranger 1983), that Scottish national identity was largely formed in the nineteenth century—they did so as parts of a larger nation, Britain. The monarchy, shared political institutions, and a common written language were important unifying factors. So too was Protestantism, and as this became less important in the nineteenth century, it was replaced by a shared imperial mission.

The story so far focuses on England and later Britain. Many scholars (Greenfield 1992, Hastings 1997) have argued that England led the way into nationalism. And even Marx (2003), who places Spain first in the queue, with France and England close competitors, concedes that the nationalist project was more successful in early modern England than elsewhere. However, this leaves open the issue of whether there were even earlier forms of nationalism, perhaps elsewhere than in Europe. Hastings makes the interesting suggestion that Israel as depicted in the Old Testament served as a model for the early nationalist depictions of England. Certainly, the combination of culture, divine election, and political claims made on behalf of the Israelites has much in common with later nationalism. So too do the claims that Thucydides has Pericles make on behalf of Athens in his Funeral Oration after the first year of the Peloponnesian War. So we will

need to look at the possibility of earlier—and perhaps non-European—forms of nationalism shortly.

Why Nationalism?

Whether or not there are premodern examples, there is little doubt that nationalism reached its zenith in the modern world. Why has the modern world been so hospitable to nationalism? There are four interrelated features of the modern world that were conducive to the emergence of nationalism: politics, economics, the dissemination of text-based culture, and religious, racial, and ethnic exclusions.

Politics

Nationalism is, as both Breuilly and Marx emphasize, a political project. This suggests that we need to examine the emergence of nationalism in the context of changes in the nature of state power. The most obvious of these is centralization: the attempts by the early modern state to establish its position as the sole source of power within an increasingly clearly defined territory. Of almost equal importance was the expansion of the role of the state in social life. It acquired a range of administrative, juridical,

*A national debt, if not excessive, will be to us a national blessing . . .
It will be a powerful cement to our union.* • **Alexander Hamilton (1755–1804)**

policing, infrastructural, and increasingly educational responsibilities. If state coercive power was centralized, its administrative power began to make itself felt in almost all aspects of social life.

Economies

The most important economic change was the spread of capitalist market relations. Ultimately this was to lead to industrialization, but that came much too late (in Britain, in the late eighteenth century; in Europe, North America, Japan in the eighteenth, and in other places even later) to explain the emergence of nationalism (as against Gellner 1983). As market relations spread, previously self-sufficient rural communities found themselves dependent on a wider network of production and distribution. The emergence of a labor market encouraged population movement. Transport, both of goods and of people, improved. If the market was always global in its reach, the most intensive development took place within the borders of well-established states, such as England and France. If the market was not a sufficient explanation of nationalism (as some Marxists may have believed), it defined the social space on which national identities were constructed.

Dissemination of Text-Based Culture

Perhaps the single most important development was what Anderson (1991, 37–46) called “print capitalism”—the explosion in the production and dissemination of texts, increasingly in vernacular languages. If religious texts (especially the Bible) were initially most important, other text-based cultural forms (political tracts, scandal sheets, magazines, plays, eventually novels) developed to take advantage of the new opportunities for influence and markets. The spread of literacy made these products available to a large audience. If market relations were eroding the diversity of cultural forms characteristic of peasant life, the development of print-based culture made more encompassing and richer forms of identity available.

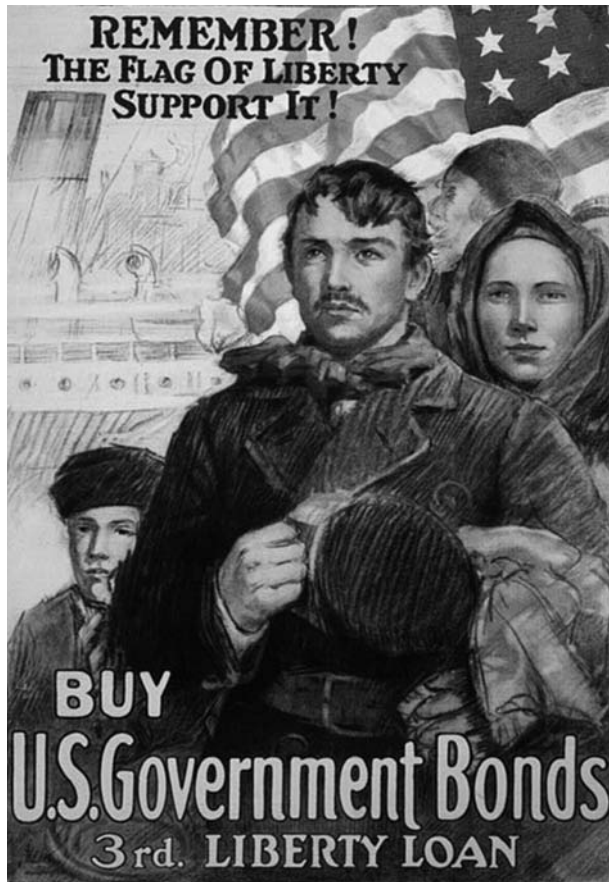
Religious, Racial, and Ethnic Exclusions

Many historians of nationalism (e.g., Colley 1992, Marx 2003) emphasize the role of real or imaginary differences in the construction of nationhood. For Colley, the opposition to Catholic and absolutist France was crucial to the construction of British national identity in the eighteenth century. Marx makes a stronger case: for him, an essential component in the formation of national identities was the repudiation of some identifiable other. Early-sixteenth-century Spain selected the Jews, and most nations followed suit. For England, the exclusion of Catholics helped unify the otherwise heterogeneous Protestants. No doubt internal factors, such as those listed above, also played a role. It is plausible, however, to suggest that a contrast with what is “other” is necessary for a unified identity. All too often, the other is conceived of as a threat that must be repudiated. Religious, racial, and ethnic exclusions lurk uncomfortably close to the surface of the most civilized national cultures.

These four features do not provide a full explanation of the rise of nationalism. History is too full of contingencies for this to be possible. But they provided the environment within which the nationalist project became possible and, for many, inevitable.

Premodern Nationalisms?

Once we have a reasonably clear understanding of nationalism it becomes a broadly empirical question whether there were premodern nationalisms. There are, however, reasons to be skeptical. For much of world history, it would not have seemed plausible to accept the idea that the culture political elites shared with those over whom they ruled was the justification for their political rule. This does not mean that there were not latent cultural similarities between ruling elites and their subjects. Both John A. Armstrong (1982) and Anthony D. Smith (1986) have argued that the early nationalisms of western Europe were able to draw on the cultural resources these provided. (Both Armstrong and Smith conceive these similarities on ethnic lines. This is misleading. Religion and other



This U.S. World War I poster advertising government bonds was aimed at citizens and immigrants.
Library of Congress.

cultural features were more important than descent.) But these cultural ties seem to have played relatively little political role and it would be a mistake to think of them as constituting nations in the modern sense. Perhaps something more akin to the nation came into existence when these communities were faced with a common enemy. It may be, for example, that a sense of French national identity emerged during the One Hundred Years War, and—even earlier—that Vietnamese, Burmese, and Korean national identities came into play as a response to the ongoing struggles with China. A different candidate for premodern nationhood were those small communities, such as ancient Israel and the Greek city-states (excluding the slaves), where there was not a large gap between rulers and citizens, and social life involved a number of common activities and rituals (military service, religion). In these cases, shared experience would have forged a common cultural identity. But this is a long way from the vast nation-states of the modern world.

The Spread of Nationalism

Whether or not there were premodern nationalisms, it was at best an intermittent occurrence. In the modern world, it has seemed inescapable. And it is easy to see why. Once the link between culture and state power had been established, political rule acquired a cultural dimension. This was recognized after the Revolutionary and Napoleonic Wars, and the nineteenth century was the period of “official nationalism” (the term is taken from Seton-Watson 1997). States strove to legitimize themselves in cultural terms. Public displays, rituals, and ceremonials were deployed, and even invented, as part of this nation-building exercise. By contrast, old polyglot empires on the Austro-Hungarian or Ottoman models faced increasing difficulties as their states responded to the challenge of the modern world. The relative success of the United Kingdom in forging an overarching national identity shows that these difficulties were not insuperable. As states expanded their territory and increased their presence in everyday life, minority cultures were faced with a choice, either to accommodate to the dominant culture or to resist. The former choice meant assimilation or marginalization; the latter was the path of national resistance, as the minority culture sought a political embodiment. It may be, as Breuilly argued (1982), that nationalism provided the rhetoric in which intellectuals and political leaders voiced their opposition to metropolitan centers of power well before it became a presence in the consciousness of the people in whose name nationalist struggles were fought. But the rhetoric was—and remains—an effective one.

The sources of nationalism are to be found in the enormous structural changes that were taking place in western Europe in the sixteenth to eighteenth centuries. But it was quickly appropriated in the non-Western world. This does not mean that European models were simply translated, though African and Asian leaders and intellectuals were undoubtedly influenced by what they learned from Europe. Perhaps most important was the experience of European imperialism. Borders were drawn according to the exigencies of colonial rule, and resistance to that

rule itself formed the national identities in whose name resistance was carried out. While postcolonial nations were able to draw on local traditions and history, national identities often faced difficulties when the unity gained through struggle was overtaken by other competing loyalties.

Does Nationalism Have a Future?

For the past two or three hundred years, the nation-state has provided the organizing principle within which much economic, political, and cultural activity has taken place. There is some reason to suppose that this is no longer the case. Production, and not merely exchange, increasingly takes place on an international scale. Improvements in transport and, massively, in communication, have placed even ordinary people in contact with people across state borders. The imperative of economic growth has led most states to subordinate some of their power to supranational agencies and global market forces. National cultures have fragmented along lines that bear little relation to political boundaries. As Hobsbawm (1993, 163) remarked, nationalism “is no longer a major vector of historical development.” But we should be very wary of predicting the demise of nationalism. The explanatory story sketched in above leaves a good deal of room for historical contingency. Whatever its origins, nationalism has become a historical force in its own right, not merely as a medium for other projects. Nations have been able to appropriate and create impressive cultural resources. States retain a good deal of residual power and are well aware of the potency of nationalism to support it. Whether or not globalization will eventually deliver prosperity and security, the contemporary reality for many is poverty and uncertainty. In these circumstances, it is not surprising that nationalism continues to attract the allegiance of states, oppositional groups, and—not least—ordinary people.

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See also Nationalism, Ethnic; Nation-State

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Nationalism, Ethnic

If nationalism is defined as an ideology that claims statehood and territorial sovereignty in the name of popular identity, ethnic nationalism is the subset thereof that defines popular identity through a myth of common ancestry. Whether this myth has a basis in fact is largely immaterial, as long as a sense of kinship among the population is manifested and maintained through common culture and tradition.

Ethnic nationalism depends on the sense of kinship or shared ancestry among a population. A shared, distinctive language is the most common marker of ethno-nationalist identity, but other cultural attributes such as religion can serve equally well, as illustrated by the rival ethnic nationalisms of Eastern Orthodox Serbs, Bosnian Muslims, and Catholic Croats (all of whom speak what was once known as Serbo-Croatian) and by the division between Unionist Protestants and Irish Nationalist Catholics (who all speak an Irish-inflected English) in Northern Ireland.

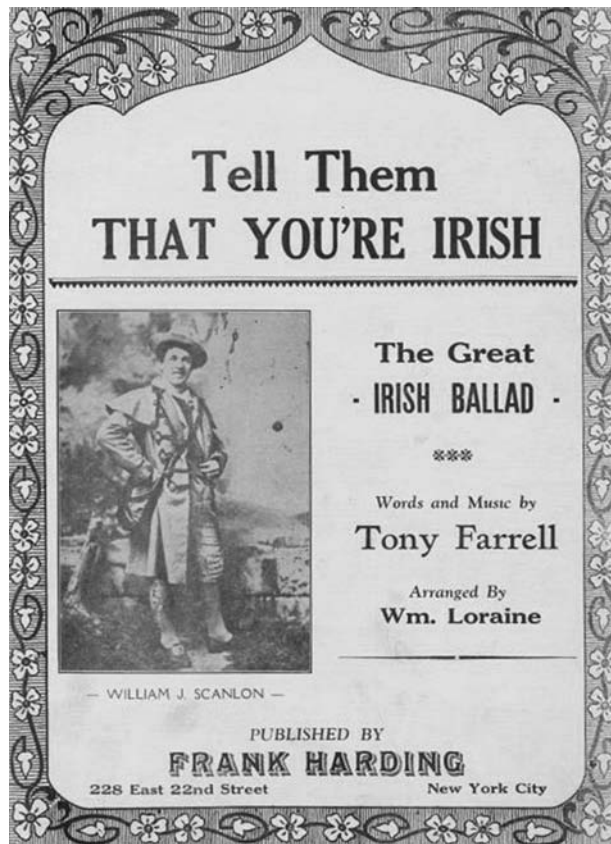
Some of the deep sociobiological antecedents of ethnic nationalism can be recognized in the kinship-based cooperation patterns that humans have in common with a variety of other vertebrates. A shared commitment to guarding a particular territory (as a food source, breeding site, and/or shelter from predators) is one of the characteristic manifestations of such group solidarity. Among all known human societies, analogous behavior patterns have been refined, reinforced, and expanded by the deployment of a vast array of symbolic markers and cultural expressions of group identity. Among even the smallest hunter-gatherer communities, shared rituals, customs, and modes of communication have been used both to

reinforce the social significance of kinship ties and to extend feelings of kinship beyond the relatively narrow group of people who unquestionably share a common ancestral lineage. These cultural mechanisms provide for the adoption of outsiders into the sacred circle of kinship and the casting out of those seen as violating social norms.

Ancient Origins

Starting some ten thousand years ago, as the agricultural revolution transformed societies in the Middle East and elsewhere, the size and number of organized communities began to grow exponentially, as did the importance of maintaining long-term control over bounded territories. The difficulty of maintaining social cohesion increased commensurately, for it was in the course of this socioeconomic, demographic, and cultural transformation that the phenomenon Benedict Anderson has described as “imagined communities” (1991) first emerged. That is to say, communities grew beyond the critical threshold of roughly 150 individuals—the maximum size of a social group all of whose members are likely to develop mutual personal bonds of affection and solidarity. Communal identity now had to be cultivated and maintained by means other than face-to-face contact. Moreover, it had to be kept alive in the face of ever-widening socioeconomic inequalities.

The linked institutions of religion and law, reinforced by a generous measure of brutality, were central to the establishment of social and political authority over imagined communities. To the extent that it was divine sanction of political authority that emerged as the dominant legitimizing framework for



Sheet music cover for “Tell Them that You’re Irish,” a ballad by Tony Farrell. The title/refrain was followed by the words “and never mind their frown.”

ancient states, rulers might not have been overly pre-occupied with the ethnic identity of their subjects. But contact and conflict between states and societies brought ethnic commonalities and differences to the forefront of people’s consciousness. Close encounters on caravan routes and battlefields made members of different communities much more conscious of the cultural characteristics that set them apart from one another. By the same token, the conquest and consolidation of territorially and demographically extensive empires forced regimes to confront the significance of sociocultural solidarity and conflict among their subjects for the cohesion of their polities.

In large states like Egypt and the successive Mesopotamian empires, political authority, social hierarchy, and collective solidarity were maintained by religious and legal systems that enshrined the monarch as either a god or a descendant of the gods. The philosophically more subtle Confucian tradition in China extolled the virtuous monarch as enjoying the “mandate of heaven.” Yet while these

theological frameworks of legitimization were suggestive of claims to universal dominion, the ethno-cultural particularisms in which they were rooted became crucial to the political elites in these states the moment their rule was challenged by alien others. The conquest of Egypt by the Semitic Hyksos invaders and the establishment of their rule there as the fifteenth and sixteenth dynasties (1674–1552 BCE) would seem to belie the significance of ethnicity to political legitimacy in that society. Yet their overthrow by their Egyptian vassals in the sixteenth century BCE was portrayed by rebel leaders as a victory for indigenous Egyptians over ethnically alien, and hence illegitimate, overlords. Similar themes were associated millennia later with the overthrow of the Mongols’ Yuan dynasty (1279–1368 CE) by the founders of the native Ming dynasty (1368–1644 CE) in China.

Conversely, the Neo-Assyrian and Neo-Babylonian empires’ conquests of the bulk of the Fertile Crescent over the course of the ninth to sixth centuries BCE forced them to wrestle with the challenge of consolidating and maintaining their political authority over a diverse array of ethnic groups. One of their standard responses to rebellion by vassal states was the wholesale deportation of tens of thousands of indigenous inhabitants to the far corners of the empire, and the repopulation of the vacated lands by ethnically alien settlers. Such aggressive ethno-demographic engineering reflected the imperial regimes’ acute awareness of the potent interconnection among ethnic solidarity, territorial attachment, and aspirations to political independence.

The most well-known objects of ancient ethnic cleansing are the Jews, and it is among the Jews that one of the most clear-cut cases of ethnic nationalism in the ancient world emerged. It may have been during the Babylonian exile (sixth century BCE) that the distinctive Jewish ethno-theological synthesis crystallized, with its concept of a chosen people bound by a covenant with God to observe his commandments and accept the rule of his law in exchange for living as free people within a clearly bounded territory (“from Dan to Beersheba”). This conception of nationhood,

There is a road to freedom. Its milestones are Obedience, Endeavor, Honesty, Order, Cleanliness, Sobriety, Truthfulness, Sacrifice, and love of the Fatherland. • **Adolf Hitler (1889–1945)**

which blended the idea of kinship with the notion of covenant (a synthesis of ethnic and civic elements, as it were), motivated the reestablishment of a self-governing Jewish community in the ancestral homeland and the eventual reemergence of a short-lived autonomous kingdom of Judah in the second and first centuries BCE. As conveyed through the Hebrew Bible, the ancient Jewish paradigm was to play a major role in the shaping of modern European—and hence global—nationalism.

Modern Ethnic Nationalism

The ancient world presents us with a variety of scenarios, ranging from societies in which ethnic self-awareness was weakly developed and played little active political role to those in which it was central to the legitimization of political authority and territorial sovereignty. Wherever economic decline and geopolitical instability undermined the very possibility of creating or maintaining centralized state power (e.g., early medieval Europe), ethnic nationalism could by definition have little or no occasion to manifest itself. Conversely, the rise of the highly centralized modern state, the growth of geographically integrated economies, and the literary standardization of vernacular languages all begged the following questions. What is the basis of legitimate political power? How should the state define itself in relation to the ethnic and cultural identity of the masses? These issues took center stage in parts of Europe and then spread elsewhere in the context of Western imperial expansion. The steady push toward political democratization in the eighteenth, nineteenth, and twentieth centuries reinforced the growing belief that the collective identity of the populace was critical to legitimizing the very existence and authority of the state as well as the delineation of its boundaries.

In countries where strong preexisting states allowed for the further consolidation of centralized political authority, national identity tended to assume a civic form—that is, it was defined largely in terms of a common set of political values and loyalties, alongside shared territorial attachments and historical

memories. Britain and France are the classic models of this variant of nationalism. But even in these cases, national consciousness was closely associated with particular forms of ethno-cultural and linguistic identity that were actively promoted by state authorities in a concerted attempt to assimilate, suppress, or marginalize lingering regionalist traditions (e.g., Scottish highlander society and Irish Gaelic speakers in the United Kingdom, Breton identity and the langue d'oc tradition in France) that were seen as potential obstacles to the unity of the nation-state. In territorially contiguous, multiethnic empires that were late to centralize their administrations (e.g., the Ottoman Empire and the Habsburg monarchy), efforts to strengthen state authority in the eighteenth through twentieth centuries only served to provoke strong autonomist or secessionist backlashes from alienated ethnic groups (e.g., Armenians in the Ottoman Empire, Czechs and Hungarians in the Habsburg lands). In the course of the nineteenth century, Central and Eastern Europe emerged as the locus classicus (to paraphrase Rogers Brubaker) of modern ethnic nationalism.

If imperial regimes served as the incubators of modern ethnic nationalism, it was the sudden collapse of these empires that led to the growing twentieth-century dominance of the ethnic nation-state as a globally standard framework for the exercise of political authority. The end of World War I was the most violent and dramatic of these watersheds, with the Habsburg, Romanov, and Ottoman empires all falling victim to internal disintegration and/or foreign conquest. National self-determination, championed rhetorically by Woodrow Wilson and Vladimir Lenin alike, became the watchword of the new international order. Even British and French overseas imperial expansion now had to be cloaked in the rhetoric of self-determination doctrine, as in the League of Nations mandates that awarded control over much of the formerly Ottoman Middle East to those two powers on the premise that they would be responsible for leading the colonized peoples of these regions toward eventual independence. In the newly sovereign or newly expanded and reconfigured



Theater placard for *Mirele Efros* (The Jewish Queen Lear), perhaps the most widely performed play in the Yiddish canon. Set in early-twentieth-century Grodno, Poland, the play was a catalyst in the formation of ethnic nationalism for Polish émigrés. New York Public Library.

states of Central and Eastern Europe, policies and institutions were shaped by the struggle to fit divergent forms and conceptions of ethnic identity into uni-dimensional packages called nation-states. Processes that had taken centuries to unfold in the paradigmatic cases of Britain and France were expected to take place virtually overnight in countries like Poland, the Baltic states, Czechoslovakia, and Romania, as they would be later in the post-colonial polities of Africa and Asia. In many cases, the large and diverse ethnic minorities that dwelled within the borders of the new states were pressured to assimilate, leave, or quietly accept second-class status on the margins of the new, ethno-national political orders. The turmoil and repression that

ensued came at a heavy price to democratic institutions and political stability.

In the aftermath of the Cold War, the Eastern European nation-states that emerged from post-1945 Soviet domination owed their capacity for democratization and political stability not only to freedom from Communism but also to the brutal legacy of coercive border changes, ethnic cleansing, and genocide—policies (whether internally initiated or externally imposed by German or Soviet occupiers) that had radically diminished the scale of ethno-cultural diversity in many of these countries. Tellingly, it was precisely the most ethnically diverse Eastern European state—Yugoslavia—that failed to manage the transition from Communism to democracy in a peaceful fashion. In the Union of Soviet Socialist Republics, the façade of ethno-federalism had served the Leninist regime as a propagandist tool employed in the maintenance of centralized, one-party rule. The demise of Communism led to the victory by default of ethnic nationalism as the operative legitimizing ideology in the newly independent republics. Ethnic warfare duly broke out between or within former Soviet republics such as Armenia and Azerbaijan, Moldova, and Georgia.

At the beginning of the twenty-first century, ethnic nationalism remains a powerful and often destructive force not only along the borderlands of the former Soviet Union, but throughout much of the world. In some of the Asian and African states whose post-1945 independence was claimed in the name of nationalism (e.g., Sri Lanka, Rwanda), the unifying emotions of the anticolonial struggle and its memory are proving an inadequate foundation for the construction of cohesive national identities capable of transcending deep internal ethno-cultural divisions. It has been observed that the greater the pressure toward global economic and cultural homogenization, the stronger the backlash from groups seeking political sovereignty as a bulwark for the protection of their ethno-cultural heritage or as protection against the repressive policies of dominant ethnicities. While some manifestations of

this tendency can be dismissed as “the narcissism of minor difference” (Ignatieff 1993, 21–22), no society basing its political institutions on the principle of popular sovereignty can ignore the fundamental dilemma of how to define and lend cohesive form to its citizenry’s identity without sowing discord among the ethno-cultural groups constituting its population.

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See also Ethnicity; Ethnocentrism; Nationalism; Nation-State

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Nation-State

A nation-state is the singular authority that represents the sovereignty of the people of a nation—that is, a group of people with common bonds of culture, history, and language—within clearly demarcated territorial boundaries. The emerging system of nation-states in Europe during the eighteenth and nineteenth centuries was closely associated with imperialism abroad.

The term *nation-state* ought to be distinguished from two closely related terms, *nationalism* and *nation*. The nation can be thought of as a group of people who are said to have collective bonds—produced by one or more cultural phenomena such as race, language, religion, culture, or history—and affiliation with a common territory. Nationalism is the valuation of the national bond over all other ties and is expressed as the identification of the national collective with a present or anticipated nation-state. The nation-state is the singular authority that represents the sovereignty of the people of the nation within clearly demarcated territorial boundaries.

A “primordialist” view of the relationship between these terms posits that the nation, if not nationalism, precedes the nation-state. In this view, the nation-state represents the primordial nation’s ultimate awakening or coming to awareness of its racial or deep cultural bonds in order to fulfill its destiny in a modern future. Nationalists describe the history of the region as an evolution or awakening toward modern national consciousness. Contemporary scholars of nationalism, most of who can be dubbed “constructivists,” do not subscribe to this view, although the extent and understanding of their constructivism varies.

Constructivists argue that the nation is in many ways the product of relatively recent state formation that sought to integrate different groups into a political body (which comes to be called the nation). The constructivists argue that by interpreting the diverse history and loyalties of the region as the evolution of the nation, nationalists seek to legitimate the present nation-state.

To be sure, some societies, such as China or England, have had long processes of state formation that did produce enduring ties and even an awareness of Chineseness or Englishness, but in the absence of modern technologies or need for strong identity creation, such awareness was often temporary, limited to few groups, and rarely overrode other local or religious bonds. Nonetheless, some historians argue that historical conditions are an important factor and no social formation can be arbitrarily constructed into a successful nation.

The Nation-State System

The nation-state is believed to have evolved from the system of states in Europe traceable to the Treaty of Westphalia (1648), which ended the Thirty Years’ War. The treaty came to inaugurate a system in which, by the nineteenth century, each state was defined by territorial boundaries and ruled by one sovereign. But the system of nation-states is more appropriately dated to its explicit articulation by the philosopher Emmerich de Vattel (1714–1767) in the late eighteenth century, which assumed that states respected the territorial integrity of other similarly constituted states. The Westphalian-Vattelian nation-state was distinguishable from other polities (such



A key element of state building is an effective system of communication and transportation. This photo from south central Namibia shows men working on the Aus-to-Luderitz railway line.

as empires or kingdoms), which had several, often competing, sources and levels of authority (such as the church, tribes, or feudal lords) and in which authority extended over people but not necessarily over territory.

Although in theory a nation-state acknowledged the sovereignty and autonomy of other nation-states, the states were engaged in a competition for resources that entailed not only military conquest and colonization, but also annexation or domination of one another's territories. During the eighteenth and nineteenth centuries these states became increasingly involved in creating the conditions for capitalist competition and wealth accumulation within Europe as well as overseas. Through the nineteenth century, they standardized and regulated their economic, judicial, and political systems while competing for colonies in Asia, Africa, the Americas, and the Pacific. Colonization or semicolonization (such as informal domination through the imposition of unequal treaties in East Asia) was frequently justified by the allegation that colonized societies did not possess the laws and institutions of "civilized nation-states" and were thus not qualified to

participate in the system. Their resources and labor were fair game for colonization and were mobilized for capitalist competition. Thus the emerging system of nation-states was closely associated with imperialism abroad.

Within the boundaries of the nation-state in western Europe and North America, the nation became associated with the doctrine of rights for its citizens. The French Revolution of 1789 protected and enforced human and individual rights as national rights. Article III of the Declaration of the Rights of Man states, "The principle of all sovereignty resides essentially in the nation. No body nor individual may exercise any authority which does not proceed directly from the nation (or the laws of that nation)." In the early stages, the majority of the population, including women, minorities, and slaves within the nation, were not granted rights; their rights were won in the nineteenth and twentieth centuries through political and military struggles. But the fact that such struggle for rights became possible at all was due in large part to the changed foundations of the sovereignty of the state. The state no longer derived its

Before I built a wall I'd ask to know / What I was walling in or walling out.

• **Robert Frost (1874–1963)**

sovereignty, particularly after the antimonarchical American and French Revolutions, from religious or dynastic claims, but increasingly from the idea of the “people” of the nation. The notion of the “nation-people” as the bearers of rights served as a spur for self-determination and fueled the spread of national movements in the territories of the Napoleonic, Spanish, Habsburg, Ottoman, and Czarist empires in the nineteenth century.

Even so, most of these movements were relatively elitist affairs, and nationalism as such did not appear until toward the end of the nineteenth century. According to the historian Eric Hobsbawm, nationality was not viewed as a birthright or an ascriptive status during much of the nineteenth century. Patriotism in the eighteenth-century revolutions in America and France was regarded as a largely voluntary affair. To be sure, the territorial nation-state did produce the cultural homogenization that was a condition for nationalism. But ethnicity, language, and other markers of collectivity were not to become the natural basis of claims to sovereignty until the last decades of the century. There may have been earlier, individual cases of ethnicity or other collective markers being used as rallying points to mobilize the people, but they were isolated and usually elitist; nationalism as a near-universal phenomenon emerged only in the later period and became rapidly realized in the aftermath of World War I.

The Nation-State and Nationalism

Several circumstances led to the emergence of mass nationalism in the late nineteenth and early twentieth centuries. Industrialization necessitated mass literacy and interchangeable skills, which the philosopher Ernest Gellner (1925–1995) argued required the state to produce a culturally homogenous population congruent with state boundaries. The political scientist Karl Deutsch (1912–1992) noted the importance of modern mass media for nation-building projects, and the political scientist Benedict Anderson has emphasized the mass marketing of print media in what he calls print capitalism, which

described the imagined community of the nation to the reading public. Nationalism was also linked to the politics of mass mobilization that emerged with the increasing democratization of European politics after 1880. Some of these conditions—such as the mobilization of certain identities or a form of print capitalism—could be found earlier in imperial China and elsewhere. Nonetheless, it was the simultaneous development of all or most of these conditions within an evolving system of competition between states that shaped nationalism at the end of the nineteenth century as the ideology of the nation-state.

The relationship between nationalism and competition between states was catalyzed by the challenge to British global supremacy in the latter part of the nineteenth century. Nationalism became the ideological means among rising competitor states, such as Germany, Japan, the United States, Russia, and Italy, to mobilize the population and resources within the state's territory in order to gain competitive advantage globally. Political and capitalist elites in these newly industrialized societies gradually undermined the classical liberal principles of free trade—enabling and enabled by British hegemony—by adopting policies to secure a state-protected national economy. The two world wars of the twentieth century were significantly driven by emergent nation-states in the competition for global resources.

Equally important was the mobilization of human resources by the nation-state in the name of the nation. Nationalism was deployed to rally the population and resources for imperialist expansion and war. Mass organizations created by the nation-state to mobilize civilian support for war were first developed by Japan, the Soviet Union, and Italy, nations that were not principals in World War I but that observed the insufficiency of civilian support during the war. These government-sponsored mass organizations, such as the Military Reservists Association formed in Japan in 1910, were developed along the model of a conscript army, imbued with nationalism, and were elevated rhetorically to represent the



will of the people. In this way the government would call on the people to transcend immediate and particular interests; it might, for example, ask people to forego personal consumption or it might call into question the legitimacy of striking workers within the nation. Empire became the reward and glory of mass nationalism.

The events that concluded World War I established the normative principle that the world should be divided into nation-states and dealt an important though by no means conclusive blow to imperialism. The Paris Peace Conference of 1919, the Soviet Revolution, the break-up of the Ottoman and Habsburg empires into nation-states, and the establishment of the League of Nations in 1920 reflected a vision of the world in which the boundaries of the state coincided with that of language and nationality. The creators of the league imagined it as a forum for internationalism based upon cooperation among nations—the individual families of mankind. Two other factors following the war have to be noted: the changed balance of power in the world and the advent of a new discourse of anti-imperialism.

The Soviet Union and the United States of America emerged as new powers with little stake in the old international order based upon the European balance of power; indeed, they were opposed to formal imperialism. Both Lenin and Woodrow Wilson were committed to national self-determination; when the Czarist Empire was reconstituted as the Union of the Soviet Socialist Republics, the constituent parts were theoretically autonomous socialist *nationalities*. The anti-imperialist outlook was undergirded ideologically by the discrediting of the “civilizing mission” of the imperialist powers. Horrified by the scale of devastation of World War I, intellectuals both in the West and in the colonial world launched a critique of the Western ideal of civilization, which in the light of the war they felt had forfeited the right to represent the highest goals or ultimate values of humanity. Colonial intellectuals and leaders in places such as China, India, and the Islamic world began to look to their own civilizations’ traditions to sanction their emergent national movements.

The period after World War I witnessed both the expansion of the nation-state system and the growth of nationalism. While it was hoped that bringing more states under the regulatory mechanisms of the system, such as the League of Nations, would solve the problem of wars among nations, the inherent contradictions in the system actually appeared to intensify. On the one hand, more nation-states and even colonies such as India and mandated territories in the Middle East were part of the League of Nations; on the other hand, burgeoning nationalism justified aggression and domination. Older imperialist nations, faced with the growing phenomenon of nationalism, had to find alternatives to formal colonialism in order to control resources and remain globally competitive. Sometimes this meant developing client states and other subordinate political forms instead of colonies. Rising nation-states such as Germany, Italy, and Japan intensified their pursuit of economic and political supremacy, particularly during the Great Depression. The League of Nations turned out to have no teeth and could not enforce compliance upon those who brazenly violated its covenant, such as Italy and Japan. In part, this was because it was dominated by imperialist nation-states who themselves continued to possess colonies and special privileges. The League ultimately failed in its effort to reconcile the reality of imperialism with the idea of national self-determination.

Decolonization and Globalization

World War II brought about the beginning of the end of colonial empires. It also brought about the triumph of the nation-state as the successor state throughout the colonized world. This was not inevitable, because in several colonial empires, such as the French and the Japanese, there had been considerable experimentation with more-equal affiliations between colonies and the imperial metropole country through ideas of imperial citizenship. One of the most important factors ensuring that decolonization

would yield nation-states was the growing role of the United Nations and international organizations, such as the World Bank, the International Monetary Fund, the Global Agreements on Tariffs and Trade, and the International Trade Organization (later World Trade Organization), and World Health Organization, which tended to recognize only nation-states. The enhanced resources, power, and prestige of the new nation-state system ensured that the only legitimate and viable polities in the world would be nation-states, recognized as such by the system. For example, during the 2003 SARS crisis, the state in Taiwan, which has all the prerequisites for being a nation-state except recognition, had considerable problems gaining access to the services of international organizations—precisely because it lacked nation-state status.

Since decolonization, some have argued that the nation-state form has not provided effective protection against domination by superior powers, which are able to use their continued military and financial might and their influence in international organizations to dominate weaker nation-states. The United States and West European powers have been able to limit the capacity of the new, often institutionally fragile nation-states for self-determination. Similarly, the Soviet Union sought to limit the independence of socialist republics in Eastern Europe and of new nation-states dependent upon its military and financial aid. The effort to create a nonaligned movement during the Cold War, which gained momentum during the Bandung conference in Indonesia (1955), was not very successful, although some states were able to play off superpower rivalries to gain some competitive advantages.

Even though the threat of war between the superpowers was ever present during the Cold War, the existence of the socialist bloc and ideology nonetheless reduced the competitive pressures which had driven nations-states to war during the first half of the century. For better or for worse, the new socialist nation-states restricted the role of multinational

companies and full-fledged capitalism within their borders, and their nation-building projects tended to look inwards. With the fall of the Soviet Union in 1991 and the transformation of China into a capitalist society, nation-states have been turning away from the model of protected development and toward competitive capitalism, now called globalization. In the process, nation-states' relative autonomy from international capitalism and ability to exercise control over their boundaries and identity are once again being affected. Whether or not the new order of international institutions will be able to contain the effects of extreme competition and challenges from the interstices of the system remains to be seen.

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See also Nationalism, Ethnic; Nationalism

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Native American Religions

The term *religion* suggests that the sacred can be separated from ordinary life. Among Native American peoples the sacred, the appearance of the extraordinary, and the most meaningful values are intertwined with daily concerns. Thus the pursuit of sustenance, and the making of useful objects or political decisions, may be charged with the presence and power of that which moves the cosmos. The term *lifeway* indicates this close connection.

Such a complex topic as understanding historical consciousness in Native American religions begins with two major insights. First, the religions of the over one thousand indigenous societies of the American hemisphere involve concepts and practices that cannot be separated from the spheres of life in those societies termed economic, political, cosmological, and artistic. *Lifeway* is used here to indicate this seamless interweaving of the spiritual and the historical. Second, history can be recorded and transmitted in forms other than writing. There are, for example, the winter counts on bison hides among the North American Plains peoples, *quipu* or knot-tying of narratives among Andean peoples, and the accordion-style screen-fold picture books of pre-conquest Mexico. All of these historical expressions have oral myth-telling at their core.

Diversity of Native American Religions

The term “Native American” suggests homogeneous societies, but the native communities of North, Central, and South America are extremely diverse in

their lifeways. For example, the archaeological record gives evidence of major cultural and civilizational developments in central Mexico associated with the pyramids at Teotihuacán (200–900 CE), Toltec sites (900–1000 CE), and the massive pyramidal structures built by Mayan peoples in Yucatan, Guatemala, and Belize (300–900 CE). Archaeological evidence in South America suggests that interactions of Amazonian cultures are as complex and old as those in the Andean highlands that led to the late Incan Empire. Moreover, while North and Central America were home to over five hundred native languages, South America has over eight hundred indigenous languages.

In the region of the current United States alone, the diversity of cultural-historical developments is ancient and impressive. An indigenous culture named Hopewell (200 BCE–400 CE), based on corn agriculture, piled soil to create burial and effigy mounds in the central Ohio River watershed. A cultural florescence called Mississippian (600–1400 CE) left temple mounds from the Gulf of Mexico up the Mississippi River to the current state of Wisconsin. Similarly, in the Southwest cultures now called Anasazi and Kayenta (400–1300 CE) built remarkable cliff and pueblo dwellings at many sites including Mesa Verde in Colorado, Chaco Canyon and Montezuma in New Mexico, and Keet Seel and Betatikin at the Navajo National Monument in Arizona. Finally, the pottery skills and irrigation canals for agriculture of the T’ohono ancestors sometimes named Mogollon and Hohokam (100–900 CE) are still used. The progeny of these ancestral archaeological cultures migrated into diverse settings, continued ancient visions, and developed distinct religious concerns.



An Iroquois pictograph from the nineteenth century describes a ceremony in which the Iroquois give thanks to the Great Spirit. Beliefs and practices of native lifeways vary in North, Central, and South America.

Religious Differences Among Native Americans

The North American Plains native peoples place a greater emphasis on individual visions and their relationships, in the symbolism of the circle, with the well-being of the community of life. The Northwest coast peoples celebrate a human community's privileges and obligations in a universe of giving subtly imaged as worlds within worlds symbolically imaged as boxes within boxes.

Southwest Puebloan peoples stress processes of nurturing rain and corn-growth in communitarian ethics and ritual cycles that connect with ancestral histories. Southeastern native peoples continue ancient ceremonies of the first corn of the season, the Green Corn, at which they light the new fire of the community as a cosmological act revivifying creation.

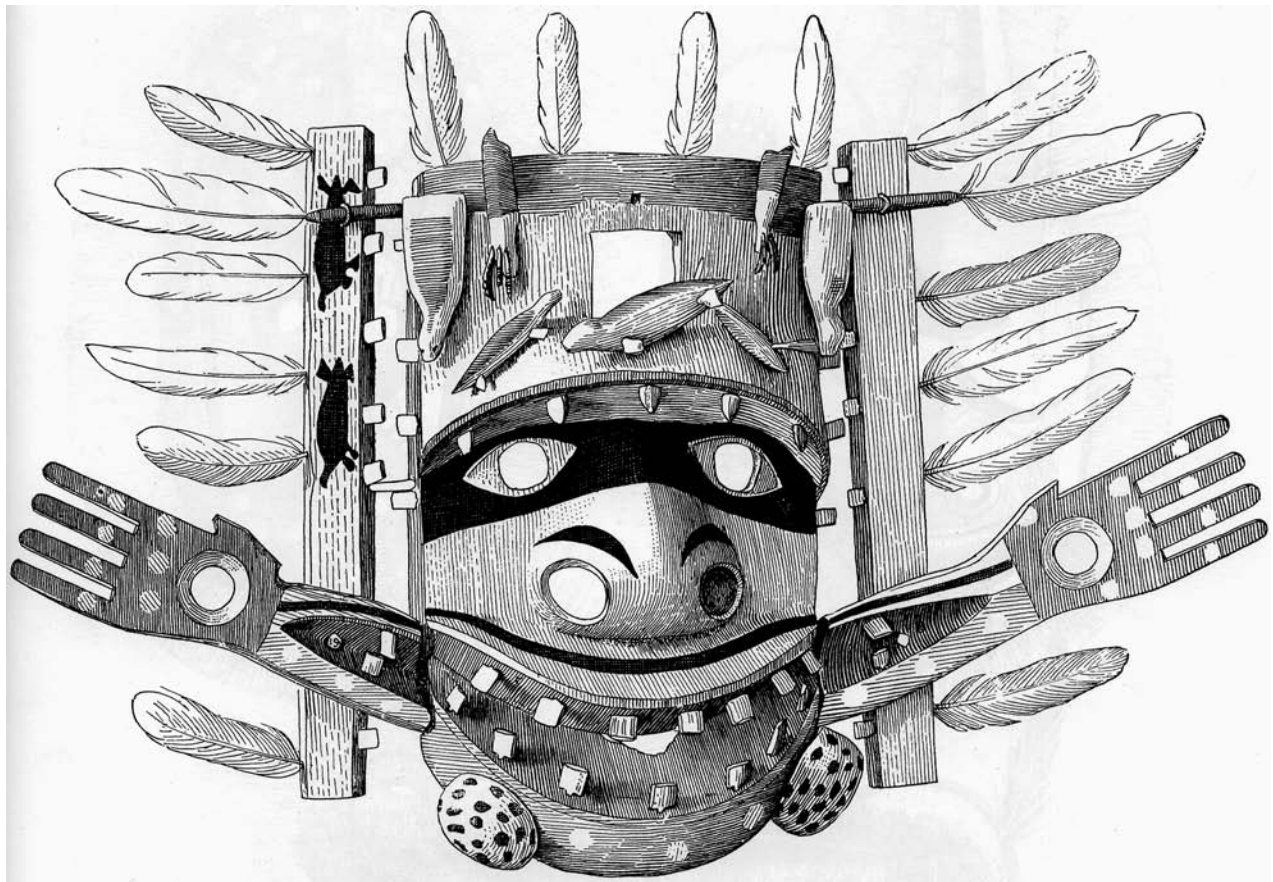
Northern sub-Artic and Artic peoples produced elaborate technologies (e.g., seal hunting, snowshoes, toboggan, igloo) developed for survival in that harsh cold climate as well as intense shamanistic healing practices. A variety of terms are used to refer to all of these peoples in an effort to suggest shared

similarities, such as American Indian, First Peoples, and First Nations. The most appropriate terms that honor their differences are those used by the peoples themselves, for example, Anishinabe (Ojibway), Lakota (Sioux), Yup'ik (Eskimo), Muskogee (Creek), and Haudenosaunee (Iroquois).

Lifeway as the Context of Native American History

The term "religion" suggests that the sacred can be separated from ordinary or profane life. But among Native American peoples the sacred, the appearance of the extraordinary, and the most meaningful values of life are inextricably intertwined with the pragmatic concerns of daily existence.

Thus, the ordinary pursuit of sustenance, the making of useful objects, as well as political decision-making may be charged with the presence and power of that which moves the cosmos. The term "lifeway" indicates this close connection of the spiritual awareness of cosmological forces as the key to understanding the meaning of both individual lives and larger societies.



This drawing of an Inuit mask from Alaska depicts a supernatural being said to control the supply of game. The carved seals attached to the mask suggest that the wearer sought to obtain help for a good seal hunt.

From Denial to Ethnography

Early European studies of Native American societies from the late-fifteenth-century encounter period often reported that historical consciousness and religion did not exist among these peoples. This rejection of religion and systematic remembrance of the past among Native American peoples largely derived from the dominance of the Bible in European worldviews as the singular, literate revelation in which all of world history was revealed. Thus, when unknown peoples were encountered they were explained by locating them within the Bible.

Gradually, the significance of the encounters and the striking differences of native peoples caused Europeans to rethink their own identities and to reflect on their own historical past. The European Enlightenment and scientific worldview from the eighteenth century gave rise to ethnographic analyses of the societies and religious activities of distinct native peoples. Influenced by nineteenth- and early-twentieth-century

anthropology, the historical studies of Native American societies from this period often presented a single informant's remembered culture as normative and timeless for that whole society. These idealized perspectives tended to freeze Native American lifeways as unchanging over time.

Ethnohistorical studies have critiqued these static interpretations by simply presenting the changing descriptions of native peoples within written Euro-American historical records themselves. These academic investigations are significant, but they are strikingly different from native modes of historical remembrance. In fact, many researchers manifest an ahistorical bias that does not allow them to understand the deep historical visions embedded in Native American lifeways. Some of these native modes of historicity are consciously articulated while others are more performative and symbolic. Often these native modes of remembering and transmitting the deeper meanings of their cultures resisted the historical impositions of dominant societies.

*We walk in our moccasins upon the Earth / And beneath the sky / As we travel on life's path
of beauty / We will live a good life and reach old age. • Navajo Blessing*

History Among Native American Religions

From Native American perspectives the question “What ways of knowing history are embedded in Native American religions?” generates strikingly different responses. While not exhaustive, the following list includes some considerations for understanding the history of “Native American religions” from the standpoints of native communities and individuals:

1. Native American religions begin and end with living peoples who speak of the origins of the world and themselves as present realities. This historical consciousness is now both oral and literate, but in both instances it is told by native voice and not locked in library texts or museum holdings of mainstream societies.
2. Discussion of rituals, myths, sacred objects, songs, and seminal places and ideas all hold historical insight for native peoples. Unlike academic history that attempts to describe objectively events, religious objects, and narratives, native historical awareness often sees them as persons deserving respectful treatment, even avoidance if one is not qualified to approach or embrace them.
3. Native history typically makes connections that seem atemporal to Western academic perspectives, but that actually link past, present, and future like a “hypertext” in which past or future events stand in immediate relationship with the present with regard to meaning, causality, and consequence. This shape-shifting and multivocal character of native narratives is not simply a matter of style of literature but indicates ways of perceiving the world that are creatively different.
4. Place occupies a central role in native historical consciousness. In native understanding the sensual engagement with place is an act of cultivation that may bring an individual or group to realization of cosmological values embedded in the lifeway. Sacred places provide foundational insight into that

which gives identity to native peoples. This is unlike the passive, objective roles of the environment in Western historical thought, in which the subjective human constructs, manipulates, and imposes meaning on place.

Narratives as Present Realities

Regarding the first point in the list above: the ways in which native peoples present themselves in remembered form are the myths of origin and legends of historical events considered to have happened since humans arrived. The historicity of myths and legends is a major stumbling block for most Western historians. For example, the Tewa anthropologist Alphonse Ortiz, in recounting the San Juan Pueblo origins, gave a strikingly simple and direct account of his people, saying: “In the very beginning we were one people. Then we divided into Summer people and Winter people; in the end we came together again as we are today” (Ortiz 1969, 29). Understanding this complex mythological statement involves research into Tewa language, myth, social structure, political governance, and religious ecology. That is, the myth provides insight into the living social structures of San Juan Pueblo, and the myth provides formative insight into Puebloan understanding of who they are as a people from the origin time into their present homeland.

The Jemez Pueblo historian Joe Sando (1982, 2) observed that:

If we accept Native North American oral history . . . then we can start with the ancient people who have been in North America for many thousands of years and still allow for European and Mediterranean colonists to strengthen or boost the developing culture. This appears to be what indigenous people have been saying in their oral history. But later Europeans with their “proof positive” and “show me” attitudes have prevailed, and remain largely unwilling to consider, much less confirm, native creation accounts.

Sando claims a literalist interpretation for myth based on the living presence of his people in their ancestral Pueblo homes. Acceptance of the historicity



of myths is a major challenge for historians, but it also opens the possibility for “seeing with a native eye” the historical facts embedded in these stories (Capps 1976, 9).

The Oral Native Voice

The second point in the list draws attention to the need for native voice in reconstructing Native American religious history. Deep authenticity and fragility of native voice are found in the oral narratives that transmit the creation stories, legends, and tales of the people. Actual native voice, layering of stories within stories, and the immediacy and intimacy of oral narratives are crucial correctives to a view of native history that abhors subjective interpretation, ambiguity of outcome, and experiential voice as authoritative.

When oral stories are labeled myths it accentuates their sacred, revelatory character, but that term may also situate the stories as timeless, unchanging, and permanently past. When native peoples narrate stories of origins they may or may not be evaluated according to their conformity to traditional versions. Often narrations are accompanied by rituals that emphasize the living, present character of the beings, places, and events named. Thus, among a number of native nations there are animal-addressing, place-naming, ethic-declaining narratives that accompany major rituals. These should not be seen as either simply describing past events or as objectively categorizing land, animals, or laws.

For example, the Midewiwin ceremony of the Anishinabe peoples of the Great Lakes region transmitted narratives of these tribes’ origin-migration. Named geographical locations not only indicate where the ceremony had been performed but they are also honored as significant stopping places of sacred, spirit beings (Manitou). In effect the ceremony of Midewiwin validated the migration and formation of this Great Lakes people by appealing to the ancient spiritual animal masters. Midewiwin has been described as an “extinguished” ceremony in some academic works, but native practitioners have reasserted the contemporary survival and relevance of this ceremonial complex. While not all Anishinabe religiosity can

be collapsed into Midewiwin, the revitalization of this ceremony in the contemporary period accentuates an emphasis in native religious understanding that formative cosmological experiences endure into the present and identify living people as much as ancestors, according to the author Wub-e-ke-niew (1995) in *We Have the Right to Exist*.

Cosmological Narrative and Song

The third point draws attention to the interactions of rituals, myths, sacred objects, songs, and seminal places and ideas as having the status of “persons” in Native American religions. While this complex of relations is differently expressed among particular peoples, one striking example comes from the Gitskan peoples of central British Columbia.

Each Gitskan house is the proud heir and owner of an *adáox*. This is a body of orally transmitted songs and stories that act as the house’s sacred archives and as its living, millennia-long memory of important events of the past. This irreplaceable verbal repository of knowledge consists in part of sacred songs believed to have arisen *literally from the breaths of the ancestors*. Far more than musical representations of history, these songs serve as vital time-traversing vehicles. They can transport members across the immense reaches of space and time into the dim mythic past of Gitskan creation *by the very quality of their music and the emotions they convey...*

Taken together, these sacred possessions—the stories, the crests, the songs—provide a solid foundation for each Gitskan house and for the larger clan of which it is a part. According to living Gitskan elders, each house’s holdings confirm its ancient *title to its territory and the legitimacy of its authority over it*.

In fact, so vital is the relationship between each house and the lands allotted to it for fishing, hunting, and food-gathering that the *daxgyet*, or spirit power, of each house and the land that sustains it are one. (Wa and Delgam 1987, 7, 26)

The historical testimony of this complex of songs and rituals connects architecture and traditional

environmental knowledge. Gitskan elders voice their concerns in these religious performances for the cosmological and historical continuity of community vitality.

The Linkage of Past, Present, and Future

Regarding the fourth point, namely, the simultaneity of memory in Native American religions, the Pawnee/Otoe author Anna Lee Walters (1992, 77) wrote that she:

discovered two principal sequences of tribal history. The first starts at the beginning and works its way toward the present. The second starts with the present and works its way back to the beginning. Although there may be discussions on the history of the people moving to a particular place, for example—isolated events—often these historical notes seem to be just that until they are pinned down in this large framework.

Interpreting these dynamics of native historicity may necessitate abandoning chronological, linear, interpretive-building emphases on personalities, events, or social and economic forces. In the time-linkage narratives of Native American lifeways the primary focus is more typically on seminal realities of place, action, and spiritual presence. Rather than accept ideas or mental constructs as primary, the mutual participation of humans and the beings of the Earth opens a way toward understanding the wisdom of history.

A striking illustration of this complex linkage is the tobacco symbolism found throughout the American hemisphere. In one particularized expression of tobacco ceremonialism the shaman-healers of the Warao peoples of the Orinoco Delta in Venezuela describe the history of human consciousness as beginning in the House of Tobacco Smoke. When a Warao shaman applies tobacco smoke to a patient or a victim, he breathes a cosmological force that simultaneously reaches back to primordial origins, heals in the present, and establishes ethical responsibilities and orientations into the future. For the Warao

wisdom-keepers tobacco symbolism is a linkage to an archaic shamanistic substratum that still extends throughout the American hemisphere, according to Wilbert in *Mystic Endowment* (1993).

Place and Historical Consciousness

Finally, a widespread cultural activity among Native Americans that provides exceptional insight into their historical consciousness is sensing place. Native sensing of place is a daily, lifeway engagement with the local landscape as a means of cultivation of self and community. Ordinary lifeway interactions with local places are charged with stories that transmit ethical teachings, community identities, and cosmological presences.

The felt authority of the past in a particular place is communicated with humor and poignancy by the Western Apache, whose understanding of place is likened to drinking deeply of the ancestral wisdom that resides there. Such wisdom cannot be taught by rote but is awakened by engaging place deeply with all of the senses, with one's body. This is a historical consciousness that acknowledges informative ideas rising up from soil, that filters stories linked to places through one's own emotions, and that searches visually and intellectually for a whole understanding. After hearing a story of an Apache ancestor who fooled Coyote by enticing him to look up at her in a tree, Keith Basso describes how an Apache wisdom teacher, Dudley Patterson, affirmed his deep yearning to know the historical presence in places, saying:

"Our Ancestors did that!" Dudley exclaims with undisguised glee. "We all do that, even the women and children. We all look up to see her with her legs slightly apart. These places are really very good! Now you've drunk from one! Now you can work on your mind."...As vibrantly felt as it is vividly imagined, sense of place asserts itself at varying levels of mental and emotional intensity. Whether it is lived in memory or experienced on the spot, the strength of its impact is commensurate with the richness of its contents, with the range and diversity of symbolic

associations that swim within its reach and move it on its course. (Basso 1996, 143, 145)

Thus, Native American lifeways provide multiple ways of thinking about history, namely, in terms of the precontact history of Native American societies, the history of the encounter with European cultures, and the modes of historical consciousness embedded within Native American religions themselves.

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See also Art—Native North America; Shamanism

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Natural Gas

Natural gas consists primarily of methane. It is often located alongside other fossil fuels. Cleaner than other fossil fuels, gas is an important source of energy, both as a gas and in a liquified state, used in heating, cooking, and powering automobiles. Before it can be used as a fuel, gas must be processed to make it near pure methane.

Natural gas is a flammable mixture of hydrocarbon gases, formed primarily of methane (CH_4) and produced by the anaerobic decay of organic material over the course of millions of years. The history of natural gas usage goes back in time at least three thousand years, to the ancient civilizations of India, Greece, Persia, and China. But extensive use of natural gas only occurred following the 1960s.

At the beginning of the third millennium, natural gas fulfils a vital role in the global supply of energy. As with other important sources of energy, such as oil, the forces of demand and supply dictate that the location of known natural gas reserves brings with it a certain degree of political and economic power. As of 2009, Russia is the both the world's largest producer of natural gas and home to the world's largest proven natural gas reserves. The Middle East—including Iran, Qatar (home to the world's largest natural gas field), Saudi Arabia, and the United Arab Emirates—is also known to have significant proven reserves of natural gas.

When early civilizations first came across natural gas seeping out from under the earth's surface through fissures in rock and in the form of mysterious flames, they believed it to emanate from supernatural powers. Such experiences with natural gas flames were especially common in ancient India, Greece,



Natural gas spurts from an underground well.
New York Public Library.

and Persia. However, around 600 BCE the Chinese learned to use natural gas flames to boil brine, separating out the salt and providing drinkable water. Indeed, Confucius wrote of wells 100 feet deep along the Tibetan border.



In 1785 Britain was the first country to commercialize the use of natural gas, using it to light up houses, streets, and the like. Some four decades later, in 1816, natural gas started to be used for street-lighting in the United States. Natural gas was first discovered in North America as early as 1626, when explorers observed that Native Americans in the area of Lake Erie were igniting gases that seeped out from the earth's surface. The first natural gas well, however, was only dug in the United States in 1821, in Fredonia, New York, by William Hart. On 27 August 1859, Edwin Drake found both natural gas and oil at some sixty-nine feet below earth's surface. Drake's findings marked a new age for natural gas production in North America. Prior to his work, natural gas was primarily produced from coal. In order to commercialize his well's capacity, a pipeline was built from the well to a nearby village, Titusville, Pennsylvania.

Generally speaking, in the nineteenth century it seemed that natural gas was about to gain a vital role in Europe and North America as a lighting fuel for homes and public streets. But its role was limited due to the difficulty in transporting it from the well to its end-users, as the existing pipeline infrastructure was not capable of doing the job. Moreover, with the advent of electric power in the 1880s, natural gas lights were replaced by electric lights.

As natural gas had lost its role as a lighting source, the natural gas industry searched for new uses for its product. In 1885 the inventor Robert Bunsen invented a device that used natural gas for cooking and heating, allowing its flame to be regulated. The Bunsen burner diversified the potential benefits of natural gas and encouraged the global demand for it. However, the difficulty in transporting gas to its potential users continued to restrict its actual usability.

Improvements in pipe-making, metals, and welding technologies during World War II made pipeline construction more economically attractive. Thus, after the war the world began building an extensive network of gas pipelines. Today, this network consists of over 1 million miles in the United States alone (enough to stretch to the moon and back twice). The

location and control of these pipelines, particularly across international borders, is a potential source of political and diplomatic tensions; as occasionally experienced between Russia and some of its former satellites, such as Belarus and Ukraine, during the early 2000s. Moreover, the utilization of natural gas was diversified to include water heating, space heating and cooling, and as a fuel for generating electricity. The transportability of natural gas opened the possibility of using it for a variety of home appliances—for oven ranges and clothes dryers, for example.

The oil shortages of the 1970s turned the world's attention toward ways of conserving energy, while a search for cheaper, more available energy sources also began. The rise of environmental awareness in the 1960s and 1970s further impacted the energy industry, encouraging the development of energy generation sources that would be less polluting. As a result of these developments, natural gas became the preferred fuel for energy generation. But while natural gas is cleaner than other fossil fuels, it nevertheless does contribute to carbon emissions, and given that it consists primarily of methane, natural gas is a greenhouse gas.

Continued oil shortages and concerns about environmental quality are expected to further increase the demand for natural gas. Compressed or liquefied natural gas is considered a cleaner and economically competitive alternative to automobile fuels such as petroleum and diesel. As of 2009 there are approximately 10 million natural gas powered vehicles in use around the world, many of them as public transport such as buses. Changes in the generation segment of the power industry, such as turning to fuel cells, which are combustion-free, and the quest for pollution-free power generators capable of being sited at the end-user's place of consumption, also are expected to increase our reliance on natural gas.

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See also Energy

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Nature

All cultures depend on the natural world—plants and animals, the weather, the sun and the sea—for their sustenance. Likewise, each culture has creation stories that classify and provide ethical concepts about its place in the natural world. But not all cultures embody the multitude of universal laws, physical matter, and forms of life on Earth as Western culture does, and attempt to express it all as a single concept called *nature*.

The cultural historian Raymond Williams, in his book *Keywords*, traces the changes in usage of the word *nature* in the English language from the thirteenth to the eighteenth century. He concludes that *nature* “is perhaps the most complex word in the language” (Williams 1976, 184).

Scholars who study the history of concepts of nature often point to Asian cultures such as China and Japan to make the distinction between Eastern and Western concepts of nature. In their essay collection, *Asian Perceptions of Nature*, Ole Bruun and Arne Kalland find that no Asian culture has a single term that encapsulates all of nature. Kalland and S. N. Eisenstadt say that among the Japanese, “reality is structured in shifting contexts and even in discrete ontological [relating to existence] entities, as opposed to the absolutist Western approach” (Bruun and Kalland 1995, 11). Likewise, when a researcher asked villagers in Sri Lanka if they had one word “which means things such as forests, wild animals, trees, birds, grass and flowers,” responses varied, including “thick jungle,” “sanctuary,” and “all sentient beings” (Bruun and Kalland 1995, 153).

The literature on the etymology of the word *nature* is complicated. *A Documentary History of Primitivism*, Arthur O. Lovejoy’s study of nature in Greek

and Roman history, outlines the birth of the concept. The word *natura* meant “genesis, birth, origin.” The Greek poet Homer (c. 700 BCE), in providing a physical description of an herb, also provided its character, its “nature.” To the Greek dramatist Aeschylus (524–456 BCE), “nature” referred to visible characteristics that are assumed to be innate. The contrast between reality (nature) and appearance occurred as well. For example, the pre-Socratic philosophers distinguished between the appearance of a couch and the true nature of a couch—the wood from which it is constructed. During this period people also came to think of nature as the entire cosmic system and its laws.

The English writer C. S. Lewis in his *Studies in Words* writes: “A comparatively small number of speculative Greeks invented *Nature*—Nature with a capital.” This invention required “taking all things they knew or believed in—gods, men, animals, plants, minerals, what you will—and impounding them under a single name; in fact, of regarding Everything as a thing, turning this amorphous and heterogeneous collection into an object or pseudo-object” (Lewis 1967, 35, 37). Clarence Glacken, in his *Traces on the Rhodian Shore*, reviews the force of the design argument in the history of nature from its emergence as early as the Greek historian Herodotus (484–425 BCE) through the seventeenth century CE. Conceptions of the “purposefulness in the creation—that it was the result of intelligent, planned, and well-thought-out acts of a creator,” including a sense of the fitness of nature to human needs, have been important in Western constructions of nature (Glacken 1967, 39).

From its beginning then the word *nature* referred to the whole material world and to intrinsic form and creative forces. One meaning of the word



This Maoist Chinese proverb says: man must conquer nature.

nature was enfolded within another. During the fourteenth century *nature* as “the essential quality or character of something” took on the additional sense of “inherent force.” By the seventeenth century *nature* as the material world overlapped with *nature* as intrinsic form and creative forces. Thus, *nature*, which refers to a “multiplicity of things and creatures, may carry an assumption of something common to all of them” (Williams 1976, 185).

People also personify and abstract nature. The ancient Greek philosophers, taking a stance that was common in paganism at the time, believed that the natural world is alive, an all-encompassing animal with both mind and soul, binding animals (including humans) and plants in intellectual, psychic, and physical kinship. Plato (428/7–348/7 BCE) in his *Timaeus* conceived of the soul as female. Lovejoy suggests that the Roman orator Cicero (106–43 BCE) propelled the concept of nature as goddess from the Greeks into the eighteenth century. On the other hand, Carolyn Merchant, in *The Death of Nature*, traces the tradition from the Neoplatonism (Platonism modified in later antiquity to accord with Aristotelian, post-Aristotelian, and Eastern conceptions) of the Roman philosopher Plotinus (204–270 CE) to twelfth-century Christianity, which placed a female nature “as more powerful than humans, but... subordinate to God” (Merchant 1980, 10). Nature personified as female contains a good deal of ambiguity, being seen as chaotic and destructive, as innocent and tainted, and as an expression of the divine order. C. S. Lewis argued that this personification of nature as female has been the most difficult to overcome, but many environmental historians say the seventeenth and eighteenth centuries were the time when nature was most rigidly confined and its long history of vitalism (a doctrine that the functions of an organism are caused

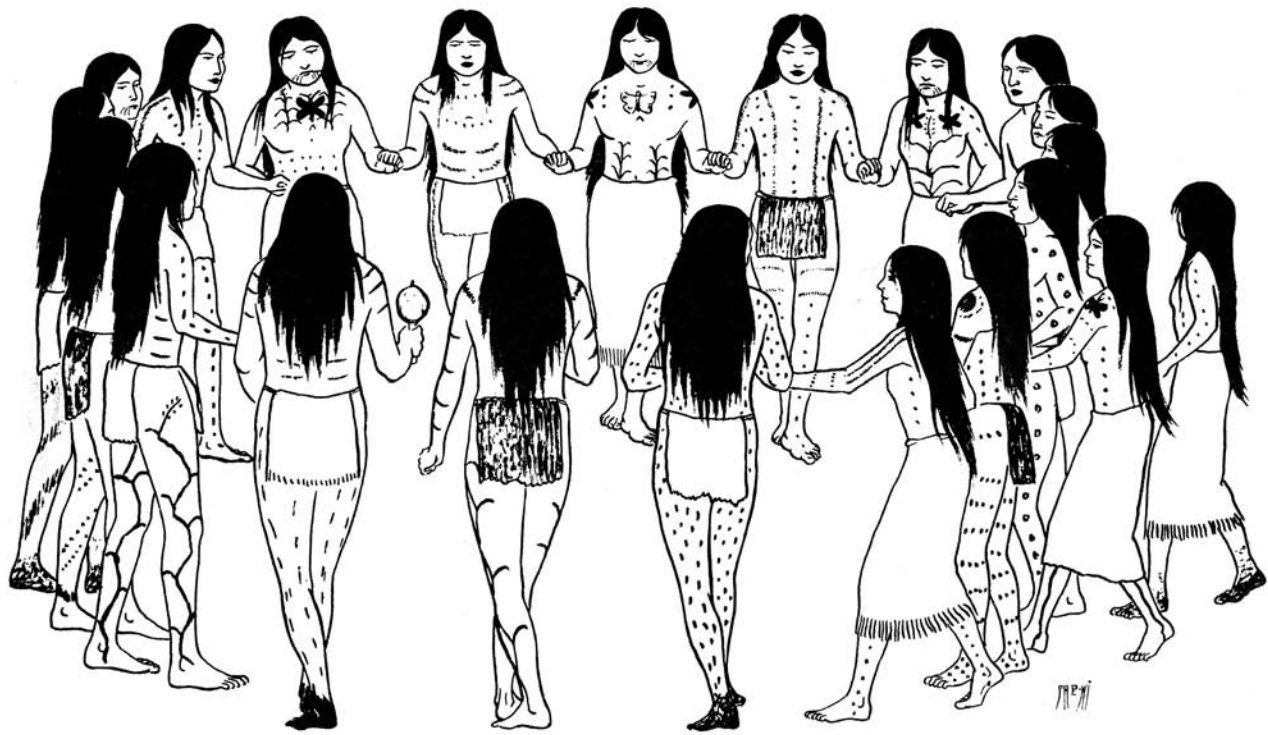
by a vital principle distinct from physicochemical forces) reduced.

Modern Times

Carolyn Merchant locates “the death of nature” in the rise of mechanical philosophy. Such thinking is associated with the philosophers Francis Bacon (1561–1626) in England and René Descartes (1597–1650) in France. These men, critical of organic worldviews in which the world is personified as a forceful, living body, viewed nature as passive, inert matter that is acted upon by physical laws that are set in motion by a clockmaker deity. One result of the Scientific Revolution was that female nature was transformed “from an active teacher and parent... [to] a mindless, submissive body.” That body was submissive first to God and then through God to humankind (Merchant 1980, 190).

Natural historians, strongly influenced by the explanatory power of mathematics and physics, continued to search for stable order in the rapidly increasing numbers of animals and plants that resulted from the voyages of discovery from the fifteenth to the nineteenth century. The Swedish botanist Carolus Linnaeus (1707–1778) created the first universally accepted system for organizing the members of living nature in an arrangement that apparently revealed God’s design. Continuing a Greek tradition, however, Linnaeus viewed change in nature as fundamentally cyclical, always returning to the same starting point.

Mechanical philosophy located nature in mathematically based laws that play out in the physical world, in which the Earth can be understood through “a series of deductions from abstract premises” with little consideration for final causes and less interest in the abundance of life (Glacken 1967, 406). Although Linnaeus participated in the urge to render a nature ordered by abstract laws, he also inspired the rise of natural history by giving naturalists tools to organize their botanical discoveries. The obsession with documenting and organizing the abundance of life derives as well from a group of writers, many of them influenced by Linnaeus, who returned to classical ideas of



Many cultures attempt to control nature through ritual. This drawing shows Tohono O'odham (Papago) in the desert of southern Arizona participating in a rain dance.

organic nature, argued for final causes and design in nature, and sought them in observations of the sensory world. The Englishman John Ray (1627–1705), the leading natural theologian, in his *The Wisdom of God in the Works of Creation* (1691), emphasized the interrelatedness of animals, plants, and habitats as evidence of a wise creator. Naturalists who came later continued to investigate the intricacies of relationships in nature even as they moved away from the argument from design.

One of the most persistent characteristics of nature throughout the sixteenth to eighteenth centuries was the law of subordination. Lovejoy, in his *The Great Chain of Being*, outlines the belief that the deity appointed each species a fixed place in an eternal chain of being from the lowliest maggot through humans to God. The task of natural history was to fit new discoveries into the appropriate link in the chain. The environmental historian Donald Worster, in his *Nature's Economy*, traces the history of nature as both a sacred and an economic system from the Greek word for “house” (*oikos*) through its amplification to refer to household management, the political “oeconomy” of human societies, and nature’s economy. Thus, Linnaeus, in his essay, “The Oeconomy of Nature”

(1749), describes nature as the “earth household” in which God is the “Supreme Economist” who rationally ordered the cosmos and “the housekeeper who kept it functioning productively” (Worster 1985, 37).

By the beginning of the nineteenth century two scientists—the English geologist Charles Lyell (1797–1875) and the German geographer Alexander von Humboldt (1769–1859)—began a discovery process that swept away the singular chain and the stable taxonomy (scientific classification) and led to questions about the role of a designing deity. In their footsteps walked the English naturalist Charles Darwin (1809–1882), who discovered a basic key to understanding the history of nature. Benefiting from Lyell’s understanding of the age of the Earth’s crust and its history of sometimes-violent change and from Humboldt’s discoveries of geographical diversity and mutual dependency in plant groupings, Darwin sailed to the New World, arriving in 1835 at the Galapagos Islands, an isolated archipelago off the coast of Ecuador in South America. The creatures that he saw there were very like and yet very different from South American species. His observations led him to develop the theory that isolation, chance migration, and fit with a specific environment lead to the evolution of new species.

The English economist Thomas Malthus's (1766–1834) *An Essay on the Principle of Population* gave Darwin the mechanism for evolution: the elimination of the weak and the survival of the fit. Darwin called this mechanism “natural selection.” When he published *On the Origin of Species* in 1859, the objectified view of material life of the mechanical philosophers, as well as the eternally fixed singular chain of being of the natural theologians, was challenged by a world that Darwin called “an entangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth.” The result was nature that, although partaking of universal, unchanging physical laws, had a distinctive history: “whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved” (Darwin 1964, 489–490).

The Age of Ecology

Nature, in gaining history, regained some of the vitality that it had lost under the reign of mechanical philosophy. Darwin took the Linnaean conception of a stable chain of being and put it in motion through competition and co-adaptation. The historian Donald Worster emphasizes the shift during the late nineteenth and early twentieth centuries to an imperfect nature—communities of competing lives that are contingent along axes of space and time. The ecologist Paul Sears situates Darwin's centrality to ecology in his observation that “environment had from the beginning built itself into the very form and organization of all forms of life” (Sears 1950, 56). Scholars generally credit the German zoologist and comparative anatomist Ernst Haeckel (1834–1919) with coining the term *oecologie* (by 1893, *ecology*) in 1866. Worster agrees with Sears that Haeckel grounded the web of life in Darwin's theory that the economy of nature is governed by relationships that derive from the struggle for existence.

The lack of a designer did not imply that no order exists in a nature that is conceived of as ecological. During the early twentieth century botanists and plant geographers in the United States and Europe gradually

discovered in plant communities a changeable, active nature. By the 1930s this nature was defined most forcefully in the work of the U.S. botanist Frederic Clements (1874–1945). He argued that nature is dynamic but that change occurs in patterns of “successional development” over time. Innovation through competition is progressive in the sense that a specific habitat “begins with a primitive, inherently unbalanced plant assemblage and ends with a complex formation in relatively permanent equilibrium with the surrounding conditions” (Worster 1985, 210).

Both ecology and the earlier natural history understated the roles of inorganic forces in the creation and maintenance of life. Under the ecosystem concept that was developed by the British botanist Arthur George Tansley (1871–1955) in 1935, mechanical philosophy returned through twentieth-century thermodynamic physics as a powerful approach to constraining nature. Uniting living and nonliving aspects of the world under the processes of energy flow emphasized nature's processes as historical while repudiating the organic community posited in Clements's version of nature. Nature as ecosystem is as linear as nature as climax community, but time moves toward entropy (gradual decline into disorder) rather than toward progress. As Donald Worster describes it, “the ecosystem of the earth, considered from the perspective of energetics, is a way-station on a river of no return. Energy flows through it and disappears eventually into the vast sea of space; there is no way to get back upstream” (Worster 1985, 303). Both Clements and Tansley, however, assume a predictable trajectory in natural history.

Historical nature by the end of the twentieth century had acquired randomness, chaos, and chance. The ecologist Daniel Botkin's *Discordant Harmonies* posits an organic nature, a “living system, global in scale, produced and in some ways controlled by life” (Botkin 1990, 189), which may be modeled through computer programs, uniting Clements and Tansley, but with a critical twist. Nature abstracted is essentially ambiguous, variable, and complex; time is not singular but rather a sheaf whose arcs and marks are defined by probability, “always in flux, changing over many scales of time and space, changing with individual births and deaths, local disruptions



and recoveries, larger scale responses to climate from one glacial age to another” (Botkin 1990, 62). In the twenty-first century nature has a radically contingent history that is particularly troublesome in light of the role of nature in human history.

Nature and Humans

Exploring the other side of the equation—how to place nature in history—requires considering the place of humans in nature. Glacken’s *Traces on the Rhodian Shore* covers the preindustrial history of humans and nature. He posits that throughout time the West has regarded the natural world with several questions, all arising from the sense that the Earth is an inherently habitable place for humankind. Is this Earth apparently so fitting an environment for organic life, “a purposely made creation”? What is the influence of the Earth’s climates, physical terrain, and continental configuration, that is, the environment in which life is embedded, on the shape of human culture and on individual health and morality? Finally—and coming increasingly into play from the eighteenth century to the present—in what manner have humans through their artifice acted as “geographic agents” changing nature “from its hypothetical pristine condition” (Glacken 1967, vii)?

Much of people’s attempt to describe the history of nature has centered on the first issue—on teleological aspects of nature. Although the idea of nature as a product of design arose independently of the concept of environmental influence, each reinforced the other. Organic life (including humans and their cultures) was seen as adapting to “purposefully created harmonious conditions” (Glacken 1967, vii). Human artifice, distinct from “first” nature and exemplifying the human place in the chain of being just below the Creator, constituted a “second” nature cultivating and adding improvements to the design. From the Greeks until the eighteenth century Western conceptions of nature in human history portrayed it as the world out there to which humans adapt—but part of that adaptation is to order nature. Human creations of second nature, through domesticating animals and hunting, through cultivating crops and digging canals, settled

wild lands. However, until the seventeenth and eighteenth centuries such activity assumed an inviolate stability in first nature.

As nature itself began to develop a contingent history during the modern era, humans began to recognize their role as agents of geographic change. Human history—emerging during the Renaissance out of a growing self-consciousness about the power of human control over nature and pushed by the belief that such power distinguishes humans from the rest of nature—became a narrative about harnessing the elements (through arts such as alchemy, which was a medieval chemical science and speculative philosophy aiming to achieve the transmutation of base metals into gold) and transforming the landscape for aesthetic and economic purposes. Just as the Age of Exploration contributed to an emerging sense of nature’s history, it also offered comparative evidence of the interactions between human history and natural history. In addition to new animals and plants, the discovery and exploration of the New World offered an aspect of nature seemingly untouched by human artifice. Glacken says that by the eighteenth century the French naturalist George Louis Leclerc, Comte de Buffon (1707–1788), relied on the contrasts between Europe and the Americas to construct his history of the Earth as ultimately “seconded” by the history of human striving. Buffon, who little appreciated the wild, uninhabited places on Earth, saw second nature as both an improvement of first nature and an improvement of human civilization.

Agents of Geographic Change

In the New World the importance of modern humans as agents of geographic change was more obvious. Early commentators such as the Swedish botanist Peter Kalm (1716–1779) noted that settlers were replacing old environments with new and raised questions about their impact on first nature and whether second nature improved the prospects for human habitation. Industrialization in the United States and Britain accelerated the transformations of nature, sharpened the distinctions between city, country, and wild places, and dislocated increasing

*The flesh grows weary. And books, I've read them all. / Off, then, to where I glimpse the spray
and squall / Strange birds delighting in their unknown skies! • From "Sea Breeze" by
Stéphane Mallarmé (1842–1898), translated by Richard Wilbur (b. 1921)*

populations from labor on the land to labor inside factories.

Romanticism, a transcontinental philosophy that granted privilege to first nature as an organic force in human history, made the most influential critique of people's attempts to second nature. Where Buffon argued that Earth history is improved by the shift from first nature to second nature, the U.S. Romantic transcendentalist and nature writer Henry David Thoreau (1817–1862) countered that Earth has its own history, which humans destroy by seconding nature. For the Romantics people who embedded themselves in first nature—returning at least to the countryside and at best to more untrammelled spaces—countered what the Romantics viewed as the growing dominance of mechanical philosophy and its attendant materialism and repression of the innate spirit in life.

Another key figure in the effort to place nature in history was a contemporary of Thoreau—the U.S. scholar George Perkins Marsh (1801–1882). Environmental historians widely credit Marsh's *Man and Nature: or, Physical Geography as Modified by Human Action* (1864) as the first comprehensive analysis of the harmful effects of human modifications on nature. Marsh compared soil erosion and forest destruction in Vermont with degraded environments in the Mediterranean basin and histories of land and resource use in Europe and Asia and concluded that "man [sic] is everywhere a disturbing agent. Wherever he plants his foot, the harmonies of nature are turned to discord" (Marsh 1965, 36). Marsh urged his contemporaries to be cautious in seconding nature, always to consider what must be learned from the priorities of first nature.

However, Marsh's image of people as disturbers of a pristine nature raises one of the most controversial meanings of nature for contemporary environmental history. Marsh and Thoreau, like many people of the nineteenth and twentieth centuries, make sharp contrasts between a world of nature "out there" and people. The question of people's place in nature has been answered ambiguously for the past two thousand years. One of the dangerous ambiguities about nature is that it may both contain and exclude people. During the nineteenth century critics of industrialism often

argued, as Marsh and Thoreau do, that the artifices of people had shifted from improvement to destruction and were not seconding but rather were disturbing nature's history. People and their artifices then become unnatural, alien to nature. Similarly, during the early twentieth century two key figures in the age of ecology, Clements and Tansley, disagreed on the role of people in nature, with Clements making a sharp distinction between the disturbance brought by the plow and presettlement prairie biota (the flora and fauna of a region) and Tansley arguing that people can make ecologically sound changes by their artifices.

The U.S. environmentalist Aldo Leopold said that the twentieth century would require an ecology-based "land ethic" that "changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such" (Leopold 1949, 204). Marsh, Clements, and Thoreau shared Leopold's view.

This controversy over the role of nature in human history continues into the twenty-first century. Most fundamental is the question of whether one may speak of a nature as existing free from human modification. Raymond Williams says that "we have mixed our labor with the earth, our forces with its forces too deeply to be able to draw back or separate either out" (Williams 1980, 83). Drawing on Williams, the historian William Cronon suggests that the trouble with wilderness is its erasure of the history of human striving from natural history, and the historian Richard White poses nature in contemporary times as an "organic machine"—a symbiotic meld of natural processes and human artifices (White 1995, ix). But for Williams the second nature that people have created is socially repressive, materialist, and polluted—toxic for humans and the rest of the organic world. The historian J. R. McNeill's *Something New under the Sun* reinforces the troubling reciprocity between recent understanding of the history of nature as not only changeful but also unpredictable and the disruptive forces of human history. McNeill says that during the twentieth century people took a planet whose future was uncertain and made change even

more volatile, primarily through technological and economic imperatives, thus creating a “total system of global society and environment . . . more uncertain, more chaotic than ever” (McNeill 2000, 359). Indeed, the most pressing global issue for the twenty-first century is the environmental future.

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See also Desertification; Erosion

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Navigation

The knowledge required to sail a ship between two known points by the shortest good way, and in the least possible time, is called navigation. Throughout history this science has been passed from generation to generation of seafarers; it includes the knowledge of prevailing winds, winds caused by seasonal changes, sea and tidal currents, water depths, and the capability to estimate the sailing time between various ports.

The science of navigation, or the charting of a ship through the water from one place to another, can be categorized as coastal, ocean, or practical navigation. Coastal navigation is practiced within sight of land, and orientation is provided by data such as the profile of the coastline, knowledge of conspicuous landmarks, water depth, and local sea currents. When sailing across an ocean or a large stretch of water beyond sight of the coast, a mariner will register his approximate position by dead reckoning. This is the method by which a ship's position is estimated by using the knowledge of the position at departure, the steered courses, and the distances made good since departure. Because a number of uncertain factors influence these calculations, the resulting position is not entirely reliable. The uncertain factors are the speed and direction of sea currents and leeway (the angle between the course steered by the compass and the course made good, and caused by the wind pushing the ship sideways). During a voyage the error caused by these factors cumulates so that the fault in a dead-reckoned position can become considerable, and lead to a dangerous situation. An exact position, a "fix," can be found by observing celestial bodies, a calculation, and a subsequent construction in the sea chart.

Practical navigation, although not the discussed in this article, is called seamanship, and includes the knowledge how to handle a ship, its rigging and sails, and maneuver the vessel.

Navigation in the Ancient World

Navigational methods and techniques were developed independently in several parts of the world. From drawings in pyramids it is known that Egyptian seamen used sounding rods to measure the water depth beneath their vessels. When Persian and Arabian mariners sailed across the Indian Ocean, and, roughly from the eighth century CE, toward China, they used a wind rose for orientation, based on the points of rising and setting of fixed stars. Latitude was estimated by observing the altitude of the sun and the polestar. In the ninth century, in some parts of the Indian Ocean, shore-sighting pigeons were used on Persian ships to set course to the nearest land. Around 650 CE Arabs, who were experienced in finding their way in the desert by observing stars, used a compass rose of which the points were named after the points of rising and setting of fixed stars. The lodestone, with which iron can be magnetized so that it points toward the north, was not used by Arab and Persian navigators before the end of the eleventh century. By the fifteenth century Arab seamen used the *kamal*, an instrument for measuring the altitude of celestial bodies, to estimate their latitude.

Sailors from islands in the South Seas traditionally crossed large stretches of ocean using a "wind compass," with which the directions of islands were defined by the character of the wind (e.g., moist, hard, dry, or gentle). Their "star compass" was defined by

History is a guide to navigation in perilous times. History is who we are and why we are the way we are. • **David C. McCullough (b. 1933)**

the directions in which a number of bright stars were seen. The polestar was used for an indication of latitude and the constellation of the Southern Cross was used to set courses. Pacific islanders memorized “zenith stars” for a number of islands, that is, stars with a declination equal to the latitude of the island in question, and which are known to pass overhead there, from east to west. By observing a star’s position they could see if they were to the north or the south of their destination, and adjust their course accordingly. South Sea navigators observed birds, cloud formations, and ocean swell for orientation and as an indication for their position.

Celestial Navigation

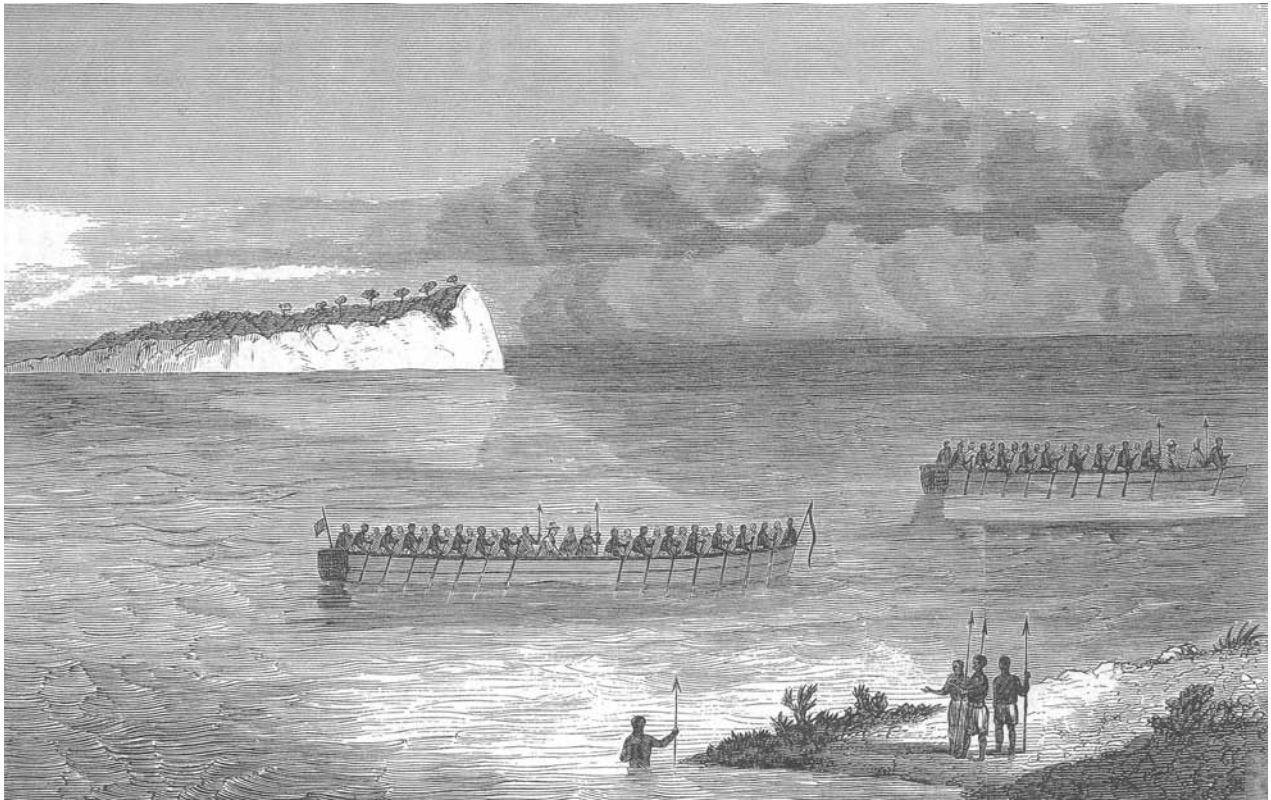
Navigation as we know it today was first practiced by Phoenician and Greek seafarers, beginning after the sixth century BCE. They navigated in the Red Sea and the Mediterranean in much the same way as Arabs, but had the advantage of sailing in an enclosed sea where land is never far off.

The first seaman said to have steered by stars was the mythological Odysseus. At one stage, as he crossed the sea during his imaginary voyage, night after night he had to keep the stars of the Great Bear on his left hand. This was the method of steering by horizon stars. A star was observed shortly after rising (or before setting) and used as a compass direction. After a while the next rising (or setting) star, with more or less the same amplitude, was used to steer by in the same way and thus the ship was held on the same course without the use of a compass. During daytime the position of the sun was observed and used for orientation. Culmination (when the sun reaches its highest daily position in the sky) indicated the south (or north), while in low latitudes sunrise and sunset pointed to two other major compass directions, east and west. In northern latitudes the polestar, although some degrees off the celestial North Pole, observed in combination with the Great Bear, also indicated the north. South of the equator, experienced seafarers could, at least for a while, still use the Great Bear to locate the north. They also estimated their position

with the use of phenomena observed around them, such as the direction and force of prevailing winds. At night zenith stars were indicators for their position relative to the northern and southern shores of the Mediterranean, while the altitude of the polestar and the sun at noon provided an indication of latitude. Knowledge of longitude was based on sailing times between the eastern and western shores of the Mediterranean. The magnetic compass was probably introduced on ships in the Mediterranean by crusaders, during the thirteenth century. Sea charts and sailing directions, still in manuscript, came into use in that area in the fourteenth century and after the art of printing was introduced in Europe a century later, these aids were used more generally.

In the early Middle Ages, Norsemen and Irish monks started to cross the North Atlantic Ocean toward Iceland. Because of the long Arctic summer, stars were of less use to navigation here than in southern latitudes. To estimate the position relative to the track to Iceland, the Shetland Islands and the Faeroes were used as “steppingstones.” These navigators also observed migrating birds, which showed them in what direction land was, and there is mention of Norsemen using ravens taken on board for this purpose. Seamen found that a group of clouds over the horizon indicated still-unseen land. When visible, Norsemen used the polestar for orientation at night, and the sun during daytime. They probably also used these celestial bodies for setting out their courses. The magnetic compass came into use in the north of Europe after it was introduced in the Mediterranean.

Navigation with specially developed scientific instruments, and tables with astronomical ephemeris, dates from the time of the maritime expansion of Portuguese and Spanish navigators, in the fifteenth century. When the Portuguese embarked on their voyages along the west coast of Africa their courses were generally north-south. They found their latitude by observing the polestar at night, and during daytime from the sun’s altitude at noon. For their observations they used the mariner’s astrolabe, a navigating instrument that was developed out of the astronomical astrolabe, probably around 1445. The cross-staff,

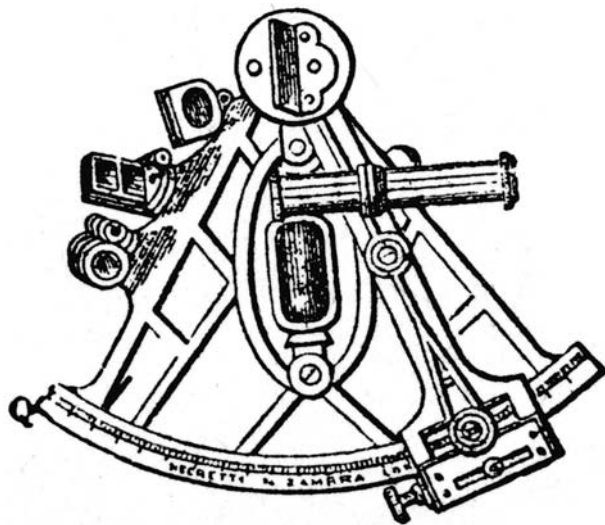


This line drawing depicts ships making their way across Lake Tanganyika in colonial Africa.

inspired on the *kamal*, and used for the same purpose, was introduced at sea about 1515. Beyond the equator, which was reached by 1474, the polestar is no longer visible. Although the Southern Cross had been seen by Portuguese seamen already in 1454, it was found that there was no southern polestar. It was then decided to try to improve the method of finding latitude from the sun's altitude at noon. As a result the first day-to-day declination tables of the sun were compiled. When Columbus sailed toward the Americas in 1492, he was provided with such tables in manuscript. Columbus was also the first to observe westerly variation. Variation is the angle between the directions of the magnetic and the geographic North Poles, and depending on the place on the Earth, it can be easterly, westerly, or zero. As the position of the magnetic pole changes slightly over a year, the variation increases or decreases. It is important that, when setting a course, the value of variation is taken into account.

After the first Atlantic Ocean crossing, and the crossing of the Indian Ocean in 1497, east-west courses were sailed more frequently, and it became necessary to measure longitude. The difference in longitude between two places can be expressed in the difference in time between the two. Columbus tried to find his longitude in the New World from observing a lunar eclipse, which he knew would also occur in Spain. He compared the local time of his observation with the predicted time it would occur in Spain. The effort failed because of the inaccurate prediction through imperfect knowledge of the moon's motion.

The Nuremberg astronomer Johann Werner, in 1514, was probably the first to suggest that longitude could be determined by measuring lunar distances, the angle between the moon and a fixed star. The moon moves across the sky relatively rapidly. At a given time the angle between the moon and a particular star is the same for every observer who can



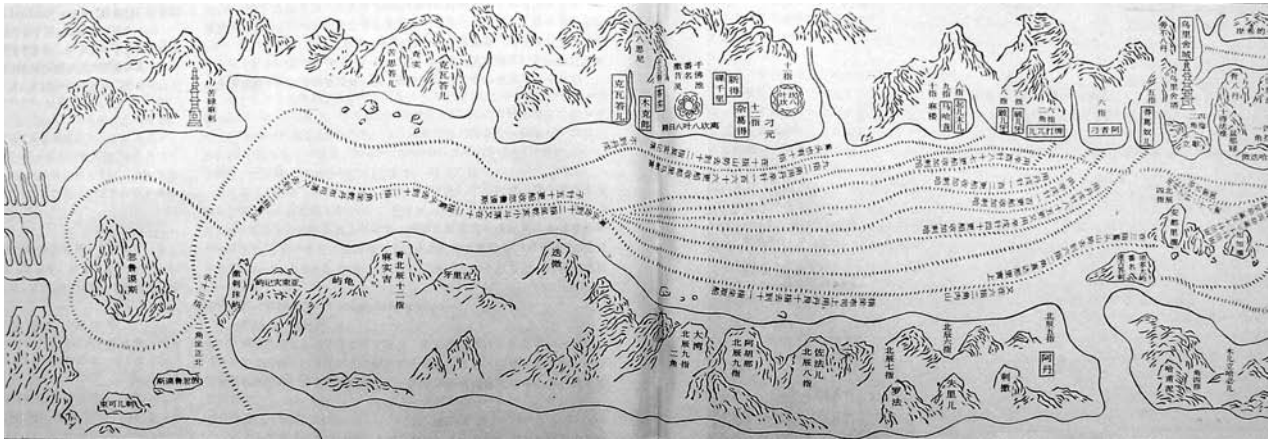
The sextant, an instrument that measures the angle between any two visible objects, made ocean travel safer and quicker.

see them both. The angle between the moon and a number of stars (called the distance) can be calculated ahead for certain dates and times, for a particular (prime) meridian. An observer measuring the angle would compare the result and his local time with the predicted result and time, and the difference between the two times would provide the difference in longitude. Werner's method is feasible, but at the time it was technically impossible to develop sufficiently accurate instruments and lunar tables. Ferdinand Magellan's astrologer in 1519 unsuccessfully tried to find the longitude in South America by conjunction of the moon and Jupiter. Failure was blamed on errors in the predicted astronomical ephemeris.

Navigators sometimes used the variation of the magnetic compass for estimating their longitude. Because of the apparent relation between longitude and variation, sixteenth-century scholars designed methods of converting variation into longitude. For this to be successful in practice, however, the method requires a vast amount of data on the magnetic variation, which was not available until the eighteenth century, when Dutch navigators estimated their longitude with variation during crossings of the Atlantic and Indian Oceans.

As the attempts to solve the question of longitude at sea failed, the king of Spain, in 1598, offered a reward for anyone who came up with a practical solution. This example was soon followed by the Dutch States-General, the governments of France and Venice, and eventually in 1714 by the British Parliament, which offered £20,000. The result was that a great many inventors claimed these prizes. Among those responding was Galileo Galilei, who suggested that the eclipse and occultation of Jupiter's satellites could provide a solution, as they are visible at the same instance for every observer. Lunar eclipse observations to determine longitude were done successfully by astronomer Edmond Halley near the Cape of Good Hope in 1719 and on land by Captain James Cook in Canada in 1766. However, to be successful for navigation, eclipse and occultation observations require great accuracy that, due to the movement of a ship, was almost impossible to accomplish at sea.

For the Royal Society of London for Improving Natural Knowledge (founded 1662) and the Académie Royale des Sciences in Paris (founded 1666), solving the question of how to find longitude at sea was one of the many subjects they engaged. An important step toward this was the founding of the Observatory of Paris in 1667, followed by Greenwich Observatory, near London, in 1675. Both institutions were commissioned to rectify the existing tables of stars in order to find the longitude of places for the use of navigation. Paris Observatory was the first to publish new tables of astronomical data for navigation, such as the daily celestial positions of the sun, moon and planets, and stars, which first appeared in 1678. From 1761 onward the publications also contained lunar tables, which made it possible to find longitude through the aforementioned method of lunar distances. The first accurate lunar tables had been calculated a few years previously by the German mathematician Johann Tobias Mayer. The British astronomer Nevil Maskelyne became the driving force behind the *Nautical Almanac*, which first appeared for the years 1767–1769 and also contained lunar tables. Another condition for using the lunar distance method was an accurate instrument for measuring the distance. That had been fulfilled in



Chinese navigator Zheng He's compass-guided chart to the Persian Gulf.

1731 when John Hadley of London designed the octant (also named Hadley's quadrant), a double-reflecting-angle measuring instrument far more accurate than the mariner's astrolabe and cross-staff. About three decades later it was successfully transformed into the sextant, and later adapted as the reflecting circle.

The method of lunar distances (lunars) was soon firmly established as a reliable method to find the longitude at sea. James Cook was among the first to apply it, in New Zealand in 1769, using the *Nautical Almanac* and a sextant. For many years lunars competed with the method of finding longitude by use of a chronometer. This is a clock that keeps the time on the prime meridian accurately during a voyage, and was developed successfully by the Englishman John Harrison, whose fourth timekeeper was awarded the longitude prize of British Parliament. Until the nineteenth century the astronomical solution by means of lunars and the mechanical method by means of a chronometer were both used at sea. Eventually the chronometer prevailed, because the method to find longitude by that instrument was much simpler than through lunars. An important result of the availability of these methods to find longitude was that sea charts became considerably more accurate.

A clouded sky prevents the taking of a noon observation of the sun, and a weather condition like that can last for days. In the mid-eighteenth century Cornelis Douwes, a teacher of navigation in Amsterdam,

developed the first successful method of double altitudes, taken before and after noon. Hence forward latitude could be found without the restriction of the traditional noon observation of the sun. Douwes's method was improved and remained in use until the nineteenth century, when position line navigation gradually also came into use. This is the name for various methods by which, through an astronomical observation and subsequent calculation and construction in a chart, a ship's position could be found at almost any time of the day. The first to develop a method by which a single observation of the sun or a star resulted in a position line was the American captain Thomas Sumner, in 1843. The intersection of several "Sumner lines," taken from stars in different directions, provided a fix. In the 1860s the Sumner method was improved by French astronomers and naval officers, and by then celestial navigation had reached the level at which it remained until long after World War II.

Electronic Means of Navigation

The development of wireless radio, at the beginning of the twentieth century, opened new possibilities, first through radio direction finding and later through radar and hyperbolic radio systems, such as Decca and loran (long range navigation). With these systems, within certain limitations, a position line or a



fix could be obtained independently of weather conditions. The first practical gyrocompass was invented in 1906, which made north-finding possible without using the Earth's magnetic field.

The next major development was the introduction of satellite navigation in the late 1970s. With the Global Positioning System (GPS), which became fully operational in the 1990s, a position can be obtained instantly, and it is far more accurate than through celestial navigation. As GPS became cheaper and easier to obtain, satellites have now replaced sextants and nautical almanacs completely. The Global Positioning System is operated by the United States government, and to insure independence from this system, the European Union supports and owns the European satellite navigation system, named Galileo, which should be operational around 2014. In the 1980s the electronic chart was developed. This is a digitized chart (a chart of which the image is built up of digits and made visible on a computer screen) that can be linked to other relevant navigational data, including GPS data, the actual water depth found with an electronic echo-sounding device, the ship's speed found with an electronic log, the gyrocompass, and radar-reflected images. In the decades to come, the electronic chart is expected to replace the traditional paper sea chart.

Navigating Airplanes and Autos

In the early years of aviation, airplanes were navigated by visual reference to the ground. As altitudes increased, "blind flying" (in clouds) became unavoidable, and various means of radio navigation were introduced. Most were non-directional radio beacons, and airplanes would fly from beacon to beacon. In the 1920s, the air plot technique, to find a dead-reckoned position, was derived from nautical practice. The first air almanac appeared in 1933, and five years later the first astronomical tables for air navigation were published.

In the 1940s sextants fitted with artificial (bubble) horizons were introduced, and a fix was found with celestial altitudes and the use of an air almanac

and astronomical tables. Short-cut methods for calculation were developed especially for aviation, as were navigating machines and navigational slide rules, such as Bygrave's cylindrical slide rule, which bypassed or skipped part of the calculation. During World War II radio navigation was further improved. For civil aviation, non-directional beacons remained in use over land, and for crossing oceans and deserts traditional celestial navigation was applied. After the War loran was used in civil aviation for crossing oceans, as were radio signals from dedicated ocean station vessels. During the 1960s, non-directional beacons were gradually replaced by VOR (Very high frequency Omnidirectional Range) stations; special techniques for polar navigation were already applied since 1957.

Due to the increase of aircraft in the 1960s and the introduction of jet aircraft, the requirements for position reporting became more stringent. Over land the use of ground radar by air traffic control increased but long-range (en route) navigation remained basically unchanged, although sextants were improved.

Inertial navigation was developed for civilian en route aviation use in the 1970s, replacing celestial navigation. At present, GPS is also seeing civilian use and expectations are that it will be playing an ever increasing role in future aviation.

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Nederlands Scheepvaartmuseum

See also Cartography; Henry the Navigator; History, Maritime

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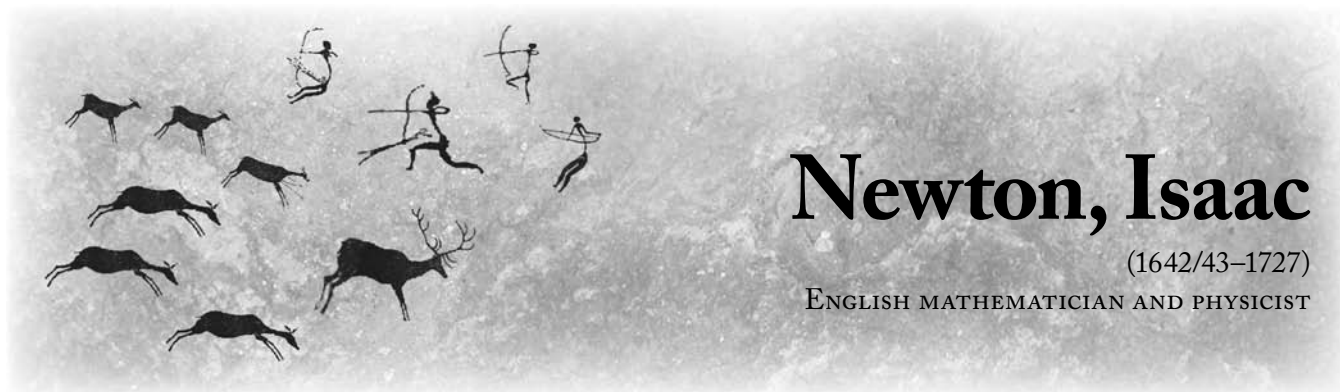
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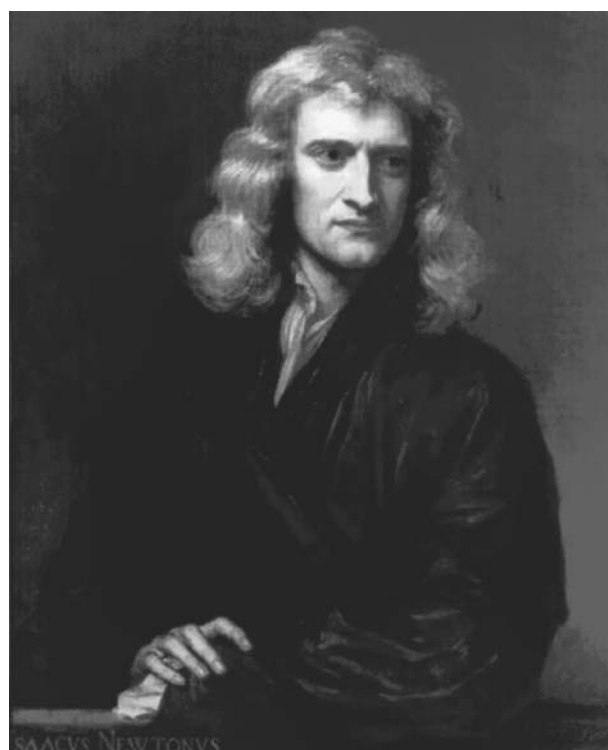
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Isaac Newton was the dominant figure in the Scientific Revolution, a creative period of experiment, observation, and theory that began in the mid-sixteenth century. Newton remains an icon of the scientific method, even for nonscientists who only vaguely know what he accomplished—for instance, the formulation of the theory of universal gravitation and the invention of calculus.

According to many historians, a revolution in scientific thought began when astronomers learned about the theory of Nicolaus Copernicus (1473–1543)—that the Earth revolved around the sun—which he proposed in a book published shortly after his death. Isaac Newton was the dominant figure in that Scientific Revolution (c. 1550–1700), and by the time of Newton’s own death, Copernicus’s theory had transformed western Europe’s understanding of the universe. Other than Charles Darwin (1809–1882) and Albert Einstein (1879–1955), Newton remains the world’s most widely known scientist, an icon of the scientific method. Newton himself was dissatisfied with his achievements, as they explained only certain aspects of the universe. Much more ambitious, he searched vainly for a single system that could explain everything, a unified system of the universe. Nor was he satisfied with learning merely *how* things happened; he wanted to know *why*.

Clearly unfit for the life of a farmer, Newton was sent by his family from its Lincolnshire farm to Cambridge University. He did not immediately impress his teachers there. He spent the most creative period in his life back in Lincolnshire when he temporarily left the university to escape an outbreak of plague. Nearly all his ideas originated during these eighteen



Sir Godfrey Kneller, *Portrait of Isaac Newton* (1689). Farleigh House, Farleigh Wallop, Hampshire.

months in 1665 and 1666. Newton fits the stereotype of the hermit scholar who lived in isolation for no purpose other than work. When Cambridge appointed him a professor of mathematics, he proved to be a poor teacher. He won respect (and election to the prestigious scientific Royal Society) when he built an impressive reflecting telescope.

In an age before specialization, Newton contributed to diverse fields of the physical sciences and mathematics. Often “publication” in private correspondence preceded print publication by many years. As a young

If I have seen further, it is by standing on the shoulders of giants. • Isaac Newton (1642–1727)

man, Newton began his study of color and light, which reached a climax with the publication of the *Opticks* in 1704. While still very young he developed the mathematical theory that he called the method of fluxions (later known as calculus). Concurrently, the German scholar G. W. Leibniz (1646–1716) developed differential and integral calculus. A bitter controversy followed: did Newton or Leibniz deserve the credit? They had worked independently, so the answer is both of them. Newton is best known for his theory of universal gravitation. According to a familiar but probably untrue story, it was when he saw an apple fall from a tree in the family orchard that he was inspired to recognize that the same forces, expressed in the same laws, controlled both earthly and celestial bodies. Written in Latin and published in 1687, Newton's major work on mechanics was the *Principia* (or *Mathematical Principles of Natural Philosophy*).

Although he engaged in unattractive quarrels with scientists who dared dispute the correctness or the originality of his ideas, he acquired more admirers than critics, both inside and outside the English scientific community. He briefly served in the House of Commons, and in 1696 he moved from Cambridge to London when patrons put him in the Royal Mint at a salary that made him rich. In 1703 Newton was elected president of the Royal Society, and in 1705 he was knighted. One of his very few close friendships appears to have been that with the young Swiss mathematician Nicolas Fatio de Duillier (1664–1753), in the early 1690s. Never married and suffering recurrent bouts of depression, Newton in his later years lived quietly with a niece. His religious views were unorthodox—he rejected the divinity of Jesus Christ—but, because these views were not fully known, he did not experience the persecution that his great predecessor Galileo (1564–1642) had suffered.

Although the reclusive Newton never traveled outside his native England, his work became accepted in much of Europe, but not all of it and not immediately or unanimously. For instance, Jesuit scholars remained loyal to the older Cartesian system, devised by René Descartes (1596–1650). His vortex theory credited impulsion in particles themselves (and not

attraction) with moving things around in the universe. Newton eventually won acceptance because his theories produced better practical results. For instance, his theory correctly predicted the return of Halley's comet. During the middle decades of the eighteenth century the French *philosophes* Voltaire (1694–1778) and Gabrielle Emilie le Tonnelier de Breteuil, Marquise du Châtelet (1706–1749) popularized Newton's ideas outside England among educated readers. Du Châtelet translated Newton's *Principia* into French and wrote a commentary describing new proofs of Newton's theories. Aided by Newton's prestige, the natural sciences became the model for the social sciences in the Enlightenment, with the latter borrowing the self-confidence that the former had earned. Still later, Eurocentric interpreters of world history adopted Newton and the concept of a scientific revolution as evidence for the superiority of the West.

Eventually, scientists throughout the world acknowledged Newton as their teacher and inspiration. For instance, by 1730 Jesuit missionaries brought some of Newton's astronomical ideas to China, and by the middle of the nineteenth century Newton's calculus and part of his *Principia* were available in Chinese.

In the 1930s a reaction against the old emphasis on individual genius as the explanation for scientific progress challenged Newton's importance. Marxists and others argued that science was a collaborative enterprise, influenced by contemporary ideology, and that the acceptance of new scientific ideas by nonscientists required an educated public. More recently, scholars pointed out that Newton had “unscientific” interests, including alchemy—turning base metals into gold—and biblical chronologies and prophecies. In fact, all of Newton's work was interrelated. It is inadequate to describe him as a scientist, a modern term. A man of his own times, he was a cosmologist who sought to understand everything as a single system. He remains a powerful symbol of the new science that eventually changed the world.

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See also Science—Overview; Scientific Revolution



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Nkrumah, Kwame

(1909–1972)

FIRST HEAD OF INDEPENDENT GHANA

Formerly known as the Gold Coast, Ghana was the first sub-Saharan African colony to win independence (in 1957) from European colonial rule, providing a model for other aspiring African states. Under Kwame Nkrumah's leadership, Ghana promoted a firm anti-imperialist foreign policy focused on creating pan-African political and economic unity in a "United States of Africa."

Independent Ghana's first leader, Kwame Nkrumah, was born in 1909 near the modern border between Ghana and Côte d'Ivoire. Established less than ten years earlier, this international boundary split the Nzima people, to whom Nkrumah belonged, between two different countries. The arbitrary nature of the borders of modern African states remains a major colonial legacy, and was a problem Nkrumah dealt with directly later in life through unification policies, which proposed redrawing African borders. Lucky to receive an education, Nkrumah eventually attended the Government (teacher) Training College. Here he was introduced to the ideas of the Jamaican Pan-Africanist Marcus Garvey (1887–1940). Garvey's writings emphasized the links between all people of African descent and the need to build an African Nation. It was also at college that Nkrumah became interested in going to the United States. He left the Gold Coast in 1936, but went first to London. While in London, Nkrumah learned of Ethiopia's defeat by the Italian Fascists. Years later Nkrumah said that at that moment he felt "as if the whole of London had declared war on me personally" (Nkrumah 1957, 27). The Italian invasion of



Kwame Nkrumah, an advocate of Pan-Africanism.

the last independent state in Africa was seen as an outrage throughout the black world. It clearly connected imperialism to war and highlighted the exploitation of Africa under European colonial rule. It was in this context that Nkrumah arrived in the United States.

While in the United States, Nkrumah began to link the racism experienced by U.S. blacks to the colonial relationships experienced by blacks in Africa and the Caribbean. He graduated from Lincoln University in Pennsylvania in 1939 and entered the PhD program in philosophy at the University of Pennsylvania, where he published his anti-imperialist ideas more widely in a student paper, *The African Interpreter*. Nkrumah became involved in politically organizing Africans

Our colonial past and the present day intrigues of Neo-colonialism have hammered home the conviction that Africa can no longer trust anybody but herself and her resources. . . . We in Africa must learn to band together to promote African interests or fall victims to imperialist maneuvers to recolonize us. • Kwame Nkrumah (1909–1972)

abroad through the Pan-Africanist movement. His dissertation, entitled *The Philosophy of Imperialism, with Special Reference to Africa*, was never accepted by the university; Nkrumah believed he was the victim of political censorship. In 1945 Nkrumah went to London to study law and perhaps to finish his doctoral dissertation. However, he quickly became immersed in the organization of the upcoming Fifth Pan-African Conference, which was to be held in Manchester and chaired by one of his heroes, W. E. B. Du Bois (1868–1963). The contacts Nkrumah made while working on this project formed a “who’s who” list of future nationalist and anti-imperialist leaders across Africa. His work on the conference attracted the attention of the United Gold Coast Convention (UGCC), whose leaders invited Nkrumah to return to Ghana to become the secretary of the party in 1947.

Nkrumah quickly fell out with the moderate UGCC and established the Convention People’s Party (CPP) in 1949. Demanding “self-government now,” the CPP launched strikes, boycotts, and civil disobedience based on Mohandas Gandhi’s satyagraha (nonviolent resistance) methods. Jailed in 1950 for his political activities, Nkrumah was released after winning a seat in the legislative assembly from prison in 1951. This event marked the beginning of the end of British rule in the Gold Coast, although formal independence—and the name Ghana—did not come until 1957. Nkrumah was elected prime minister of the Gold Coast in 1952 and served until 1960, when he became president of Ghana. While in power he promoted an African version of socialist development and an anti-imperialist foreign policy. He was active in the nonaligned movement, which established alliances amongst former colonies as alternatives to the bipolar Cold War visions promoted by the United States and the Soviet Union. In 1963, coinciding with the formation of the Organization of African Unity (OAU), Nkrumah published *Africa Must Unite*, outlining his argument for unification. But the OAU



At the reception following the inauguration of President Kwame Nkrumah (Accra, Ghana, 1 July 1960), Nkrumah (left), stands with W. E. B. Du Bois and Shirley Graham Du Bois. Du Bois Central, UMass Amherst Library.

rejected Nkrumah’s model, Ghana’s economic condition declined, and unrest spread. In 1964 Nkrumah forbade political opposition, establishing the CPP as the only party in the first of many African one-party states. He attributed some of Ghana’s problems to interference by the CIA, but understood that most of the nation’s problems were economic. In 1965 he published an analysis of the role of foreign investment in maintaining colonial relationships in new forms in Africa; it was called *Neo-Colonialism: The Last Stage of Imperialism*. Although astute in his analysis of Africa’s economic relations with the rest of the world, Nkrumah had lost touch with Ghanaians suffering from poor local economic conditions. Nkrumah’s political enemies multiplied and in 1966 he was overthrown in a military coup d’état. He lived in exile in Guinea until his death in 1972. Controversy will continue to surround Nkrumah’s legacy, but his understanding

of the interaction between Africa and the global economy via colonialism offers fresh insight into world history from an African perspective.

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See also Africa—Postcolonial

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Nonviolence

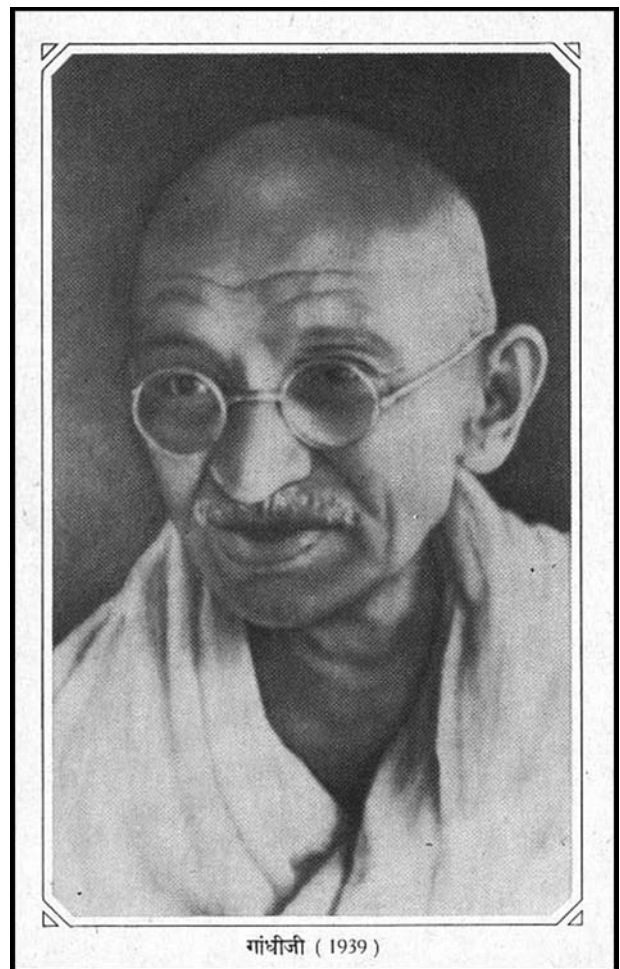
Nonviolence, the Indian nationalist leader Mohandas Gandhi said, “Is as old as the hills.” As an idea and an ideal, nonviolence is indeed old. Throughout history people have yearned for harmony, peace, and stability—conditions ultimately rooted in nonviolence—and have been inspired by the nonviolent activism of such leaders as the Dalai Lama, Corazon Aquino, Cesar Chavez, and Lech Walesa.

People have often tried nonviolent means to redress their grievances. But the idea of nonviolence as a deliberate and preferred strategy of action for political and social change acquired widespread credibility and currency only during the twentieth century. No person was more central to that credibility and currency than Mohandas Gandhi. With Gandhi nonviolence assumed a revolutionary dimension unprecedented in scope and global impact.

Gandhi and the Power of Nonviolent Action

Mohandas K. Gandhi (1869–1948) was the first person to develop a coherent worldview of nonviolent action and to propose a well-articulated strategy to realize such a worldview. Gandhi’s strategy was to struggle using a moral force. He called this force “satyagraha”—the active pursuit of truth through love and nonviolence. A *satyagrahi* (a person who undertakes satyagraha) must renounce not only violence, but also revenge and hate. Gandhi’s dedication to nonviolence is unparalleled in the history of nonviolent mass action.

Gandhi’s initial experiments in satyagraha were in the context of South Africa’s policies of racial



गंधीजी (1939)

Photo of Mohandas K. Gandhi taken in 1939.
New York Public Library.

discrimination at the dawn of the twentieth century. He subsequently used satyagraha to transform economic, political, and social realities in British colonial India. To him the purpose of satyagraha was not to force one’s adversaries into submission but rather

to transform the interrelationships of those people engaged in conflict. Gandhi's campaigns relied on methods such as fasting, *hartal* (strike), noncooperation, boycotts, marches, and civil disobedience and were aimed at the injustices of British colonialism as well as the moral failure among Indians. For instance, he undertook nonviolent campaigns to relieve the peasants of Champaran of the economic exploitation of British planters (1917–1918); to free India from British rule (1920–1921, 1930–1934, 1940–1942); and to foster unity and heal tensions between Hindus and Muslims (1947–1948) during and after partition of the subcontinent into India and Pakistan.

Gandhi's demonstrations of satyagraha—both in spirit and strategy—touched people around the world and inspired hundreds of leaders across geographical, ethnic, racial, and religious boundaries. Many people who followed Gandhi on the path of nonviolent action, even if pursuing different trajectories, have been internationally acclaimed. These people include the Indian freedom fighter Vinoba Bhave; the Dalai Lama (spiritual and political leader of Tibet); South African Archbishop Desmond Tutu; U.S. civil rights leader Martin Luther King Jr.; U.S. farm worker activist Cesar Chavez; Aung San Suu Kyi, a prodemocracy activist in Myanmar (Burma); Polish trade union activist Lech Walesa; and Czech political activist Vaclav Havel. After Gandhi, nonviolent action became a powerful trend during the twentieth century and shaped scores of social and political movements around the world.

Nonviolent Struggles in Asia

In Asia people used nonviolent action to combat oppression arising from colonialism or authoritarian regimes and to mobilize support for democratic reform and human rights. Khan Abdul Gaffar Khan (1890–1988), later known as “Badshah Khan” or “Frontier Gandhi,” was a Muslim leader of the Pathan people in the North West Frontier Provinces (NWFP) of India. He was a follower of Islam and with Gandhi and founded the world's first nonviolent army, known as the “Khudai Khidmatgars” (Servants of God), to

protest British atrocities, including plundering of Pathan villages. The army eventually grew to a force of eighty thousand Pathans dedicated to nonviolent action. Badshah Khan supported Gandhi's vision of a united India. However, partition could not be avoided, and NWFP became part of Pakistan. With the support of Khudai Khidmatgars, Badshah Khan mobilized a nonviolent movement to gain democratic rights for the Pathans in newly created Pakistan. During the next three decades he spent fifteen years in prison and seven years in exile as Pakistan continued to be ruled by the military.

Khudai Khidmatgars is significant not only because of its struggle against colonialism and authoritarianism, but also because it was an experiment that helped advance the agenda for a peace army to resolve international conflicts. Moreover, because of the dedication of such large numbers of Muslims to nonviolent action, the Khudai Khidmatgars helped to dispel the myth that nonviolence is not consistent with Islam.

Tibetan Quest for Freedom

Tenzin Gyatso (b. 1935), the fourteenth Dalai Lama, was forced into exile by the Chinese government in 1959. The Dalai Lama continues to lead his followers in nonviolent resistance against the Chinese and to serve as a beacon of nonviolence to the international community. He has declared that violence by Tibetans would be suicidal and that “nonviolence is the only way” for Tibet to gain independence. While accepting the Nobel Peace Prize in 1989, the Dalai Lama commended nonviolent resistance, including the hunger strikes of Chinese students at Tiananmen Square in Beijing. The Dalai Lama, like Gandhi, believes that the cultivation of inner peace and integrity is the ultimate weapon for world peace because happiness lies within oneself.

Restoring Democracy in the Philippines

Corazon Aquino (1933–2009) led a nonviolent resistance to restore democracy in the Philippines after President Ferdinand Marcos illegally declared himself the winner of an election in 1986. Influenced by Gandhian tactics of boycott and noncooperation, Aquino



Dr. Martin Luther King Jr. and Mathew Ahmann at the March on Washington, 28 August 1963. National Archives.

called for a nationwide boycott of banks, newspapers, beverages, and movies. She called upon people to withdraw their funds from large banks with close connections to Marcos, to shut down schools and factories, and to delay paying utility bills. Tactics of noncooperation brought government operations to a halt and slowed the economy. Housewives, priests, workers, and businesspeople alike supported the movement, refusing to accept the fraudulent outcome of the election. The force of nonviolent sanctions and boycott ultimately prevailed: Marcos was exiled to Hawaii, and Aquino became the duly elected president of the Philippines.

Quest for Democracy in Myanmar

In 1988, two years after democracy was restored in the Philippines, Aung San Suu Kyi (b. 1945) led a democratic movement in Myanmar (Burma). Consequently, in 1990 elections were held in which Suu Kyi's democratic party won. However, unwilling to give up authority, the military junta refused to abide by the election results. Inspired by Gandhian satyagraha and Buddhist compassion, Suu Kyi continued her nonviolent struggle in the face of oppression and remained committed to the cause of freedom and human rights even when put under house arrest. Her resistance often takes the form of hunger strikes and

active noncooperation with the authoritarian regime because she is convinced that "freedom from fear" is essential for bringing democracy to Myanmar. Large numbers of Myanmar citizens are influenced by the moral strength of Suu Kyi and regard her as Myanmar's destiny.

Arrested Democracy in China

After the emergence of a democratic movement in Myanmar, in China tens of thousands of college students, led by student Wu'er Kaixi (b. 1968), demanded democratic reform from the Chinese Communist government in 1989. As the movement gained momentum, three thousand students staged a hunger strike, drawing more than a million people to their side at Tiananmen Square. They demanded democratic reform and an immediate meeting with government officials. But negotiations did not continue because students felt rising anger toward the government and because student leaders felt estranged from one another. On 4 June 1989, military troops marched into the square, killing several hundred protesters in what became known as the "Tiananmen massacre." However, the movement helped secure international condemnation of the Chinese Communist regime for its violation of human rights and resulted in the imposition of economic sanctions.

Non-violence leads to the highest ethics, which is the goal of all evolution. Until we stop harming all other living beings, we are still savages. • **Thomas A. Edison (1847–1931)**

Nonviolent Movements in the Americas

In the Americas nonviolent movements became central to the restoration of rights in the United States—the world’s most powerful democracy—and to the defeat of dictators in central and Latin America.

Civil Rights Movement in the U.S. South

The seeds of Gandhian nonviolence were planted in new soil when Martin Luther King Jr. (1929–1968) led the civil rights movement in the U.S. South during the 1950s and the 1960s. Drawing upon satyagraha and his own experience as a Christian minister, King developed a unique philosophy of nonviolent resistance that was effective during the major civil rights campaigns, including the Montgomery, Alabama, bus boycott (1956), the lunch counter sit-ins (1960), the freedom rides (1961), the Albany, Georgia, campaign (1961–1962), the Birmingham, Alabama, campaign (1963), and the drive for voting rights (1964–1965). The movement championed the use of nonviolent action as a form of social protest and mobilized the African American population across the nation. King’s speech at the Lincoln Memorial in Washington, D.C., in 1963, during which he articulated his dream of racial equality, attracted the largest nonviolent demonstration after Gandhi’s mass movement in India and helped bring about the Civil Rights Act of 1964 and the Voting Rights Act of 1965.

United Farm Workers Movement

While the civil rights movement was still in its infancy, a young Mexican American farm worker, Cesar Chavez (1927–1993), was searching for a solution to his community’s economic problems. He found a sense of direction in Gandhi’s autobiography, *The Story of My Experiments with Truth*. Imbued with the spirit of satyagraha, energized by King’s civil rights campaigns, and drawing upon his Christian ethic, Chavez during the period 1960–1980 led members of the United Farm Workers (UFW) of America in nonviolent campaigns to secure their rights and protest their exploitation. Through policy changes and legislation

Chavez achieved numerous improvements, such as an increase in wages, work rule reforms, workers’ benefits, and a ban on the use of dangerous pesticides on farms. The movement relied on nationwide consumer boycotts and labor strikes, pickets, processions, and fasting. The movement not only achieved its goals, but also demonstrated the power of an underclass that previously had had no political standing.

Civic Strike in El Salvador

After people discovered the power of nonviolence, the scope of its application assumed several dimensions. In El Salvador in Central America students, doctors, and merchants in 1944 used nonviolent action to bring down the longtime military dictator, General Hernandez Martinez. Opponents of Martinez’s brutal policies organized a civic strike using nonviolent tactics. They detached Martinez from his closest friends, allies, and members of the military and forced him into exile.

Desaparecidos Movement in Argentina

In 1977 fourteen mothers organized a march in Buenos Aires, Argentina, with the motto, “We will walk until we drop.” Wearing white scarves, these women in their sixties, seventies, and eighties fearlessly walked into the Plaza de Mayo and were joined by hundreds of other people in their protests against the “disappearance” of their sons, daughters, husbands, and other relatives under the authoritarian regime of General Jorge Videla. Marching, writing letters to international agencies, advertising in newspapers, and collecting twenty-four thousand signatures on a petition, members of the *desaparecidos* (the disappeared) movement created international awareness about the violation of human rights in their country while refusing to be silenced at any cost. Their efforts eventually led to the downfall of the military government.

Chilean Resistance to a Dictator

Like protesters in El Salvador and Argentina, protesters in Chile remained committed to nonviolent noncooperation as they opposed the dictatorship of General Augusto Pinochet (1915–2006). As the protest movement grew, protesters gained courage and



refused to pretend that Pinochet had their consent to rule. On the contrary, they worked to convince people that Pinochet commanded no popular support of Chileans. Challenged by such protests in 1988, Pinochet called for plebiscite (vote), which he lost. Clinging to authority, he tried to bypass the plebiscite results. But his own supporters, in the wake of mounting popular protest, refused to support him, and he was defeated.

Poland, Czechoslovakia, and Revolutions in Europe

During the last two decades of the twentieth century nonviolent revolutions became a major trend throughout Eastern and Central Europe. The most notable took place in Poland and Czechoslovakia.

In Poland, Lech Walesa (b. 1943), inspired by Gandhi, led industrial strikes in 1980, giving rise to Solidarity, a federation of Polish trade unions. The ensuing movement during the next several years remained totally nonviolent. It not only brought an end to Communist dictatorship in Poland but also kindled the spirit of democracy throughout eastern Europe. Through his dedication to nonviolent action, Walesa shared a lesson he had learned: "We can effectively oppose violence only if we ourselves do not resort to it." Walesa became the president of Poland in 1990.

In Czechoslovakia, the writer Vaclav Havel (b. 1936) led the nonviolent resistance movement against Soviet oppression. His seminal essay, "Power of the Powerless," outlined a strategy for nonviolent revolution. He called upon people to empower themselves by daring to "live within the truth" and refusing to "live a lie." Havel was elected first as president of Czechoslovakia in 1989 and later as first president of the new Czech Republic in 1991. Soon "people power" had resulted in the fall of the Berlin Wall and the overthrow of Communist regimes all over Eastern Europe.

South Africa: A Country of Struggle

Even though Gandhi had begun his satyagraha in South Africa, inspiring nonviolent action throughout

the world, South Africa remained under the policy of apartheid (racial segregation) for most of the twentieth century. The struggle against apartheid assumed violent dimensions several times during the century. Even the political leader Nelson Mandela (b. 1918), who began the nonviolent resistance, took to violence, resulting in his serving twenty-three years in prison. Nevertheless, nonviolent sanctions, strikes, rent boycotts, street committees, and boycotts of business owned by whites ultimately disabled the government. Moreover, the formation of the United Democratic Front, which included all people who favored democratic reforms through nonviolent means, eventually forced change in South Africa. Nonviolent methods alone did not bring the change, but they were instrumental in exposing the stark nature of apartheid and the suffering of people engaged in nonviolent resistance. Such exposure undermined the credibility of the government. In 1994, after free elections, South Africa finally became a democracy; Mandela was its first president.

Outlook

Nonviolence emerged as a powerful trend during the twentieth century. Undertaken in diverse contexts, nonviolent movements varied widely in the degree of challenge they posed to the established institutions of power and authority and the extent to which they brought about meaningful social transformation. However, collectively they showed that war and violence are not the only, and certainly not the best, means of changing the institutions of power or creating a new social order. In the years to come we may see that Gandhi was right in asserting that "we are constantly being astonished at the amazing discoveries in the field of violence. But I maintain that far more undreamt-of and seemingly impossible discoveries will be made in the field of nonviolence."

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See also Civil Disobedience; Gandhi, Mohandas; Mahavira; Peace Projects

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North Atlantic Treaty Association (NATO)

After World War II, relations were strained among Allied powers, and the Soviet Union's encroachment in Europe signaled the coming Cold War. Twelve countries signed the North Atlantic Treaty in 1949 and formed the North Atlantic Treaty Organization (NATO) to restore and maintain the security of democracies on both sides of the Atlantic. As of 2010 NATO has twenty-eight member countries.

The North Atlantic Treaty Organization (NATO) was created as result of the signing of the North Atlantic Treaty on 4 April 1949 "to restore and maintain the security of the North Atlantic area" (defined as territories, islands, vessels, and aircraft of the signatories "north of the Tropic of Cancer"). Its creation has to be considered in the context of the incipient Cold War that developed due to deteriorating relations among the victors of World War II, with the former Soviet ally perceived as an increasing threat to the safety of democracies on both sides of the Atlantic. The explosion of the first Soviet atom bomb on 29 August 1949 confirmed that perception. The treaty was also drawn up to avoid repeating the mistakes that followed World War I, when the four major Western victors (France, Italy, the United Kingdom, and the United States) each went their own way without a mutual guarantee of their future safety.

Winston Churchill was probably the first statesman to fully understand the implications of the Red Army's advance into the heartland of Europe agreed upon at Yalta. The combination of a residual U.S. army and air force occupying southern Germany, nonexistent French and Italian armored and air forces, and a limited British land army on the Rhine

(Britain being traditionally strong on the seas and now in the air) could under no circumstances resist a Soviet attack beyond what Churchill had then called the Iron Curtain. The British policy of trying to persuade the United States to abandon its prewar isolationism met at first with little success. Down from over 3 million men stationed in Europe in May 1945, the United States presence was less than four hundred thousand strong—smaller than the British contingent—in the spring of 1946, when Churchill raised the alarm again in a speech on "The Sinews of Peace" given before President Truman at Fulton, Missouri. The speech got a very cold reception in the American press.

The deciding factor was probably the British inability to continue to support the Greek government's struggle against Communist guerillas in March 1947, which made it clear that only the United States had the resources in men, equipment, and money to contain Communist expansion—in Europe as in the rest of the world. The approval by Congress in that month of the "Truman Doctrine," whereby the United States undertook "to support free peoples who are resisting attempted subjugation by armed minorities, or by outside pressure," was a major reversal of policy, and was soon extended from Greece to most of western Europe. The Marshall Plan, announced in June 1947, was in the same vein, postulating that European economic recovery with American aid was the best bulwark against Soviet and other Communist expansion. These American initiatives accorded with the ideas publicly expressed by Belgian, British, and French statesmen, that only a common system of defense could guarantee the safety of western Europe. The plea became increasingly urgent with the Prague



coup of 22 February 1948, after which events moved very fast.

A treaty of mutual assistance between Belgium, France, Luxembourg, the Netherlands, and the United Kingdom was signed in Brussels on 17 March 1948, with the Canadian prime minister expressing interest in joining them on 28 April, and Senator Arthur H. Vandenberg of the United States initiating talks in the Senate that resulted in the almost unanimous adoption on 11 June of a resolution calling for “the association of the United States, by constitutional process, with such regional and other collective arrangements as are based on continuous and effective self-help and mutual aid, and as affect its national security.” The road was clear for formal negotiations and the drafting of a treaty, which took place in Washington from 6 July 1948 to 18 March 1949, when the terms were made public, with the Brussels Treaty signatories, Canada, and the United States announcing that they had also asked Denmark, Iceland, Italy, Norway, and Portugal to join the proposed alliance and that they had accepted. (Spain only joined in 1982, after the death of Francisco Franco.)

These nations constituted the twelve founding members, with Greece and Turkey joining in 1952. The controversial accession of the Federal Republic of Germany in 1955 led to the creation of the Warsaw Pact—the Soviet Bloc’s version of the Atlantic alliance—and extreme tension with Communist parties in Western Europe, which denounced the rearmament of “revanchist” (i.e., intent on starting another war avenging the defeat of 1945) crypto-Fascists, as they saw the West German governing elite. The 1960s saw another period of difficulty for NATO, over the question of the “American nuclear umbrella” and who would decide on nuclear war. Only two other members, the United Kingdom (1952) and France (1960), had a nuclear retaliation capacity—though it was in no way comparable to that of the two superpowers—and each chose a different course, with the British government opting for total integration of its nuclear deterrent (1962) while France, under General de Gaulle and his successors, decided that continued

membership in NATO did not preclude independent nuclear strikes (1966). After the period of detente in the 1970s, the installation of American cruise missiles on European soil in the 1980s led to many anti-NATO demonstrations, notably in England.

Many predicted that the fall of the Berlin Wall (9 November 1989) and the consequent removal of the Communist menace would lead to the dissolution of NATO, which had been negotiated and established against the backdrop of the Berlin blockade and airlift (24 June 1948–4 May 1949), but the organization seems to have found a new lease on life, with action in Serbia in 1994 and the Middle East in 2004, and the accession in 1999 of the Czech Republic, Hungary, and Poland, followed in 2004 by that of the Baltic Republics (Estonia, Latvia, and Lithuania) and Bulgaria, Romania, Slovakia, and Slovenia, and in 2008 by Albania and Croatia. The former anti-Communist, anti-Soviet alliance may still be said to justify its mission “to restore and maintain the security of the North Atlantic area” in the face of new threats against the twenty-eight sovereign states that are members as of 2010.

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See also Cold War; Containment; Diplomacy

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For over a thousand years, from the fourth century to the fourteenth century CE, the medieval Nubian kingdoms and their peoples dominated a wide span of Africa, stretching 1,200 kilometers from the plains of the Blue Nile (present-day Sudan) in the south to Aswan, Egypt, in the north.

The historical roots of the Nubians in Africa trace back to a set of once widespread pastoralist communities, called the Astaborans by modern-day scholars. These peoples occupied the dry steppes of the eastern Sahara in the fifth and fourth millennia BCE. The ancestral Nubian-speaking society arose out the breakup of the Astaboran group during the final drying out of the Sahara in the middle of the third millennium BCE. The earliest surviving written notices, from two thousand years later, describe the Nubians of the third and second centuries BCE as living west of the Nile along the southern Sahara fringes, where they formed several small kingdoms independent of the powerful empire of Meroë. By the first and second centuries CE, a few Nubian communities had moved east of the river, while larger numbers settled along the Nile itself between the first and fifth cataracts. In these lands the Nubians became subjects of the Meroitic Empire. Some scholars propose that the Meroites may even have encouraged the Nubians to settle down as a buffer farming population along the Nile, after the border between the Roman and Meroitic territories had been established by treaty near Philae in 23 CE.

The Rise of the Nubian Kingdoms

With the collapse of Meroitic power in the third and fourth centuries, a period of strife overtook the region

between Aswan and the Blue Nile to south, with the Nubians emerging triumphant by the later fifth and early sixth centuries. Archaeological findings identify two Nubian societies along the Nile, one between the first and third cataracts and the second extending from the third cataract south to the Blue Nile regions. In the sixth century these territories were apparently divided among three kingdoms: Nobadia, with its capital at Faras, Makuria, with its capital at Dongola, and Alodia farthest south, with its capital at Soba (south of present-day Khartoum). Interestingly, the royal succession in these kingdoms was matrilineal, the normal pattern being for a nephew to succeed his mother's brother as king.

From the 540s to the 560s, missionary activities converted the Nubian royal courts and, in time, the general Nubian populace to Christianity, although some Nubians had become Christian as early as the fifth century. Nobadia and Alodia accepted Monophysite teachings (that Christ had a single divine-human nature; modern-day Monophysite churches include the Coptic and Ethiopian Orthodox churches), but Makuria apparently initially followed the Chalcedonian creed (which stated that Christ had two distinct natures, divine and human, in one person; this is the position adopted by the Roman Catholic, Eastern Orthodox, and, later, the Protestant churches).

The traditional view of historians has been that, sometime before 707 CE, Makuria conquered and incorporated Nobadia. But a recent reevaluation of the literary and linguistic evidence by linguist-historian Marianne Bechhaus-Gerst strongly suggests that the unification of Nobadia and Makuria took place by early in the 600s. Moreover, her work shows compellingly that Nobadian culture dominated the

*It flows through old hushed Egypt and its sands, / Like some grave mighty thought
threading a dream.* • From “The Nile,” by Leigh Hunt (1784–1859)

unification of the two kingdoms. The language of Nobadia, known as Old Nubian, became the written and administrative tongue of the combined state, and Nobadia's Monophysite faith became the established religion, displacing Makuria's earlier adherence to Eastern Orthodoxy.

The social history evinces a similar history. The Nobadian stretches of the river were home to a multilayered social formation, with an administrative class, a prospering merchant class, a clerical class, servants and artisans in the towns, and a class of peasant farmers on the land. In contrast, society in the former Makuria appears to have consisted primarily of just two strata, the ruling and administrative elite and its retainers, and a far larger, probably enserfed peasant majority. The old lands of Makuria, in other words, bear all the earmarks of a conquered territory ruled by the Nobadians. Outsiders called the new combined state “Makuria,” because its main capital was the Makurian city of Dongola. But the choice of Dongola as the capital most likely reflects an early policy of concentrating state power where opposition was most likely to arise.

The Muslim conquest of Egypt (639–641 CE) and the subsequent Muslim invasions of northern Nubian areas in 642 and 652 CE mark a major transition in the history of the Nubian states. Makuria effectively turned back both invasions. The treaty of peace that ended hostilities established at first a regular annual, and then, after 835 CE, a triennial exchange of goods between Makuria and the governments of Egypt that lasted until the later thirteenth century. Muslim interpretations in much later times sought to portray the relationship as a tributary one. But the contemporary evidence shows this to have been a treaty among equals. Over the next several centuries, although there were a number of outbreaks of war between the Makurians and their northern neighbors, the Nubian states appear generally to have prospered. In the tenth century, Nubian kings in fact intervened in Upper Egypt on behalf of Coptic Christian coreligionists and ruled southern Egypt for several decades. It is clear that through much of this period the Makurian state and its merchant class continued to be prosperous

participants in trade northward to Egypt. From the ninth through the twelfth centuries its kings also undertook to control overland access eastward to the expanding commerce of the Red Sea, launching military campaigns when necessary to maintain a loose hegemony over the nomadic Beja inhabitants of the intervening areas.

Alodia, the Nubian kingdom about which we know the least, was generally reckoned the more powerful of the two states, and it was certainly the more populous and probably the wealthier of the two. Travelers to Soba, the capital city, describe a wealthy court and a thriving urban sector with important trade links to the Red Sea. Among the notable products of country in its heyday was gold, mined in the southeastern borderlands of the kingdom, near the edges of the Ethiopian highlands. While the northern kingdom ruled primarily over people of Nubian language and culture, Alodia was very much a multi-ethnic state, with a variety of other peoples besides Nubians making up its population, especially in most of the peripheral areas of the state. Alodia was too far south to be involved in conflicts with Egypt, but we suspect that its kings, like those of Makuria, must have had very important relations with the Beja, whose lands lay between them and the Red Sea entrepôts. The existence in the tenth and eleventh centuries of several small, nominally Christian principalities among the Beja surely reflects the political and material preeminence of Nubian influences.

Decline of the Nubian Kingdoms

From the twelfth century two new factors began to shift the balance of power away from the Nubian kingdoms. The factor of greatest long-term effect was the emergence and spread of a new ethnic element, Bedouin Arabs, who infiltrated southward from Egypt through the areas east of Nile. In the fourteenth and fifteenth centuries these Arabs began increasingly to displace or absorb the earlier Nubian and related Daju pastoral peoples of the desert steppes along the southern Sahara fringes, spreading a competing religion, Islam, as well a new ethnicity, language, and economy



over large areas. The key to their success may have been that they introduced the first full-fledged camel nomadism into the most marginal areas, before then precariously dependent on goat and sheep raising. Another complicating factor in the thirteenth and fourteenth centuries was the disappearance of the earlier Beja principalities of the Red Sea hills and in their place the rise of a new confederation of Beja clans, the Hadariba, at the same time as Islam increasingly began to take hold among them. Controlling the crucial trade routes between the Red Sea and the old Alodia heartland, the Hadariba appear to have siphoned away a growing portion of the wealth of the trade. By as early as the mid-1200s the Alodia kingdom, which most strongly faced these new pressures, may have begun to break up into a number of independent principalities.

The second factor in the decline of independent Nubia was political. The new Ayyubid rulers of twelfth-century Egypt, instituted policies of more active engagement with the regions to the south, and did the Mamluks after them. These pressures came to a head in the latter half of the thirteenth century and in the early fourteenth century, as aspiring Christian

Nubian rulers undermined their own political base by seeking help from Muslims in their internal struggles for political advantage. In 1324 a new Muslim kingdom of Makuria took power at Dongola. The old Nobadian regions to the north broke away and may have had Christian rulers of their own for several decades longer, as did a number of the small independent Nubian principalities to the south, left over from the breakup of Alodia.

By the beginning of the sixteenth century, however, the political and cultural worlds of the Nubians had changed irretrievably. In 1504 the region encompassing the former territories of Alodia and the southern part of Makuria was united into a new state, the Funj kingdom, with its capital at Sinnar, 200 kilometers south of the now ruined city of Soba. The new rulers opted for Islam as the religion best able to unite their populations and consolidate their trade relations with the Red Sea countries and Egypt. Nubian languages continued to be spoken, especially in the old territories of Makuria. But Arabic became the language of commerce and, in time, of administration, in the Funj kingdom, and gradually between 1500 and 1800 most of the southern Nubians began to adopt Arabic as their first language and increasingly to think of themselves as Arabs. The same trends came gradually also to affect the self-perceptions of other peoples included in the originally multiethnic Funj kingdom.

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See also Egypt; Meroë

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Nuclear Power

Debate about the use of nuclear technology (and its destructive and constructive capabilities) continues to rage more than sixty years after the United States released a uranium bomb on Hiroshima and (three days later) a plutonium bomb on Nagasaki. As contentious an issue as nuclear weapons remains, proponents of nuclear power champion its ability to produce energy more cleanly than any other resource.

When the first nuclear weapons exploded over Japan in 1945, observers all over the world knew that human life had changed in an instant. In the years since, nuclear technology has struggled to define itself as a public good when the public seemed more inclined to view it as an evil. Its proponents argue that electricity made from nuclear reactors has the capability to power the world more cleanly than any other resource can. Opponents are less sure. As the debate rages, nuclear power has become an increasingly important part of world energy.

Beginning as a Bomb

By the late 1930s World War II threatened the globe. Leaders of every nation searched for any edge that would defeat the enemy forces. Scientists in the United States and Germany experimented with nuclear reactions. In Germany leaders felt that such a technology might be a decisive force in the war effort. In reaction, U.S. scientists enlisted U.S. physicist Albert Einstein to write a letter about their research to President Franklin D. Roosevelt. In his letter Einstein stressed the technology's potential—particularly if

it were developed by the enemy. In October 1939 Roosevelt authorized government funding for atomic research.

Eventually science and the military would be linked in a way never before seen. However, first scientists needed to demonstrate the viability of an atomic reaction. Of course, today the concept of force generated by separating atomic particles is fairly well known; however, in 1940 such a concept smacked of science fiction. In 1940 the U.S. physicists Enrico Fermi and Leo Szilard received a government contract to construct a reactor at Columbia University. Other reactor experiments took place in a laboratory under the west stands of Stagg Field at the University of Chicago. In December 1942 Fermi achieved what the scientists considered the first self-sustained nuclear reaction. It was time to take the reaction out of doors, and this process would greatly increase the scope and scale of the experiment.

Under the leadership of General Leslie Groves in February 1943, the U.S. military acquired 202,343 hectares of land near Hanford, Washington. This land was one of three primary locations of Project Trinity, which was assigned portions of the duty to produce useful atomic technology. The coordinated activity of these three locations under the auspices of the U.S. military became a path-breaking illustration of the planning and strategy that would define many modern corporations. Hanford used water power to separate plutonium and produce the grade necessary for weapons use. Oak Ridge in Tennessee coordinated the production of uranium. These production facilities then fueled the heart of the undertaking, contained in Los Alamos, New Mexico, under the direction of the U.S. physicist J. Robert Oppenheimer.



In this painting Gary Sheehan envisions the 2 December 1942 scene when scientists at the University of Chicago observed the world's first nuclear reactor (CP-1) as it became self-sustaining. No photographers were present that day. Fifteen years later the artist worked for nearly four months to reconstruct the mood and physical details of this historic event. National Archives.

Oppenheimer supervised the team of nuclear theoreticians who would devise the formulas using atomic reactions within a weapon. Scientists from a variety of fields were involved in this complex theoretical mission. After theories were in place and materials delivered, the project became one of assembling and testing the technology in the form of a bomb. All of this needed to take place on the vast Los Alamos compound under complete secrecy. However, the urgency of war convinced many people that this well-orchestrated, corporate-like enterprise was the best way to save thousands of U.S. lives.

By 1944 World War II had wrought a terrible destruction on the world. The European theater of war would soon close with Germany's surrender. Although Germany's pursuit of atomic weapons technology had fueled the efforts of U.S. scientists, German surrender did not end the U.S. atomic project. The Pacific theater of war remained active, and Japan did not accept offers to surrender. Project Trinity moved forward, using the Japanese cities Hiroshima and Nagasaki as the test laboratories of initial atomic bomb explosions. The U.S. bomber Enola Gay released a uranium bomb on Hiroshima on 6 August 1945, and the U.S. bomber Bock's Car released a plutonium bomb on Nagasaki three days later. Death tolls vary between 150,000 and 300,000, and most were Japanese civilians. The atomic age, and life with the bomb, had begun.

Atomic Futures

Experiments and tests with nuclear and hydrogen bombs continued for nearly twenty years after World

War II. Many of the scientists who worked on the original experiments, however, hoped that the technology could have nonmilitary applications. Oppenheimer eventually felt that the public had changed its attitude toward scientific exploration because of the bomb. "We have made a thing," he said in a 1946 speech, "a most terrible weapon, that has altered abruptly and profoundly the nature of the world... a thing that by all the standards of the world we grew up in is an evil thing."

Many of the scientists involved believed that atomic technology requires controls unlike those of any previous innovation. Shortly after the bombings a movement began to establish a global board of scientists who would administer the technology with no political affiliation. However, wresting control of this new tool for global influence from the U.S. military proved impossible. The U.S. Atomic Energy Commission (AEC), formed in 1946, placed the U.S. military and governmental authority in control of the weapons technology and other uses to which it might be put. With the "nuclear trump card," the United States catapulted to the top of global leadership.

In the 1950s scientists turned their attention to applying nuclear reaction to peaceful purposes, notably power generation. The reaction is a fairly simple process. Similar to power generators fueled by fossil fuel, nuclear plants use the heat of thermal energy to turn turbines that generate electricity. The thermal energy comes from nuclear fission, which is made when a neutron emitted by a uranium nucleus strikes another uranium nucleus, which emits more neutrons and heat as it breaks apart. If the new neutrons strike



other nuclei, chain reactions take place. These chain reactions are the source of nuclear energy, which then heats water to power the turbines.

Soon the AEC seized this sensibility and began plans for “domesticating the atom.” It was quite a leap, though, to make the U.S. public comfortable with the most destructive technology ever known. The AEC and other organizations sponsored a barrage of popular articles concerning a future in which roads were created through the use of atomic bombs, and radiation was employed to cure cancer.

In the media the atomic future included images of atomic-powered agriculture and automobiles. There were optimistic projections of vast amounts of energy being harnessed, without relying on limited natural resources like coal or oil. For many Americans this new technology meant control of everyday life. For the administration of U.S. president Dwight Eisenhower the technology meant expansion of U.S. economic and commercial capabilities.

As the Cold War took shape around nuclear weapons, the Eisenhower administration looked for ways to define a domestic role for nuclear power even as Soviet missiles threatened each American. Project Plowshares grew out of the administration’s effort to turn the destructive weapon into a domestic power producer. The list of possible applications was awesome: laser-cut highways passing through mountains; nuclear-powered greenhouses built by federal funds in the Midwest to enhance crop production; and irradiated soils to simplify weed and pest management. Although domestic power production, with massive federal subsidies, would be the long-term product of government effort, the atom could never fully escape its military capabilities. This was most clear when nuclear power plants experienced accidents.

Accidents Fuel Public Doubt

A number of nuclear power plant accidents occurred before the late 1970s, but they went largely unnoticed by the U.S. public. Nuclear power became increasingly popular, even though critics continued to argue issues of safety. In 1979 the United States experienced

its first nuclear accident in a residential area outside of Harrisburg, Pennsylvania. The accident at Three Mile Island (TMI) nuclear power plant entirely altered the landscape of American power generation. Although involving only a relatively minor release of radioactive gas, this accident demonstrated the public’s lack of knowledge. Panic ripped through the state, and Harrisburg was partially evacuated.

Of course, the international community took notice of the TMI accident; however, it clearly did not present a grave threat to the world. The world’s other superpower had even greater difficulty with its atomic industry, which was plagued by accidents throughout this era. None, however, compared to the Chernobyl meltdown that occurred in Ukraine in 1986. During a test the fuel elements ruptured and resulted in an explosive force of steam that lifted off the cover plate of the reactor, releasing fission products into the atmosphere. A second explosion released burning fuel from the core and created a massive explosion that burned for nine days. It is estimated that the accident released thirty to forty times the radioactivity of the atomic bombs dropped on Hiroshima and Nagasaki. Hundreds of people died in the months after the accident, and hundreds of thousands of Ukrainians and Russians had to abandon entire cities.

The implications of nuclear weapons and nuclear power had already been of great interest to environmental organizations before Chernobyl. After Chernobyl international environmental organizations such as Greenpeace dubbed nuclear power a transborder environmental disaster waiting to happen. Interestingly, even within the environmental movement, nuclear power maintained significant support due to its cleanness. Whereas almost every other method for producing large amounts of electricity creates smoke or other pollution, nuclear power creates only water vapor. Yet, at least in the public’s mind, there remained the possibility of atomic explosions.

Growth in the International Market

Although accidents decreased the U.S. domestic interest in nuclear power generation, the international

All the waste in a year from a nuclear power plant can be stored under a desk.

• Ronald Reagan (1911–2004)

community refused to be so quick to judge the technology. Since the early 1990s nuclear power has become one of the fastest-growing sources of electricity in the world. Nations that depend on nuclear power for at least one-quarter of their electricity include Belgium, Bulgaria, Hungary, Japan, Lithuania, Slovakia, South Korea, Sweden, Switzerland, Slovenia, and Ukraine.

According to the *Bulletin of the Atomic Scientists*, nine countries possessed nuclear weapons capability (United States, China, France, Russia, and Britain, India, Pakistan, Israel, Korea). Thirty nations have some 440 commercial nuclear power reactors. Currently fewer nuclear power plants are being built than were built during the 1970s and 1980s, but the newer plants are much more efficient and capable of producing significantly more power. Additionally, nuclear power is being used for needs other than public electricity. In addition to commercial nuclear power plants, there are more than 280 research reactors operating in fifty-six countries, with more under construction. These reactors have many uses, including research and training and the production of medical and industrial isotopes. Reactors are also used for marine propulsion, particularly in submarines. Over 150 ships of many varieties, including submarines, are propelled by more than two hundred nuclear reactors.

Finally, nuclear power has also become a volatile part of international politics. Nations such as North Korea and Iran have used their pursuit of “peaceful” nuclear technology to raise the ire of many western nations in hopes of forcing them into negotiations. Particularly in the case of Iran, many nations are suspicious of its claims of “peaceful” uses. Fearing their own security, Israel and other nations have demanded that Iran not be allowed to develop new nuclear technology of any sort. These fears seem to have made it more attractive for rogue nations to increase the threat level.

Regardless of the use to which it is put, nuclear energy continues to be plagued by its most nagging side effect: even if the reactor works perfectly for its service lifetime, the nuclear process generates dangerous waste. In fact, reactor wastes from spent fuel rods are believed to remain toxic for fifty thousand

years. At present each nuclear nation makes its own arrangements for the waste. U.S. nuclear utilities now store radioactive waste at more than seventy locations while they await the fate of the effort to construct and open a nuclear waste repository inside Nevada’s Yucca Mountain.

Internationally, the situation is not much clearer. Opponents in Germany have obstructed nuclear waste convoys, and shipments of plutonium-bearing waste to Japan for reprocessing are often placed under dispute. Some observers have voiced concern that less-developed nations will offer themselves as waste dumps for the more-developed nations. The income from such an arrangement may be too much to turn down for many nations.

Rising energy prices of all sorts, however, brought the nuclear industry robust interest in the twenty-first century. In particular, new attention has been focused on reprocessing used nuclear materials. In this fashion, the very idea of “nuclear waste” has been redefined. Proponents argue that there is no such thing as waste if the spent rods can be reprocessed in order to fuel other types of plants. These efforts are particularly advanced in France, the global leader in nuclear power in 2009.

In the energy industry many observers continue to believe that nuclear power remains the best hope to power the future. The issues of safety and waste removal need to be dealt with. However, in nations with scarce supplies of energy resources, nuclear power—even with its related concerns—remains the most affordable alternative.

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See also Energy; Waste Management

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Oceania, Ancient

Human migrations from Southeast Asia to the South Pacific Islands of Oceania began as early as 40,000 BCE. A concentrated wave of migration about 2000 BCE produced profound environmental changes as humans introduced domesticated animals, depleted species of native fauna, and practiced agriculture resulting in deforestation and erosion. Although subsequent settlements achieved ecological balance, few who saw the region as a paradise in the 1600s realized just how fragile that balance was.

Oceania is the large region of islands and archipelagos stretching across the South Pacific Ocean. The region encompasses more than 88 million square kilometers, most of which is ocean. The total landmass in the region is 1.6 million square kilometers, made up of more than twenty-five thousand islands. Oceania is divided into three general areas: Melanesia, which includes New Guinea, the Solomon Islands, New Caledonia, Fiji, and other islands making up a belt roughly to the northeast of Australia; Micronesia, a collection of archipelagos including the Marshall Islands, the Palau Islands, Guam, and other smaller atolls (coral islands consisting of a reef surrounding a lagoon) lying to the east of the Philippines; and Polynesia, the scattered island groups including the Samoan Islands, the Cook Islands, and others lying in a large triangle running from New Zealand to Hawaii to Easter Island.

Although the history of human migration across ancient Oceania is still debated, most archeological and linguistic evidence suggests that humans colonized the region in a succession of waves emanating from Southeast Asia and moving eastward. The

earliest known human settlements in New Guinea date from around 40,000 to 35,000 BCE, approximately the same time that humans first arrived in Australia, whereas parts of the Solomon Islands lying closest to New Guinea appear to have been colonized around 26,000 BCE. By 7000 to 5000 BCE much of western Melanesia was occupied by hunter-gatherer groups, although several sites in New Guinea show evidence of early patterns of crop cultivation, including irrigation systems for growing taro (a plant grown for its edible rootstock). But the rest of Oceania remained uninhabited.

Between 2000 and 1000 BCE another wave of migration spread across Melanesia from Southeast Asia, giving rise both to new language forms and new patterns of human settlement that had a significantly greater environmental impact than the first hunter-gatherers who occupied the region. The Lapita culture, named for the distinctive pottery found at archeological sites in New Caledonia, was marked by larger settlements practicing a combination of marine and shell fishing along with an agricultural complex based on cultivation of yam, taro, and banana crops and the domestication of pigs, dogs, and chickens.

Rapid Colonization

The most important innovation of the Lapita culture, however, was advanced maritime technologies that enabled the rapid colonization of eastern Melanesia and from there, for the first time, migration northward into Micronesia and eastward into Polynesia. Larger outrigger canoes of 15 to 20 meters, coupled with improved sail technologies and refined navigation techniques, permitted colonists to cross the large



Ornamental wood carvings used on canoes, left, from New Zealand, and top and bottom right, from New Guinea. From *The Grammar of Ornament* by Owen Jones. London: Bernard Quaritch, 1910. New York Public Library.

expanses of ocean, bringing with them the crops and animals needed to establish settlements. The first known settlements in Fiji, on the eastern edge of Melanesia, date from 1500 BCE, and by 1000 BCE voyagers had crossed the several hundred kilometers of open ocean separating Fiji from the Samoan and Tonga Islands in western Polynesia. At around the same time colonists pushed northward into Micronesia, settling the Caroline and Marshall islands. Over the next fifteen hundred years the rest of Polynesia became inhabited, with humans arriving last in Hawaii around 650 CE and in New Zealand between 1000 and 1200 CE. But internal settlement and migration continued after this period, the most notable being contacts between Polynesians and South America, which resulted in the introduction of sweet potatoes as a basic crop throughout eastern Polynesia.

The establishment of human settlements on the previously isolated islands of Oceania produced profound environmental changes. None of the islands had any mammal species, with the exception of bats, before humans introduced domesticated animals. The arrival of humans was marked by sharp depletions in the numbers of native fauna through overhunting and

competition from domesticated animals, resulting in the extinction of many species. Likewise, the pioneering agriculture practiced by the colonists included extensive use of slash-and-burn techniques, which resulted in significant amounts of deforestation and corresponding erosion problems on many islands. This was especially true in parts of eastern and southern Polynesia, where a cooler and drier climate proved ill suited to the types of tropical agriculture that the arriving colonists attempted to introduce. In some extreme cases, such as Easter Island and on some of the Marquesas islands in eastern Polynesia, the arrival of humans appears to have precipitated an environmental crisis resulting in a large-scale collapse of the ecosystem and a sharp population decline or abandonment of the settlement within a century or two after colonization. Also, a continuing pressure on natural resources was one of the major forces driving the rapid migration across Oceania as colonists sought to find new islands to exploit.

Sustenance Systems

By 1500, on the eve of European arrival in the region, most of the human settlements in Oceania had developed more or less stable sustenance systems that varied according to their local climate and ecological conditions. Fishing was the most important element, and the inhabitants of Oceania practiced a wide variety of techniques, including the use of elaborate nets and traps as well as lures and harpoons. The major agricultural staples were coconuts, breadfruit, yams, and taro roots, with domesticated pigs, dogs, and chickens providing additional protein. Although many islanders continued to practice swidden (slash-and-burn) agriculture in which fields were cleared, burned, used for two to three years, and then allowed to lie fallow for up to two decades, some Oceania societies developed more extensive farming systems using terraced plots and elaborate irrigation systems. Also, the island inhabitants developed complex social structures designed to keep the population from rising beyond what could be sustained by local environmental limits.



For the European voyagers, who began visiting the South Pacific in larger numbers between 1600 and 1800, many of the Oceania islands assumed mythical status as tropical paradises. From a European perspective the relatively benign climate and apparent richness of natural resources disguised the fact that most Oceania societies rested on a fragile ecological balance that seldom lasted long after the initial contact with outsiders.

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See also Biological Exchanges; Columbian Exchange; Pacific, Settlement of

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Oceans and Seas

Oceans and seas comprise 98 percent of the biosphere and cover about 70 percent of the Earth's surface. Water is circulated between the oceans and seas, the atmosphere, and the land by evaporation and precipitation, thus transporting chemicals and heat, determining the Earth's climate, and fertilizing and eroding the land. Humans depend on ocean resources, harvesting marine life, for instance, and drilling the ocean beds for oil.

The oceans of the Earth consist of four confluent (flowing together) bodies of saltwater that are contained in enormous basins on the Earth's surface. Seas are lesser bodies of saltwater. Oceans and seas cover 361 million square kilometers (70.8 percent of the Earth's surface) and 98 percent of the volume of the biosphere (the part of the world in which life can exist). Saltwater comprises about 97.2 percent of the water on the planet, the remainder being freshwater. By evaporation and precipitation water is circulated between the oceans and seas, the atmosphere, and the land. The hydrological cycle (the sequence of conditions through which water passes from vapor in the atmosphere through precipitation upon land or water surfaces and ultimately back into the atmosphere as a result of evaporation and transpiration) transports and stores chemicals and heat, determines the Earth's climate, and fertilizes and erodes the land. The average salinity of the oceans and seas is 3.5 percent, deviations being determined by evaporation and inflow of freshwater. Ocean surface temperatures around the equator may be 30°C or more, decreasing toward the poles, where seawater freezes at -2°C. Below-surface

temperature is fairly constant, decreasing to around 0°C in the deep ocean.

The largest ocean is the Pacific, which has a surface area of 166 million square kilometers, almost the size of the three other oceans together: the Atlantic (84 million square kilometers), the Indian (73 million square kilometers), and the Arctic (12 million square kilometers). The Antarctic, or Southern, Ocean is sometimes counted as the fifth ocean, consisting of the waters of the southern parts of the Pacific, Indian, and Atlantic. Sections of the oceans may be described as enclosed and marginal seas. Enclosed seas—such as the Mediterranean Sea, Hudson Bay, the White Sea, the Baltic, the Red Sea, and the Mexican Gulf—cut into continental landmasses. Marginal seas—such as the Caribbean and Bering Seas, the Sea of Okhotsk, the East China Sea, the Sea of Japan, and the North Sea—are separated from the oceans by archipelagos.

The depth of the oceans increases to about 200 meters on the continental shelves, increasing further to 3,000–4,000 meters on the ocean basin floor and to 6,000–11,000 meters in the deepest areas. The ocean bed is covered by sediments of dead marine organisms, eroded soil from the continents, and red clay.

The waters of the oceans are circulated by changing winds, air pressures, and tides. The gulf current brings warm water to the North Atlantic and thus makes it possible to sustain human life at more northerly degrees in Europe than anywhere else on the globe. The upwelling areas on the margins of the Pacific and Atlantic oceans off the coasts of Chile and Peru, California, and Namibia in Africa bring cold, nutrient-rich waters to the surface of the sea,

and the combination of sunlight and nutrient richness makes the relatively narrow continental shelves rich in marine life. But El Niño (an irregularly occurring flow of unusually warm surface water along the western coast of South America) may reverse ocean currents in the Pacific and cause abnormal climate effects both on land and sea.

Life began in the oceans, but science has incomplete knowledge of marine life-forms. About fifteen thousand species of marine fish are known, but it is estimated that five thousand species remain to be identified. The estimate of 200,000 ocean floor species of the North Atlantic alone may be low by a factor of three or four. Whereas the open oceans are blue deserts due to the lack of nutrients, the continental shelves are home to abundant marine life, and tropical coral reefs are habitats of large biodiversity (biological diversity as indicated by numbers of species of animals and plants).

Marine Resources

Humans utilize the oceans for transportation and trade, benefit from harvesting marine life, and drill the ocean bottoms for oil, thus creating the potential for exploitation and pollution.

Oceanic transportation is the cheapest and most important way to move goods between the continents, but it imposes severe environmental stress on marine habitats and biodiversity. Prior to the fifteenth century the oceans presented a formidable obstacle to contact between continents. Foraging (Paleolithic) era (2 million–10,000 BCE) migrants did spread from Africa and Eurasia to Australia and the Americas by crossing the straits of Torres and Bering; the Polynesian migrations into the Pacific islands around 2000 BCE and the Viking migration across the North Atlantic also testify to early maritime skills. However, the first contact between a major civilization and another continent was aborted in 1435 when the Chinese emperor decided to discontinue the explorations of the Chinese fleet to Africa across the Indian Ocean. The subsequent voyages of Columbus across the Atlantic from Spain to the Caribbean Sea, however, opened the way

for a sustained exchange—causing great environmental impact—with the New World. With the development of the three-masted sailing vessel and nautical instruments, global seafaring allowed an exchange of terrestrial plants and animals that had substantial consequences for the recipient countries. Marine habitat changes followed as ports and bunker areas for loading coal were extended along shorelines and estuaries and as mud-dredgers changed tidal currents and coastal erosion. In the twentieth century tanker ships impacted marine ecosystems substantially when they discharged ballast water transported over thousands of kilometers. Ballast water is one of the most serious threats to marine biodiversity and has caused irreparable changes to ecosystems. Introduced species, which have no natural enemies in new environments, can multiply and eradicate original life-forms.

Humans have harvested inshore marine environments since earliest historical times. Whales, seals, fish, crustaceans, and algae have been fished for human consumption, and seaweeds, salt, sponges, corals, and pearls have been brought to consumers for diverse uses. Today important medicines, from anticoagulants to muscle relaxants, are derived from marine snails.

Beginning in the sixteenth century, thanks to the shipping revolution, whaling and fishing operations were taken to distant islands and continents. As marine life in these distant waters was depleted, the operations became oceanic, first in the Northern Hemisphere and later in the Southern Hemisphere. These operations extinguished some life-forms, such as the Stellar's sea cow in the Bering Sea, the gray whale in the European and later the American Atlantic, and the Caribbean monk seal. The early human impacts on pristine ecosystems are believed to have been important not only to a few signal species but also to the whole ecosystem, which may have experienced regime shifts when top predators that controlled ecosystem dynamics were fished out. Today most of the commercially important fish species are exploited to the full or beyond sustainable levels. Because of such heavy fishing pressure, many of the most valuable fish stocks of the world are in decline,



A biologist from the Florida Keys National Marine Sanctuary photographs the damage done to a coral reef from a boat grounded on the reef. National Oceanic and Atmospheric Administration.

and some have become locally extinct. The most dramatic case is the Newfoundland cod fishery, which collapsed in 1991, causing not only enormous and possibly irreparable harm to the ecosystem but also the disappearance of the very means of existence for many people in Atlantic Canada.

Commercial exploitation of minerals in the ocean bed is only beginning and is expected to increase dramatically in the twenty-first century. The ocean bed contains energy in the form of oil and natural gas, and minerals such as sodium chloride (salt), manganese, titanium, phosphate, and gold are found in the oceans. People also have begun to utilize tidal power from the oceans. The development of industrialized societies has increased the discharge of sewage and other waste into the oceans and also has created the phenomenon of oil spills.

About two-thirds of the world's population live within 60 kilometers of a coast, and almost one-half of the world's cities with more than 1 million people are located near estuaries. This settlement pattern is a result of people choosing the oceans instead of agriculture as a source of food and employment; the oceans also have provided access to communication, transportation, and trade. However, people have had a prejudice against coastal settlement in some historical periods. The most marked instance of this prejudice occurred in many Neolithic (8000–5500 BCE) cultures with the introduction of agriculture, which increased the incentive to settle virgin inland territories. The nineteenth-century frontier movement of North America was also decidedly terrestrial, although migrants had to cross the Atlantic to pursue opportunities. In contrast, other colonizing experiences, such as the ancient Phoenician and Greek city-states, were decidedly maritime.

The French historian Fernand Braudel (1949) was the first to attempt a history of an enclosed sea—in this case, the Mediterranean—as a natural environment and a highroad for communication and cultural exchange. He argued that the common environmental conditions prevailing on the coasts of the Mediterranean provided the basis for a common culture. He showed how life in the mountains, plains, and coastal lowlands related with the sea across European and Arabic civilizations, and he stressed that the seaways were a key to the growth of the European economy. Braudel perceived of Europe as three regions: the Mediterranean, the Continent, and the Second Mediterranean of Europe; that is, the North Sea and the Baltic, or collectively the Northern Seas. Many other historians have since recognized that if the Mediterranean shores had a common culture, the same would hold true for other seas, with differences due to natural circumstances (such as enclosed or marginal character of the sea and accessibility of its shores) and historical experiences. The problem with the arguments of such historians is that they tend to list those aspects that the shores of a sea have in common but do not compare contacts inside and outside of the regional system.

It isn't the oceans which cut us off from the world—it's the American way of looking at things. • **Henry Miller (1891–1980)**

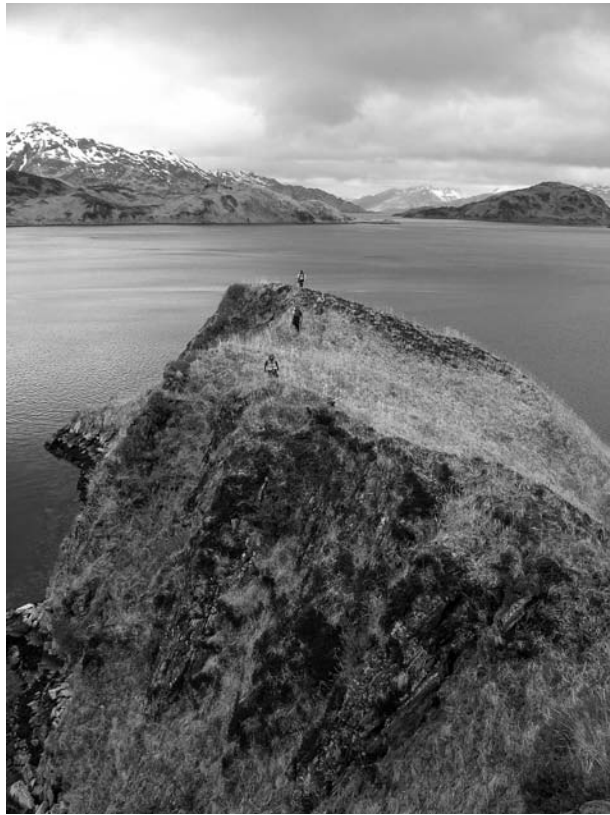
Other approaches to the question of the role of oceans in human history have stressed the problems of overcoming distance. This is the dominant theme, of course, in the study of the Age of Exploration (c. 1491–1750), but it also resonates in the study of the more recent history of U.S. and European relations and most forcefully in the study of the history of Australia, which until the age of global airlines lived under the “tyranny of distance”—the fact that any visit abroad required weeks if not months of sea travel.

In the age before modern transport systems, sea transport was generally cheaper than land transport but not faster. Ship movements had many natural and unpredictable constraints. Delays of weeks occurred frequently because of unfavorable winds, and although some skippers would travel day and night because of a good knowledge of local waters, most dared sail only in daytime. Calculations of actual distances traveled by ships indicate that in spite of good winds sometimes bringing a ship's speed to 10 knots per hour (18 kilometers per hour), the distance covered during full trips, including the time spent waiting at anchor, seldom averaged more than 1 or 2 nautical miles (1.85–3.7 kilometers) per hour spent at sea. The distance covered per day thus works out to 45–90 kilometers. This calculation corresponds with actual travel distances on land. Whereas one cartload normally contained only twelve to eighteen barrels of grain or fish, even a small shipload might contain many times more. A typical ship of two hundred tonnes required a maximum crew of only ten men. The person-to-ton ratio would thus be 1:10 for the ship as against 1:1 for the cart, whereas distance traveled per day would be the same. Thus coastal urban markets received supplies by sea at a rate competitive with supplies from inland. A recent study of medieval England showed a ratio 1:4:8 for transport costs by sea, river, and road. Because the efficiency of land transport did not develop to the same pace as productivity increased in other trades such as agriculture, land transport costs grew relative to other costs until the eighteenth century.

The sea did not necessarily facilitate cultural impulses, such as aesthetic, dietary, or religious preferences, in the same way. The transportation of information and cultural impulses was not related to bulk freight rates but rather relied as much on individual travel patterns, most often by foot or horseback. Although enclosed and marginal seas may often have contained a well-developed trade and transport infrastructure, cultural relations do not necessarily mirror this and indeed may show quite different patterns of communication. Nevertheless, during the age of sail, roughly from 1500 to 1850, maritime regions played a decisive role in many parts of the world. Coastal stretches of enclosed or marginal seas had an unusual concentration of maritime capital and labor that made possible the development of a distinctively maritime culture. This concentration was often based on the availability of timber for shipbuilding, although lack of forests did not preclude some regions rising to maritime preeminence.

The industrial transport revolution of the nineteenth century greatly enhanced long-distance and even global travel, but it lessened the importance of regional transport economics. Improved roads, railways, and steam shipping created a world market for many more goods than before, and regional markets gave way to the global market. Most small maritime communities were not able to raise the capital needed to participate in the global transport market, and as a result the coastal landscape changed from a string of human settlements to a few port towns with a concentration of maritime capital. In the industrial age, therefore, the age of regional seascapes came to an end.

Port towns are the nodes of the maritime transport system. The first port towns were well developed in the Mediterranean three thousand years ago. A port town may have its own home fleet, the crucial characteristic being that the town is a hub of inland and seaborne trade. Port towns tend therefore to utilize natural assets such as ease of multimodal transportation (land, river, and sea transport), access to a productive hinterland and a market, and strategic advantages such as control of waterways. Port towns provide access to the economic arteries of a country



Sea levels have been rising since 1900 with the rate of change accelerating in the last half century. Researchers from NOAA's National Geodetic Survey conduct a shoreline survey. National Oceanic and Atmospheric Administration.

and therefore have historically been keenly regulated both for fiscal and military purposes. Occasionally they have gained full or partial sovereignty, as did the Italian city-states and the towns of the Hanseatic League, or have dominated a territorial state, such as the Netherlands in the sixteenth to eighteenth centuries, but most often they have been controlled by larger territorial powers. With the increased demands of shipping in the nineteenth century came the need for a larger workforce, and port towns became densely populated with laborers. The towns themselves sprawled along wharves and quays to become unwieldy entities, congested and heavily polluted. As a result of the spread of coal-fired steamer traffic in the second half of the nineteenth century, however, adhering to strict time schedules became possible and of utmost importance. Thus new infrastructures of bunker ports and dedicated quays sprang up along the coasts to facilitate the steamers. Wind-powered ships continued to defeat the steam ships as long as a line of bunker ports did not

dot the margins of the seas, but eventually the steam ships took possession of more and more sea routes so that by the early twentieth century the slow windjammers to Australia were the last to give in.

By that time diesel engines were being introduced, and by the 1950s coal was all but given up. At that point, passenger ships lost their edge in the oceanic transportation of people to the airlines, but a new era for the shipping of goods more than compensated for the loss to ship owners. In the first half of the twentieth century ships were designed to provide optimum cargo facilities and quicker turn-around times in ports. The Argentine meat industry and the Canary Island banana trade demanded refrigerated ships, and the oil industry gave rise to tanker ships. By the 1960s a design revolution took place, introducing the all-purpose shipping container, a metal box that could be refrigerated or otherwise modified and that conformed to standard measures and therefore allowed for convenient storage on board. The container ship became the vehicle for the globalization of trade, which severed the links between origin of resource, modification and packaging, and consumption.

To achieve optimum handling the once-prolific system of ocean ports has been minimized to a system of a few world ports that are the nodes of a few big container lines. Servicing the system are a number of feeder lines from lesser ports and a prolific number of trucking services that ensure that the individual container is brought to its final destination.

The environmental impact of the globalized container system is enormous. Although the system undoubtedly brings rationalization of the economic system, it is dependent on the availability of abundant and cheap energy, which will marginalize, for example, the costs of moving east Asian tiger prawns to Morocco to be peeled by cheap labor before they are moved to Germany to be packaged before they are eventually consumed in, for example, a restaurant in Paris.

Sea Law and Sea Powers

The oceans and seas have long been governed by law. Hugo Grotius, a Dutch lawyer, historian, and



theologian laid down the first principles for an international law of the seas his 1609 treatise *Mare Liberum* (The Free Sea). He observed that the sea is an inexhaustible, common property and that all should have open access to it. These principles were adhered to in theory by all major European naval states and eventually were introduced as the guiding principles for access to all oceans and seas. Most states claimed dominion over territorial or coastal waters, but commercial ships were allowed free passage. The most important exception to this principle was the Danish Sound, providing access between the North Sea and the Baltic. The Danish government in 1857 lifted its toll on the sound and the right of inspection only after international treaty and compensation. The shooting range of a cannon originally defined the width of territorial waters, but during the nineteenth century a 3-nautical-mile (5.5 kilometers) limit was increasingly accepted and laid down in international treaties. After World War II, U.S. President Harry Truman claimed wider rights to economic interests on the North American continental shelf against Japan, and Chile and Peru claimed a 200-nautical-mile (370 kilometers) exclusive fishing zone off the coasts against U.S. tuna fishers. Iceland followed soon after with claims to exclude British fishers from Icelandic waters. Oil and fisheries were the main economic motives for these claims. In 1958 the United Nations called the first International Conference on the Law of the Sea to establish a new consensus on sea law. The conference extended territorial limits to 12 nautical miles (22 kilometers) but failed to settle the issue. A second conference in 1960 made little progress. During the 1960s and 1970s positions changed dramatically. It became much more evident that the supplies of fish stocks were limited and that depletion was becoming more prevalent. Attempts to manage resources through international bodies were proving to be largely ineffective. Many coastal states, both developed and developing, felt increasingly threatened by the large fleets of distant-water states off their coasts. Simultaneously, the issue of control over the mineral resources in the deep ocean beds raised the demands of developing states for a more equitable distribution

of ocean wealth. The third international conference, which lasted from 1974 to 1982, resulted in a convention that is internationally recognized. The main innovation was the declaration of the right of coastal states to a 200-nautical mile “extended economic zone” (EEZ), which may be claimed by a coastal state for all mineral and living resources. The convention was signed by 157 states, while the United States, United Kingdom, and Germany took exception to the stipulations on seabed mineral resources. The EEZs represent the largest redistribution of territorial jurisdiction since nineteenth century colonialism.

The choice of 200 nautical miles as a limit for jurisdiction has no relevance to ecosystems or indeed to the distribution of mineral wealth but is simply a result of international negotiations. Whatever the imperfections of the convention, it has, however, provided coastal states with the authority to manage the resources within their zone. The short history of EEZs shows that they may be implemented to promote conservation interests in addition to the national economic interests for which they were designed.

Management and Protection

Whereas the law of the sea provides only a broad framework for international regulation of matters relating to oceans and seas, nation-states have developed intricate policies and institutions that impact the oceans. Two policies for the marine environment have been developed in recent years: integrated coastal zone management (ICZM) and marine protected areas (MPA). The specific policies that deal with issues such as watersheds and coastal development to seabed utilization by their very nature fail to take issue with the complete set of challenges that confronts people when they seek to manage, preserve, and develop the marine environment. This is the justification for the development of integrated coastal zone management. ICZM has developed as a cross-cutting policy for coastal and inshore management concerns since the 1980s, but it is implemented only to a limited degree in most countries. Marine protected areas have been designated throughout the world as areas where

human access is restricted in order to conserve marine habitats. Coral reefs, fragile spawning areas, and hot spots of marine biodiversity have often been selected, but by 2000 only about 1 percent of the oceans were protected even by limited restrictions. The oceans and seas are still subject to open access and unrestricted human practices in most regions of the world, and the underwater world remains the last frontier, still to a large degree unexplored by humans.

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See also Climate Change; Global Commons; History, Maritime; Migrations—Overview; Natural Gas; Oil; Oil Spills

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Oil

Oil, or black gold, is one of the most contentious commodities in recent history. As the most important source of energy in the twentieth century, oil has been a key ingredient in transforming agriculture and transport, and with them, social and economic life. But oil has also been a source of domestic and international conflict, and is closely implicated in environmental degradation.

No commodity or industry had a greater impact on world history in the twentieth century than petroleum, or oil, a complex mixture of hydrocarbons that had their ultimate origin in plants and animals that lived and died hundreds of millions of years ago. Oil production and use has transformed social and economic life and has had a deep and lasting impact on the environment. Control of oil has helped determine the outcome of major wars and has been a central element in U.S. global power.

History of Oil Use

Oil from natural seepages was used as early as 3000 BCE in Mesopotamia and China for heating, lighting, medicine, ship caulking, and road building. Later, oil was a key ingredient in Greek fire, a flammable mixture of petroleum and lime used in warfare. Widespread oil use did not occur until the mid-nineteenth century, however, when the development of techniques for refining crude petroleum created new uses for oil. The development of hard-rock drilling for oil also greatly expanded oil production. Kerosene refined from crude petroleum quickly became a major source of illumination, and

petroleum-based lubricants replaced vegetable oils, whale oil, and animal tallow.

Used mainly for illumination in the nineteenth century, oil became an integral part of modern life in the twentieth century. Just as electricity began to overtake kerosene as the main source of illumination, at least in urban areas, the development of the oil-powered internal combustion engine in the late nineteenth century and its almost universal adoption in the transportation sector over the course of the twentieth century created vast new markets for oil. Aided by improvements in refining techniques, oil became the fuel of choice for the automobiles, trucks, ships, and airplanes that revolutionized transportation and transformed the physical, economic, and social landscapes of societies all over the world. Oil-powered machinery and petrochemical-based pesticides, herbicides, and fertilizers also sparked unprecedented increases in agricultural production. In particular, the development in 1909 of a method to synthesize ammonia, first from coal and later from natural gas, allowed massive expansion in the use of inorganic fertilizers resulting in dramatic increases in food production, and with it, water pollution. By the end of the twentieth century, oil accounted for around forty percent of global energy consumption (including over ninety percent of transportation energy use) and was the most important commodity in international trade both in terms of mass and value.

Environmental Impact of Oil Use

Drilling for oil, transporting and refining oil, and burning oil has had a significant impact on the environment. Fossil fuel combustion, of which oil is a

The use of solar energy has not been opened up because the oil industry does not own the sun. • **Ralph Nader (b. 1934)**

major component, puts far more carbon dioxide into the atmosphere than the world's oceans, soils, and biomass can absorb, and probably has affected the Earth's climate. In December 1997, the developed countries agreed, in the Kyoto Accords on Climate Control, to reduce their emissions of global warming gases. (Despite the aims of the Kyoto Protocol, which expires in 2012, global emissions of greenhouse gases have continued to increase. In December 2009, participants at the United Nations Climate Change Conference in Copenhagen, Denmark, failed to reach a binding agreement about replacing the Kyoto Protocol, but as of April negotiators were seeking to extend and complement the existing treaty at the 2010 conference in Cancun.) Oil production and oil-derived products (including products of the petrochemical industry) have also contributed significantly to air, water, and soil pollution, both directly and indirectly. Oil-powered technologies have allowed vast increases in mining and logging activities, for example, with major environmental consequences.

Oil and Military Power

Oil became essential to military power in the early twentieth century, when the navies of the great powers, led by Great Britain and the United States, began to switch from coal to oil as fuel. Although the navies of the great powers played a relatively minor role in World War I, oil and the internal combustion engine heralded a revolution in mobility on the land, the sea, and in the air.

Oil was crucial to the origins and outcome of World War II. Hitler's desire to gain control of oil for his heavily mechanized war machine was an important factor behind his decision to invade the Soviet Union. Japan was dependent on the United States for around 80 percent of its oil needs, and the U.S. decision in the summer of 1941 to cut off oil exports to Japan presented Japanese leaders with the option of going to war to seize oil supplies in the Netherlands East Indies or bowing to U.S. pressure. All the main weapons systems of World War II were oil-powered—surface warships (including aircraft

carriers), submarines, airplanes (including long-range bombers), tanks, and a large portion of sea and land transport. Oil was also used in the manufacture of munitions and synthetic rubber. Access to ample supplies of oil was a significant source of allied strength, while German and Japanese failure to gain access to oil was an important factor in their defeat.

Although the development of nuclear weapons and later ballistic missiles fundamentally altered the nature of warfare, oil-powered forces, and hence oil, remained central to military power. Despite the development of nuclear-powered warships (mainly aircraft carriers and submarines), most of the world's warships still rely on oil, as do aircraft, armor, and transport. In addition, each new generation of weapons has required more oil than its predecessors.

Oil and World Power

While the demand for oil has been worldwide, the greatest sources of supply have been few and far between, and often in developing or underdeveloped countries. Disputes over ownership, access, and price have made oil a source of international conflict, particularly in the Middle East, which contains around two-thirds of known world oil reserves. Created in 1960, the Organization of the Petroleum Exporting Countries (OPEC) is a cartel of oil producing nations that has considerable influence in determining the rate of oil production and with it the price of oil. OPEC countries account for around two-thirds of the world's known oil reserves and around one-third of world oil production.

In the first half of the twentieth century, the United States, blessed with a thriving domestic oil industry and firmly entrenched in the oil-rich region of the Gulf of Mexico and the Caribbean, controlled more than enough oil to meet its own needs and to fuel the allied war effort in both world wars. Following World War II, the United States made maintaining Western access to the oil riches of the Middle East a key element in its foreign policy. Control of oil, in turn, helped the United States fuel economic recovery



in Western Europe and Japan and sustain the cohesion of the Western alliance.

The Soviet Union, in contrast, was unable to convert its control of extensive domestic oil supplies into political influence outside of Eastern Europe. In addition, despite geographical proximity, extensive efforts, and widespread anti-Western sentiment in Iran and the Arab world, the Soviets were unable to dislodge the United States from the Middle East. The Soviets benefited briefly from higher oil prices in the 1970s, but the collapse of world oil prices in the mid-1980s undermined efforts by Soviet reformers to use the earnings from oil exports to ease the transition from a command economy to a market economy while maintaining social welfare programs. In the post-Cold War twenty-first century, oil has allowed Russia to finance military modernization programs and reclaim some of its lost prestige as a world power. Similarly, oil reserves partially explain Venezuela's sometimes bold stance in trans-American political affairs.

Peak Oil

Peak oil refers to the point in time when we reach the maximum rate of world oil extraction. Following the plateau, the rate of oil production begins to tail off into terminal decline. Optimistic forecasts predict that oil will peak in production sometime around 2020. Pessimists claim that peak oil occurred sometime in the first decade of the twenty-first century. In all likelihood we will only become aware of the timing of peak oil after the fact. Precisely what effect peak oil will have on prices, consumption, and world affairs more generally is difficult to determine. It depends in part on the viability of alternative energies.

The central role of oil in transportation and agriculture, and the absence of alternative energy sources that possess oil's versatility, high energy density, and easy transportability, mean that oil prices and competition for access to oil will continue to be important

issues in world affairs. Whether or not social, economic, and political patterns based on high levels of oil use are sustainable on the basis of world oil reserves, environmental scientists warn that they are not sustainable ecologically—that continuation of high levels of oil consumption will have severe and possibly irreversible impacts on the earth's environment.

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See also Energy; Natural Gas; Nuclear Energy; Oil Spills

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Oil Spills

Oil in myriad forms has been used for hundreds of purposes for at least six thousand years. Oil spills occur naturally and as a result of oil exploration, transportation, and processing. Several disasters have led to more stringent environmental standards, such as double-hulled ships. The drilling-platform explosion and subsequent oil leak in the Gulf of Mexico in April 2010 has brought renewed global attention to the dangers of oil spills.

Oil is a main source of energy. Because it is unevenly distributed in the world, it must be transported on the seas and in pipelines to distant lands. Although the major oil transport and transfer activities occur on the seas, ports, and rivers, they are not limited to these areas. Accidental spills can occur wherever oil is drilled, stored, handled, refined, transported, and transferred. These spills can be either massive and catastrophic or chronic. Few other environmental problems are as common or ubiquitous or have the potential for immediate environmental damage and long-range effects. Recent or dramatic oil spills include those involving the ships *Amoco Cadiz*, *Exxon Valdez*, and *Sea Empress*, and the massive intentional oil spills during the Gulf War. As this encyclopedia goes to press, an oil spill resulting from the explosion of the British Petroleum drilling platform *Deepwater Horizon* is still flowing into the Gulf of Mexico from 64 kilometers (40 miles) off the coast of Louisiana; it is considered to be the worst environmental disaster in U.S. history.

Crude petroleum or oil is a liquid or semiliquid mixture of hydrocarbon compounds that contains sulfur, oxygen, nitrogen, other elements, and metals.

The hydrocarbons are the decayed remains of small marine animals and plants that flourished in the shallow inland seas that once covered large areas of the continents. Over hundreds of thousands of years, the dead remains of these tiny organisms drifted to the sea bottom. Covered by mud, this organic matter changed into the complicated hydrocarbons we call petroleum. For the past 600 million years, incompletely decayed plant and animal remains were buried under thick layers of rock, often accumulating one layer at a time. Because petroleum, natural gas, and coal formed from organisms that lived millions of years ago, they are called fossil fuels.

Since the Paleozoic era (from 570 to 245 million years ago), this organic matter has been slowly moving to more porous and permeable rocks, such as sandstone and siltstones, where it was trapped. The oil accumulates because of the presence of impermeable rock lying over these reservoirs. Some oil fields extend laterally in the rock over several kilometers and may be several hundred meters deep. Some oil enters the oceans through natural seeps, and these natural oil spills can have massive effects on the organisms living nearby.

Some of the hydrocarbon products of petroleum include dissolved natural gas, gasoline, benzene, naphtha, kerosene, diesel fuel and light heating oils, heavy heating oils, and tars of various weights. Petroleum yields these products through elaborate refining processes. They are then further refined and combined into other products such as solvents, paints, asphalt, plastics, synthetic rubber, fibers, soaps and cleansing agents, waxes and jellies, medicines, explosives, and fertilizers. Oil spills can occur during the refining process or during transport.



Sir Lawrence Alma-Tadema, *The Finding of Moses* (1904). Oil on canvas. Nile River boats were caulked with asphalt, and when the infant Moses was set adrift he was cradled in a raft of bulrushes “daubed with pitch.” Despite the fanciful depiction, Alma-Tadema’s painting was renowned for archeologically precise details.

History of Small Oil Spills

For over six thousand years people have used asphalt, pitch (bitumen), and liquid oil in numerous and ingenious ways. People living in river valleys of ancient Mesopotamia used local asphalt from hand-dug pits as building cement and caulking for boats. The legend of the flood described in the Book of Genesis records that the ark was well caulked. Nile River boats were caulked with asphalt, and the infant Moses was cradled in a raft of bulrushes “daubed with pitch” when he was set adrift. The Elamites, Chaldeans, Akkadians, and Sumerians mined shallow deposits of oil-derived pitch or asphalt to export to Egypt to preserve the mummies of great kings and queens and to make mosaics to adorn their coffins. (Ancient Egyptians used liquid oil as a purgative and wound dressing, since it aided the healing process and kept wounds clean.) Archeological remains in Khuzestan, Iran, show that asphalt was commonly used for

bonding and jewel setting during the Sumerian epoch (4000 BCE). Asphalt served as cement in the Tower of Babel and in the walls and columns of early Babylonian temples. As early as 600 BCE the Babylonians set clay cones and tiny semiprecious stones in bitumen to form elaborate mosaics.

Soon fossil fuels were recognized for their light-giving properties: according to the Greek biographer Plutarch, in about 331 BCE Alexander the Great was impressed by the sight of a continuous flame issuing from the Earth in Kirkuk, Iraq, probably a natural gas seep set ablaze. The Romans used oil lamps in the first century BCE. The Chinese first used oil as a fuel around 200 CE, employing pulleys and hand labor to suction the oil from the ground through pipes. Oil spills resulting from these uses were small and limited in scope.

Oil was quickly adopted for military purposes, especially naval skirmishes, which resulted in larger spills. Oil-filled trenches were set aflame to defend cities in ancient times. The Persians developed the

first distilling processes to obtain flammable products for use in battle, catapulting arrows wrapped in oil-soaked cloths toward their Greek enemies during the siege of Athens in 480 BCE. At close range, what eventually became known as Greek fire was propelled through tubes onto Persian ships attacking Constantinople in 673 CE, resulting in the Greek's near destruction of the fleet. The Byzantines used liquid fire against the Muslims in the seventh and eighth centuries; thrown onto enemy ships from pots or tubes, liquid fire (probably some combination of oil, naphtha, and chemical substances such as sulfur and quicklime), caused extensive damage and terror. (The exact "recipe" remains unknown, but historians believe it was passed down from emperor to emperor.) The Saracens used Greek fire against St. Louis at the crusades, and the Knights of St. John used it against the invading Turks at Malta. The Mongols also burned petroleum products in their siege of Central Asia. Bukhara in western Asia fell in 1220 because Chinggis (Genghis) Khan threw pots full of naphtha and fire at the gates of the castle, and it burst into flame. People were forced to flee the city or else die.

During the Renaissance, the transport of oil developed, leading to more significant oil spills in the wake of trade. In 1726 Peter the Great of Russia issued ordinances regulating the transport of

oil from Baku on the Caspian Sea, by boat, up the Volga River. Oil became a valued commodity to barter, trade, or steal. In the New World, the natives of Venezuela caulked boats and hand-woven baskets with asphalt, and liquid oil was used for medicine and lighting. Native North Americans used oil in magic, medicines, and paints. The first barrel of Venezuelan oil was exported to Spain in 1539 to alleviate the gout of Emperor Charles V.

The modern era of oil transportation began in 1820 when a small-bore lead pipe was used to transport natural gas from a seep near Fredonia, New York, to nearby consumers, including the local hotel. From this time on, the possibility of oil spills due directly to transport and transfer increased with the decades.

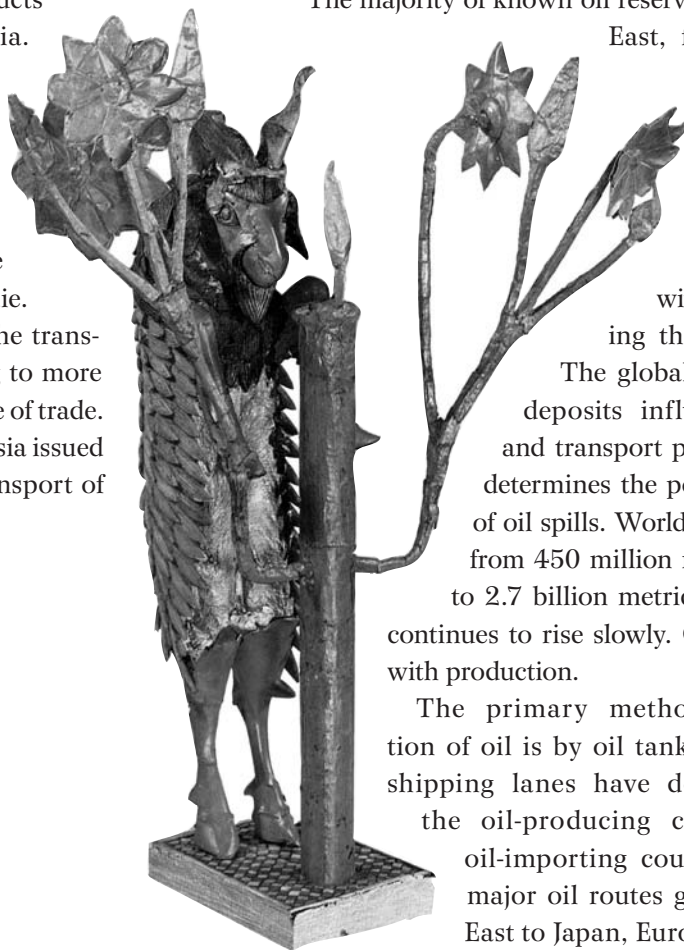
The Modern Oil Spill Era

The majority of known oil reserves are in the Middle East, followed by North America. The Organization of Petroleum Exporting Countries (OPEC) has the greatest reserves, with Saudi Arabia leading the member nations.

The global distribution of oil deposits influences production and transport patterns and thereby determines the potential distribution of oil spills. World oil production rose from 450 million metric tons in 1950 to 2.7 billion metric tons by 1996 and continues to rise slowly. Oil spills rise along with production.

The primary method of transportation of oil is by oil tanker, and traditional shipping lanes have developed between the oil-producing countries and the oil-importing countries. At present, major oil routes go from the Middle East to Japan, Europe, and the United

This sculpted goat, excavated from the royal cemetery in the Sumerian city of Ur, is made from gold, silver, lapis lazuli, copper, shell, red limestone, and bitumen (pitch). Ancient civilizations also used pitch and asphalt as mosaic "cement." The University Museum, Philadelphia, Pennsylvania.





Scientists measure a dead Kemp's ridley sea turtle on the Gulf Coast of Mississippi. This endangered species is especially at risk in an oil spill because it feeds indiscriminately and has no behavioral mechanism for avoiding oiled waters. National Oceanic and Atmospheric Administration.

States. Oil is also transported through pipes over vast distances to refineries. Oil spills occur mainly along these oceanic and land routes and along the shores where oil transfers take place. Small spills occur during the transfer of oil from tanker to tanker, from tanker to refinery, from damaged, underground pipes, and around oil refineries and storage facilities. About 7.56 billion liters of oil enter the oceans from spills and other accidents each year.

Large spills usually occur during tanker accidents. With the increase in the size of oil tankers, the potential for accidents has increased. The tankers of the 1880s had a capacity of 3,000 metric tons, compared to 16,500 in 1945, 115,000 in 1962, and 517,000 in 1977. In the modern era of tankers, considered to be post-1989 and the *Exxon Valdez* disaster, tankers are commonly classified by size and the sea lanes they travel: Panamax and Suezmax tankers, for instance, are the largest crude carriers that will “fit” through the Panama and Suez canals, respectively. Recent requirements and conventions, such as the International Maritime Organization’s International Convention for the Prevention of Pollution from Ships, dictate that only double-hulled ships can ply international waters; this should decrease the number of tanker spills in the future, although not all regulations and conventions are legally binding. Oil spill-susceptible single-hulled

ships are due to be taken out of service worldwide by 2010, although it remains to be seen whether this will happen or not.

Although the large oil spills receive media attention, only about 4 percent of oil entering the oceans comes from tanker accidents. Another 25 percent enters from tanker operations, 14 percent from other transport accidents, and 34 percent from rivers and estuaries. About 11 percent of the oil entering the oceans comes from natural seeps.

Major Spills

Since 1978 there has been a steady increase in the number of small spills, whereas the number of large spills has remained relatively constant. One to three spills of over 38 million liters happen each year. One or two catastrophic accidents in any given year can substantially increase the amount of oil spilled onto the land and into the oceans. The small spills of less than 378,000 liters apiece add up to about 38 million liters a year worldwide. Even without major disasters, large quantities of oil spill into marine and inland habitats.

The largest spill on record dumped 907 million liters into the Persian Gulf in 1991 as Iraqi forces sabotaged hundreds of wells, oil terminals, and tankers when they withdrew from their position in Kuwait during the Gulf War, but most spills are



After the *Exxon Valdez* spill in Prince William Sound, workers attempted to clean the shoreline using high-pressure, hot-water washes in which oil is hosed from the beaches, collected within floating boom, and then skimmed from the surface of the water. National Oceanic and Atmospheric Administration.

smaller. The 1970s were the worst decade on record in terms of both numbers of oil spills and quantities of oil spilled, according to the International Tanker Owners Pollution Federation (ITOPF). Other large spills have included the oil well Ixtoc-1 in Mexico (529 million liters, 1979), Norwruz Field in Arabia (302 million liters, 1980), Fergana Valley in Uzbekistan (302 million liters, 1992), *Castillo de Bellver* off South Africa (294 million liters, 1983), and the *Amoco Cadiz* off France (257 million liters, 1978). All other spills were less than 189 million liters each. The *Exxon Valdez* spill of 1989 in Alaska was twenty-eighth on the list, with 41 million liters, although the spill was particularly devastating because of the fragile nature of the affected sub-Arctic ecosystem. Because the 2010 Gulf of Mexico spill is not yet fully contained at this writing, nearly three months after the explosion of the *Deepwater Horizon* platform—and because the estimates of how much oil spilled per day varied so dramatically, depending on the source—determining its place in this world hierarchy is premature. According to Kayvan Farzaneh, writing in the 30 April 2010 issue of *Foreign Policy*, the Gulf spill would clearly dwarf the *Exxon Valdez* disaster, however, based on average estimates of 5,000 barrels spilled a day for 90 days, or about 75 million liters.

Effects of Oil Spills

Animals and plants and the nonliving parts of ecosystems are not equally vulnerable to oil spills. Some

plants are fragile and have narrow habitat ranges, and they grow only in isolated sites. Some animals are very specialized, living in only a few places or eating only a few kinds of foods. Such species are particularly vulnerable to even small oil spills. Plants and animals in Arctic environments are fragile because of the limited growing season, limited diversity, and slow decay of the oil itself.

Other species are generalists, with wide tolerances for different environmental conditions, broad food requirements, and large geographical distributions. Such animals and plants are very adaptable and often can recover quickly from an oil spill, although the initial death toll may be high. Still other animals, such as some birds, fish, and mammals, can move away from a spill if its spread is slow.

Factors that determine whether an oil spill has devastating effects on plants and animals include size of the spill, type of oil, time of the spill (particularly in relation to the lifecycle of the organisms), vulnerability of particular plants and animals, and the vulnerability of particular ecosystems. Location of a spill can determine effects. In spills in intertidal marshes or estuaries where there is little tidal flow, there is a reduced opportunity for the oil to be carried out to sea, where dilution can blunt the effects. Oil often concentrates at the edge of marshes where there is also a high concentration of invertebrates, young fish, and foraging birds. Many invertebrates do not have the ability to move or move only very

Oil is like a wild animal. Whoever captures it has it. • J. Paul Getty (1892–1976)

short distances, making them particularly vulnerable to oil.

The timing of a spill is critical. A spill that occurs during the migratory season of birds, fish, or mammals may result in unusually high exposure of vast numbers of animals. A spill during the spawning season of invertebrates or fish can eliminate reproduction for a season, and a spill during the migration season of marine mammals can kill or weaken a significant portion of the local populations of seals, sea lions, sea otters, whales, and other mammals. Seabirds are particularly at risk because they spend most of their time in the oceans or in estuaries, where massive oil spills usually occur. Seabirds also nest in large colonies of hundreds or thousands, where an oil spill can “oil” or kill hundreds at a time. Oiled parents bring oil back to the nests, killing eggs or young chicks. Because they are so visible, birds often serve as bio-indicators of the severity of oil spills, although only a fraction of the birds that die in oceanic or coastal oil spills are ever recovered. Spills that occur during hurricane or cyclone seasons can be particularly hard to clean up.

People can be injured or become ill during oil spills or during the cleanup and can become ill by consuming oil-tainted fish or shellfish. Oil spill accidents can result in the death of workers on the tanker, refinery, or pipeline or the people employed in cleanup. Oil spills often occur during bad weather and stormy seas, making the hazards for the tanker crew more severe.

The effect of oil spills on fishing communities can be devastating. Fishing communities are affected both in the short term and the long term. For many weeks or months the fish are tainted or contaminated, grounding the fisheries completely. The effects of oil on the fish may result in lower harvests for years after the oil has disappeared. Fishing losses were documented for at least six years after the *Exxon Valdez* spill. Fishers lost income because of the low yields and restricted fishing areas, and guides and hotels lost money because recreational fishers did not come back for many years. Fishers and guides lost their jobs and their lifestyle. Native

American communities also lost their ability to harvest traditional resources, including fish and shellfish, resulting in a permanent change in their lives. The effects cascaded because much of the local economy depended upon fishing and tourism. The effects of oil spills on aesthetics and existence values, as well as on fishing and tourism, are massive and extensive. The full effects of the ongoing British Petroleum *Deepwater Horizon* spill on the fragile ecosystems of the Gulf of Mexico cannot yet be calculated as of this writing, but the long- and short-term consequences on the wildlife and fishing and tourism industries will be catastrophic indeed. A synchronous oil spill on the other side of the planet, at Dalian, an important coastal resort city in China, made it clear that disasters resulting from the continued search for concentrated forms of ancient biological life—fossil fuels—affect ecosystems, human health, and regional economies. If there is a silver lining, it is to be hoped that the disaster will lead to more robust, legally binding international laws regarding the exploration, transportation, and processing of the world’s oil, and a renewed sense of urgency of finding alternative sources of energy.

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See also Oil

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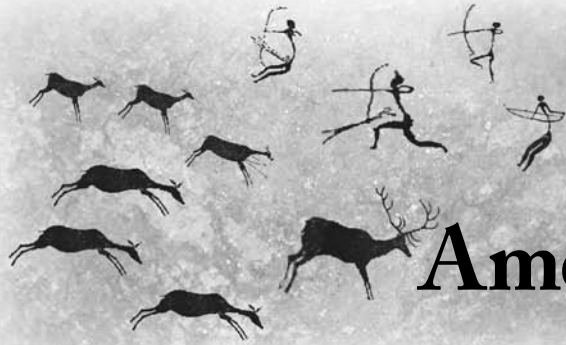
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Organization of American States (OAS)

The Organization of American States (OAS) is the world's oldest regional organization, dating to 1889–90. The stated primary concerns of the OAS are promoting democracy, defending human rights, multilateral security, and economic and social development. Today the OAS membership comprises the thirty-five independent states of the Americas; another sixty-two states have permanent observer status, as has the European Union.

The Organization of American States (OAS), headquartered in Washington, D.C., is an international organization and successor to the Pan-American Union (PAU), which was founded in 1889–1890 at the First International American Conference and originally called the Commercial Bureau of the American Republics. The conferences sought to deal with commercial and legal issues in the Americas. The OAS is organized into the Office of the Secretary General, the General Assembly, a Permanent Council, and the Inter-American Council for Integral Development. There are specialized organizations and agencies to deal with such varied issues as drug control, telecommunications, human rights, and agriculture.

In the spring of 1948 in Bogotá, Colombia, at the Ninth International American Conference, delegates representing twenty-one American countries signed the OAS Charter and the American Declaration of the Rights and Duties of Man, the first international expression of human rights principles. The OAS, which built upon the Inter-American Treaty of Reciprocal Assistance, reflected the onset of the Cold War, which remained the United States of America's

preoccupation for more than a quarter century. That is, the OAS was part of a broad U.S. effort, along with the Truman Doctrine, the Marshall Plan, and NATO, all in Europe, to organize friendly countries to work together, to better the lives of their respective peoples, and to resist the Soviet Union and international Communism. The transition from PAU to OAS went smoothly, and the PAU director general, Alberto Lleras Camargo, became the first secretary general of the OAS. The non-signers were mostly British dominions and British crown colonies in the Americas still tied to the British Commonwealth. In subsequent years, fifteen countries have joined the original twenty-one signatories, the last being Guyana in 1991.

The OAS has clear goals, including working with the United Nations to promote hemispheric peace, supporting economic development, encouraging cultural and social interactions, and protecting the sovereignty and independence of American states. Article 1 of the Charter states that aims of the Organization and its members is “to achieve an order of peace and justice, to promote their solidarity, to strengthen their collaboration, and to defend their sovereignty, their territorial integrity, and their independence.” Article 2 outlines eight essential purposes:

- a) to strengthen the peace and security of the continent;
- b) to promote and consolidate representative democracy, with due respect for the principle of nonintervention;
- c) to prevent possible causes of difficulties and to ensure the pacific settlement of disputes that may arise among the Member States;



- d) to provide for common action on the part of those States in the event of aggression;
- e) to seek the solution of political, juridical, and economic problems that may arise among them;
- f) to promote, by cooperative action, their economic, social, and cultural development;
- g) to eradicate extreme poverty, which constitutes an obstacle to the full democratic development of the peoples of the hemisphere; and
- h) to achieve an effective limitation of conventional weapons that will make it possible to devote the largest amount of resources to the economic and social development of the Member States.

There certainly have been tensions and differences in the organization and among member states, reflecting in part differences between the United States, caught up in Cold War bipolarization, and Latin American nations, who feared American power and interference. Nevertheless, the OAS has enjoyed some success in maintaining peace in the Americas. For example, it helped end border fighting between Costa Rica and Nicaragua in 1948–1949 and 1955 and resolve the 1969 “*Soccer War*” between Honduras and El Salvador.

But there have been challenges as well. In 1959, Fidel Castro led a movement that overthrew the corrupt regime of the dictator Fulgencio Batista. Three years later, after Castro announced he was a Marxist-Leninist, the United States moved to have Cuba expelled from the OAS on charges of subversion, and in 1964 the OAS imposed a trade boycott. But by the 1990s, virtually every OAS member state save for the United States had restored diplomatic relations and resumed trade with Cuba. And now in the twenty-first century even the U.S. is looking to soften its stance towards Cuba. On 3 June 2009, the OAS resolved to repeal a 1962 Resolution excluding Cuba from the workings of the Organization. More recently, on 5 July 2009, the Organization unanimously invoked Article 21 of the Inter-American Democratic Charter to suspend Honduras following the 28 June coup d’état that overthrew President José Manuel Zelaya.

For the United States, the Monroe Doctrine and the Cold War challenge from the Soviet Union mattered as much as the sovereignty of nations in Central America and the Caribbean. The OAS did approve United States intervention in Santo Domingo in 1965, but opposed U.S. action in Nicaragua in 1979, since OAS delegates concluded that there was little threat of Soviet intervention developing from the Sandinista regime that overthrew Anastasio Somoza in that country, a view at odds with that of the U.S. government.

For a brief period, the United States seemed committed to active involvement in the Americas. In 1961, President John F. Kennedy pledged U.S. aid to help promote Latin American economic development, land reform, and social development. He promised billions of dollars to assist the efforts of Latin American governments. But, as the United States became preoccupied with the war in Vietnam, the U.S. government reduced commitments to the program, and the OAS disbanded its committee to implement the alliance in 1973.

The influence of the Organization of American States began to decline with the collapse of the former Soviet Union and the attendant end of the Cold War, as well as the involvement of major international agencies in Latin America. For the United States, matters in Latin America seemingly mattered less than peace in the Middle East, relations with the People’s Republic of China, helping Eastern Europe negotiate its post-Soviet future, and tensions on the Indian subcontinent. The International Monetary Fund and the World Bank began to play increasingly important roles in assisting the economies and governments of many of the countries of the Caribbean and Central and South America. The end of the Cold War has helped bring about a revitalization of the OAS, but future prospects hinge on dealing adequately with the inequality of power between the United States and the Latin American members, especially given concerns for democracy, human rights, security, and trade and economic prosperity.

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Orientalism

The 1978 publication of *Orientalism*, a pivotal and controversial study by Edward Said, redefined a term that originally meant “scholarship that pertains to the Orient (or knowledge of Oriental languages and cultures).” Said stressed that the Western perception of the “Orient,” itself an ambiguous term, depended on creating an image of the East as the “other,” and thus facilitated its colonialization and subjugation.

Few historical terms have been as central to attempts to explain the emergence of the modern world system as *Orientalism*—the Western study (and defining) of the East. Orientalism must be understood in the context of the global history of colonialism and imperialism. An examination of Orientalism in such disciplines as the study of “Oriental” literature reveals the desire on the part of European civilization to acquire an image of its opposite: the “other.” Postcolonial critics such as Homi K. Bhabha and Gayatri Chakravorty Spivak have argued that literary texts dating from the colonial and imperial periods in particular can be exposed as claiming (Western) dominance over the rest of the world.

Edward Said and Orientalism

The American-Palestinian professor of English and comparative literature, Edward Said (1935–2003), said that literature, the arts, and politics were inseparable. His *Orientalism: Western Conceptions of the Orient* (1978), a provocative and polemical study that received praise and controversy in equal measure since its first publication, redefined Orientalism, which originally meant simply scholarship pertaining

to the Orient or knowledge of Oriental languages and cultures. For Said, Orientalism was the act, on the part of those in the West, of defining themselves by defining the “other,” the Easterner (or Oriental). He argued that this process told as much or more about the constructed self-image as about the other that the studies were theoretically attempting to define. What exactly comprises “the Orient” is not clear: for some it is the Middle East; for others it includes all of Asia. (This point can be enhanced by looking at the opulent, exotic, and erotic scene depicted in Jean-Léon Gérôme’s *The Snake Charmer* (c.1870), a detail of which graced the cover of the 1978 edition of Said’s book: Gérôme paints with nearly photographic realism in this work, but the imagery in the scene is a pastiche of Egyptian, Turkish, and Indian elements.) A further dimension comes into the discussion with Western approaches to Africa. Yet this dimension has largely been ignored so far, not least by Said himself who emphasized the congruency of the orientalist debate, including the geographical East. Marxist scholars, by contrast, have pointed to a multiplicity of problems and differences evident from many disciplines and resulting from a multidimensional relationship between knowledge and power. Knowledge, in short, was neither scientifically innocent nor politically disinterested.

Knowledge and Power

According to Said’s *Orientalism*, knowledge of the Orient produced in the West helped European colonizers maintain their subjugation and exploitation of the colonized on the one hand and their pretence of objective and detached science on the other. Knowing and naming the other, they said, preceded control

over the other. The consequence of linguistic, literary, philological and historical learning about Islam and Muslim peoples could be, for example, that it could be used as an instrument by the West to impose its worldwide superiority. Furthermore it was believed that Orientalism was also displayed in museums and in the academy as well as in biological and anthropological arguments.

In his *History of British India* (1817), the philosopher and historian James Mill (1773–1836) expressed the conviction that modernization was synonymous with Western imperial expansion, which, according to Said, also coincided with the Anglicization of the world. Thomas Babington Macaulay (1800–1859), probably the most famous nineteenth-century English historian, suggested that the evangelical and utilitarian values that were generally predominant in his age were instrumental for the reeducation of the Indian subcontinent. In the eighteenth century cosmopolitan views had been possible, indeed highly attractive for many intellectuals, who experienced an openness that had made possible comparisons between the European and Asian civilizations, encouraging the mutual reception of similarities and common ground. But in the nineteenth century a more ethnocentric attitude became the norm, as typified by opinions such as that of the philosopher G. F. W. Hegel (1770–1831), who notably called Africa a continent without history. It was out of this sense of superiority that Orientalism emerged and upon which it was based. It reflected the conviction that the peoples of the Orient (whatever that comprised) were ontologically different and represented a different type of character.

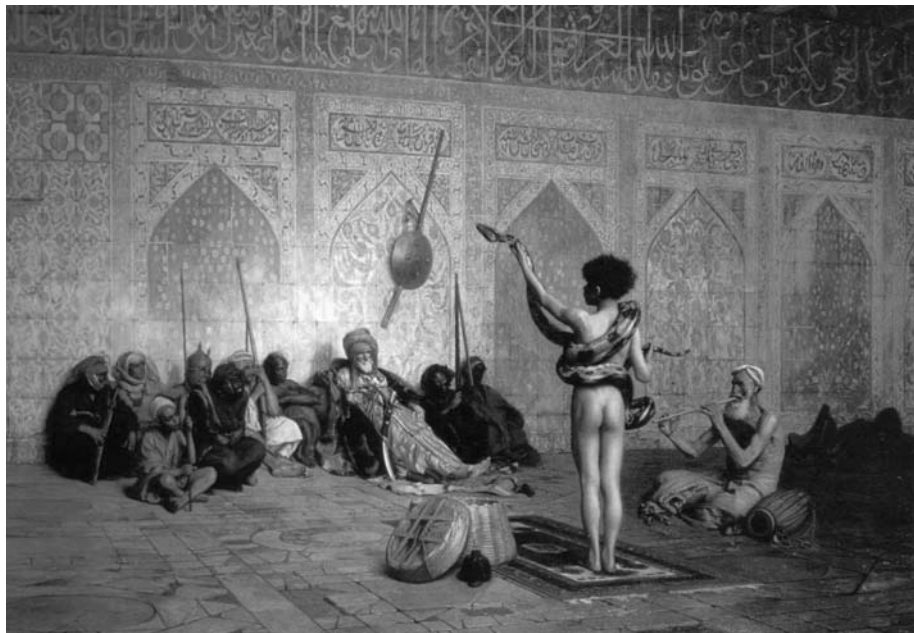
Knowledge about the Orient was thus constructed by generations of intellectuals and writers, politicians and artists. It was part of a broader imperial culture relating to the Italian political thinker Antonio Gramsci's understanding of cultural hegemony. The work of individual scholars spoke less for itself than for the uniformity of knowledge about the Orient as presented by the West. Thus nineteenth-century Western scholars were prisoners of their own academic world, unable to overcome the intellectual limits set by the methodology and the semantics of their approaches and

thus following up an ongoing monologue on a subject about which they were not objectively informed. As Said pointed out, these scholars often did not even travel to the countries about which they wrote, and therefore they could hardly claim to be well and objectively informed. The West claimed mastery of a special way of knowing called "science," a supposedly objective route to universal truths, but the omniscient attitude that went along with Western scientific inquiry was devoid of any experience of Oriental reality. The message of the Orientalist discourse was this: the East was purely receptive, a passive reactor described by adjectives such as "female," while the West was the actor of history, structuring life and judging the other. This was the relationship between the colonizer and the colonized, the ruler and the ruled.

Orientalism and Its Traditions

In the introduction to a later edition of *Orientalism*, Said claimed that in the last quarter of the twentieth century research on the Middle East, Islam, and the Arabic world had not developed much in the United States. Europe, by contrast, presented a better picture. A different perception of the East resulted from a different interest in it, whether political, economic, military, scientific, or cultural. Said suggested that the geographical proximity of Europe and the Middle East had been of great relevance for mutual cultural stimulation. He emphasized the impact of British and French writers but failed to mention German and East European scholarship.

It is striking that Said's impact on gender and literary studies, on discourse analysis and postcolonial critics, and on social studies and history has been predominantly in the English-speaking world while in Germany, for example, with its short colonial experience, Said's Orientalist thesis has had a relatively lukewarm reception. The impulses feeding *Orientalism*, however, come from a wide spectrum of intellectual sources. For obvious reasons, the period from the beginning of the direct European colonial presence and the establishment of colonial rule in the second half of the nineteenth century to the age



Jean-Léon Gérôme, *The Snake Charmer* (1880). Oil on canvas. A detail from this painting became the cover art for Said's book *Orientalism* (1978). While Gérôme painted with painstaking realism, the scene comprises elements of Egyptian, Turkish, and Indian cultures—an amalgam of the European view of the East as “the other.” Sterling and Francine Clark Art Institute.

of decolonization and political independence was of central importance for the development of Oriental scholarship.

Said believed that the Orientalist discourse experienced its first heyday in 1798, with Napoleon's invasion of Egypt. The scholar and politician C.-F. Chasseboeuf, Comte de Volney (1757–1820), who traveled in Egypt and Syria and became a prominent critic of the French campaign, nonetheless advocated forcibly changing the local government from religiously dominated despotism to republicanism. As Volney was also involved in the preservation of historical monuments, his attitude could be called an early version of *mission civilisatrice*—the civilizing mission—that manifested itself institutionally in the establishment of the French Institut d'Égypte in Cairo. The civilizing mission was an excuse for European cultural penetration of Oriental societies, legitimated by a belief in the supposedly passive character of Oriental peoples.

On the other hand, even in the earliest days there was an “Occidental” critique that shaped the understanding of how the West had projected its images of the “Other” and of how the East could reply by investigating Western cultural identity. Essentially this dialectic required not only investigation of how Orientalist and Occidental traditions were invented, but in particular against what and whom. To the same degree that Western attitudes toward

the East were formed by the colonial relationship that existed between ruler and ruled, the converse was also true: a new Occidentalism was constructed in order to draw a line between the West and the rest, to challenge this distinction and to investigate divisions within societies.

Occidentalism, however, should not be mistaken for Occidental critique of Orientalism as an academic discipline. Here, as has been pointed out, two perspectives, the religious and the Marxist, are of particular interest, especially in the Arabic world. The Palestinian scholar Abdel-Latif Tibawi is of the opinion that until quite recently most Western academics dealing with problems of the Middle East were neither adequately trained in languages and social sciences, nor sympathetic to Islamic matters. Of even greater weight was the accusation that the scholarship of Orientalists was far from objective on religious questions. Indeed, it was suggested that it had helped to develop religious hatred between Christianity, Islam, and Judaism. The Marxist argument also built on a picture of cultural confrontation, holding that Orientalism should have been overcome when former colonies asserted their political independence. It continued to exist, however, in the minds of those believing in the alleged passivity of “Orientals.” The Marxist perspective gave more attention than the religious perspective did to sociological and political concerns. Apart from recognizing the opportunity



John Frederick Lewis, *Harem Life in Constantinople* (c. 1857). Oil on canvas. The foreign exoticism of harem life fascinated Western viewers, which led Western artists to reproduce glimpses of it—in a corner of the studio.

to marginalize Eurocentric worldviews, those taking this anti-imperialist perspective saw it as advantageous for promoting academic cooperation between the peoples of Asia, Africa, and South America. The Marxist perspective, in other words, is problem oriented and takes a comparative perspective on Third World countries, as opposed to being predominantly dichotomized and discursive, as is Said's critique of existing Orientalism.

Orientalism, Said, and His Critics

Edward Said's argument in *Orientalism* is frequently criticized for lacking a sense of history. It is also considered a failing that it gave so little weight to the religious motivations of Orientalists with Christian or Jewish backgrounds who write about Muslim peoples. Yet while both history and religion were certainly crucial to the nineteenth-century understanding of Islam

and Muslims, criticism of Said's thesis have come mainly from the fields of literary criticism, cultural studies, or feminism. (Feminist scholars have taken issue with the fact that Said presented Orientalism as the domain of white male scholars and writers without paying enough attention to its female aspects.) Above all, it remains questionable whether high literature, in particular, the novel, is a suitable medium for conveying the message of imperialism on a massive scale; possibly Said the professor of literature overestimated the influence of Dickens, Kipling, Conrad, and their contemporaries.

On the other hand, Said revealed that although literary texts such as travel reports and diaries were often fictional, they purported to reflect realistically on the Orient. But can literary works that deliberately painted a fictional image of the East be accused of Orientalism? Said's critics claim that the converse was true with regard to the "Oriental discourse" of professional linguistics, for example, namely that their subject was certainly not Orientalist. Said did not discuss why in the nineteenth-century Western world it was above all professional linguistics that formed the core of the sciences of the Orient, while it was the relatively new disciplines of geography and history that exercised the greatest influence upon political decision making in colonial and imperial matters. This means that critics of Orientalism overestimate the impact of Orientalist scholars, while they underestimate the impact of those academic disciplines in which the Orientalist attitude was less visible, but probably more inherent.

Finally, critics of the concept of Orientalism have claimed that the idea of a culturally united West as suggested by Said never existed. While Said rejected the assumption that there was an entity such as "the Orient" constructed by Orientalism, he nonetheless had no reservations about speaking of a monolithic "West," a single Western civilization able to dominate the world by every means, including cognitive and cultural ones. Given the actual intercultural relationships and transfers between the continents, his critics have considered Said's model to be too strongly based on the idea of a monologue; they argue for a dialogue

Since the time of Homer every European, in what he could say about the Orient, was a racist, an imperialist, and almost totally ethnocentric. • **Edward Said (1935–2003)**

that will eventually bring the developing world back into the debate.

Notwithstanding the problematic character of many of Said's generalizations, which his critics have pointed out are often oversimplifications, it remains a particular merit of *Orientalism* that it focused and intensified research on the delicate relationship between an academic discipline and imperialism. Sensitized by *Orientalism*, scholars have reformulated questions concerning representations of the "Oriental" and the "European," intercultural communication, and the conditions under which knowledge about the other in opposition to the self can be gained.

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See also Ethnocentrism; Eurocentrism; Postcolonial Analysis

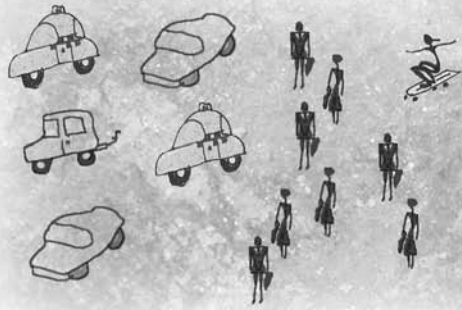
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Osman I

(c. 1258–c. 1326)

FOUNDER OF THE OTTOMAN EMPIRE

Osman established the foundations of the Muslim Ottoman Empire, one of the greatest empires in history, in the late thirteenth century, but little about his life is documented in the historical record. His immediate successors expanded the Ottoman state far beyond the small part of Anatolia that Osman ruled.

Scholars know more from legend about Osman, the ruler who “gave” his name to the Ottoman Empire (*Osman* is ‘*Uthman* in Arabic, hence Othman and Ottoman), than from historical evidence. No one knows, for instance, when precisely he was born or began to rule. But it is certain that the major events of his lifetime occurred in the early fourteenth century.

The son of Ertugrul, Osman led a small emirate in Anatolia (modern Turkey). It was but one of numerous Turkic emirates in the region. Originally, Osman and his father had entered the service of the Seljuks with a small following, fleeing westward away from the Mongols. After his father’s death, Osman’s emirate increased in power, often at the expense of the Seljuks, and Osman expanded his territory in order to gain more pasturage for his nomadic troops. He grew sufficiently strong that his forces successfully repulsed a few attempts by the Mongols to impose their authority over him.

From coins dating from the era, it is known that Osman was an independent ruler by 1281 and that he fought with Byzantine forces on numerous occasions, usually emerging as the victor. His base of operations was in the Sakarya River valley in northwestern Anatolia. However, details from the contemporary sources are very sketchy, and most



Portrait of Osman I, founder of the Ottoman Empire.

knowledge of his activities seem to be based in tradition rather than any historical record. Nonetheless, it is known that his forces operated on the frontier of the Islamic world and that of the Byzantines. Osman defeated the Byzantines near Nikomedia (Izmit) and also at Katoikia. It is unclear when these battles occurred; the contemporary chronicler, Pachymeres, however, places them before 1307. Although Osman enjoyed success against

the Byzantines, it was not uniform as he failed to take Bursa and Iznik.

Osman's role in world history is greater than his actions during his lifetime would indicate. He established the foundations for one of the greatest Muslim empires, and indeed, greatest empires of any kind, in history. His immediate successors continued to expand the nascent Ottoman state far beyond the small part of Anatolia that Osman ruled. While it is uncertain how much of a factor religion actually played in the wars between Osman and the Byzantines, it became part of Ottoman tradition that the Ottomans started off as Muslim warriors who lived on the frontier specifically to do battle with nonbelievers.

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See also Ottoman Empire

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Ottoman Empire

The Ottoman Empire (c. 1300–1922) is among the most durable and successful empires in world history. It spanned the late medieval, early modern, and modern periods and, at its peak, held possessions on the continents of Europe, Asia, and Africa. Although officially an Islamic state for nearly all its history, the Ottoman state ruled over primarily Christian subjects until its final half-century.

The Ottoman Empire (c. 1300–1922) first emerged in the northwest corner of Anatolia, then in the midst of its transformation from a Greek-speaking Christian to a Turkish-speaking Muslim cultural zone. Indeed, the formation of the Ottoman state accompanied and completed this transformation. The Ottoman state achieved world-empire status in 1453, when it conquered Byzantine Constantinople. Between the fourteenth and seventeenth centuries, the Ottoman Empire was among the most powerful states in the Mediterranean and European regions. Indeed, for a time it may have surpassed all other states in the world except Ming dynasty China (1368–1644) in political, military, and economic power.

International Political Developments

The Ottoman transition from principality to a world empire, in common with imperial achievements elsewhere in the globe, derived from a complex mix of factors that included geography, the proximity of weak enemies, and luck. But we must also give substantial credit to Ottoman policies and achievements. After

all, there were many small states and principalities struggling for supremacy in Anatolia following the migrations of Turkish peoples from Central Asia. The Ottoman family emerged on the Byzantine borderlands not far from Constantinople (now Istanbul). The dynasty and its supporters employed pragmatic statecraft and methods of conquest. They rewarded the human material at hand and cared little if it was Christian or Muslim or Greek, Bulgarian, Serb, or Turkish. Thus, on these early battlefields, the Ottoman dynasty commonly led troops that were a combination of both Muslim and Christian warriors. These pragmatic policies also included an exceptional openness to innovation, including military technology. Until sometime during the seventeenth century, the Ottomans typically enjoyed tactical battlefield superiority. Overall, openness and innovation go far in explaining why the Ottoman principality emerged as a world power. Like Rome, the Ottoman emergence to empire status was not overnight but built on a steady record of achievement and determination. The Ottoman Empire offered a durable example of state building in its combination of military power and an eye to justice and toleration of differences among its subjects.

During the seventeenth century, however, Ottoman preeminence slipped away. Just as explanations of the rise of empires remains elusive, so too are those regarding their decline. In the Ottoman case, it seems clear that factors at work well beyond its frontiers played a large role in the deterioration of the Ottoman international position. There is no doubt that the rise of capitalism and industrialism in Europe, western Europe's conquest of the New World, and



its monopoly access to American wealth, are keys in understanding the mounting imbalance between Ottoman and European military and economic power. By the beginning of the nineteenth century, the Ottoman Empire had become a second-class economic, military, and political power, and it shared a common fate with the entire non-European world save Japan after around 1850. Economically, the wealth gap between Ottoman subjects and residents in most west European states widened. Politically, the Ottomans became part of the “Concert of Europe” at the mid-nineteenth century point but remained subordinate to the Great Powers such as Britain, France and the emergent Germany.

Internationally, on its western and northern fronts, the state encountered increasingly powerful enemies that had been enriched by New World wealth and could better bear the mounting costs of outfitting and maintaining armies in the field; expansion finally ground to a halt in the late seventeenth century. Innovation diminished as entrenched bureaucrats and statesmen acted to preserve positions for their

children and closed entry to innovative newcomers. A catastrophic military failure at Vienna in 1683 was followed by some victories but mainly defeats during the subsequent one hundred years.

During the nineteenth century, there was an important reversal of fortunes as a series of successful reform programs measurably strengthened both the Ottoman state and its military. The size of the central bureaucracy increased substantially as the state increasingly sought to more closely control the lives of its subjects/citizens. Previously, the early modern Ottoman state, like its contemporaries across the globe, mainly had collected taxes and maintained order. In its more modern guise, the Ottoman and other states now took responsibility for the health, education, and welfare of its subjects and sought to bring government into every sphere of life. In this attempt, the Ottoman state enjoyed many successes during the nineteenth century and was vastly stronger in 1914 than it had been around 1800. Despite this impressive record, the Ottoman Empire was defeated in World War I and

Our strength lies in our intensive attacks and our barbarity . . . After all, who today remembers the genocide of the Armenians?" • Adolf Hitler (1889–1945)

partitioned by the Great Powers, notably Great Britain and France. Ottoman successor states include today's Albania, Bosnia, Bulgaria, Egypt, Greece, Iraq, Israel, Lebanon, Montenegro, Romania, Saudi Arabia, Serbia, Syria, Turkey, and other states in the Balkans, the Arab world, North Africa and the north shore of the Black Sea.

Domestic Political Developments

From the perspective of domestic developments, the Ottoman state underwent continuous change over the centuries. The Ottoman ruler, the sultan, began as one among equals but between the conquest of Constantinople in 1453 and the later sixteenth century, the Ottoman sultans ruled as autocrats. Thereafter, until around 1800, other members of the imperial household, often cooperating with provincial notables, controlled the state. During the nineteenth century, bureaucrats and sultans vied for dominance, with the former in charge in the middle of the century and the sultan during its first and fourth quarters. Overall, sultans presided over the imperial system for all of Ottoman history but actually, personally, ruled only for portions of the fifteenth, sixteenth, and nineteenth centuries. It seems important to stress that the principle of sultanic rule by the Ottoman family was hardly ever challenged through the long centuries of the empire's existence. Unlike in the Chinese case, there was no Mandate of Heaven that could move to a new family and justify the overthrow of a dynasty.

Over the centuries, political power nearly always resided in the imperial center and, depending on the particular period, extended into the provinces either through direct military and political instruments or indirectly through fiscal means. The central regime exerted its military, fiscal, and political authority through mechanisms that evolved continuously. Thus, there was not a single Ottoman system or method of rule, except one of flexibility, adaptability, and change.

During the early centuries, the *timar* system was the financial basis of the cavalymen, who fought

with bows and arrows. Under this system, the state granted to each cavalryman (and others who served the state) the revenues from a piece of land but not the land itself, in a quantity sufficient to maintain the cavalryman and his horse. He did not actually control the land, but only the taxes deriving from it. Peasants worked the land and paid taxes that supported the *timar* cavalryman both on campaign and at home. This *timar* system was at the center of Ottoman fiscal and military affairs only for the earlier portion of Ottoman history, perhaps only during the fourteenth, fifteenth, and part of the sixteenth centuries. Hardly had the state developed the *timar* system when the regime began to discard the cavalymen and, along with them, their *timar* financial underpinnings. The *timar* system nominally endured until the nineteenth century. Infantrymen bearing firearms became increasingly important. As they did, the famed Janissary Corps ceased to be a gun-wielding praetorian elite and developed into a firearm-bearing infantry of massive size. Support of these full-time soldiers required vast amounts of cash. Therefore, tax farming, which provided cash revenues, steadily replaced the *timar* system, which received taxes mainly in kind, as the major fiscal instrument. By 1700, lifetime tax farms began to become commonplace and dominated the fiscal system in the later part of that century. Despite these changes, Ottoman military forces lost out in the arms race by the end of the seventeenth century because tax revenues from agricultural pursuits could not match European revenues derived from a combination of colonialism, mounting world trade and the burgeoning domestic economy. During the eighteenth century the makeup of Ottoman military forces continued to change: the Janissary infantry and the *timar* cavalry continued to exist in name but gave way in importance to the troops of provincial notables and the forces of the Crimean khanate, a vassal state. The changes during the nineteenth century were more radical: universal manhood conscription controlled by the central state slowly developed. Lifetime tax farms were abandoned, but tax farming nonetheless continued, a measure of the continued



Ottoman troops, 1914, Gaza. The empire was defeated in World War I and partitioned by the Great Powers, notably Great Britain and France.

cooperation between the central elites and local notables.

Until the later nineteenth century, perhaps surprisingly, most Ottoman subjects were Christian. But, thanks to territorial losses in the mainly Christian Balkan provinces, Muslims became the majority element in the empire by the third quarter of the century. But regardless of whether they were Muslim, Christian, or Jewish, all subjects fell under the jurisdiction of both religious and secular law. In the eyes of the state, Muslims enjoyed a legal position superior to Christians and Jews—however, these latter groups possessed guaranteed legal rights and status. For these rights and legal protections, non-Muslims paid a special tax. Otherwise, all the communities were subjects to the same taxes. The Ottoman state determined who administered the laws governing a community, whether that of the Muslim, Christian, or Jewish community or of the imperial state. The sultan

and his agents determined the judges in the respective communities either directly or by appointing those who in turned named the judges. Theoretically, the religious law of the respective group prevailed in the particular Muslim, Jewish, or Christian community. But, practically speaking, the Muslim courts very often were used by subjects of all religions. There were several reasons for this, including the quality of the justice that the judge administered and the fact that it was understood that rulings from such courts might well have greater weight than those from Christian or Jewish sources. In addition to this religious law, the state routinely passed its own, secular ordinances (always with the assertion that such rules adhered to Islamic principles). In the nineteenth century, when a flood of ordinances and regulations marked the presence of an expanding bureaucratic state, even the lip service frequently fell away in favor of scientific management. Moreover, as part of its nineteenth-



Silk-reeling workers, Bursa area, 1892. Spinning operations, staffed largely with female laborers, emerged as an important new export industry for the empire.

century reform agenda, the state sought to replace the religious courts with secular ones, an effort strongly opposed by many Ottoman Christian leaders, who feared a loss of influence, and their patrons among the European states.

Ottoman Economy

The Ottoman Empire remained populated mainly by cultivators who raised a wide variety of crops for subsistence and sale. Many not only farmed but also manufactured handmade textiles and other products, again both for personal use and the market. Cereals always topped the list of crops that they grew. Following ancient regional precedents, the sultan theoretically owned the vast majority of

land and allowed others to grow crops and raise animals. In practice, generally, these land users enjoyed security of tenure and stayed on the land for generations. Sharecropping was widespread, and during the nineteenth century, at least, was the source of most crops that were sold in the marketplace. Most cultivators were small landholders; large estates were comparatively unusual. Slave labor was common for domestic work but very rare in agriculture. Commercialization of agriculture enjoyed considerable development in the eighteenth and nineteenth centuries in order to meet mounting foreign demand and, in the latter period, the needs of an increasing number of Ottoman city dwellers. Ottoman manufacturing, for its part, remained largely the domain of small-scale hand producers,

although there was some mechanization in the late period. Ottoman manufacturers lost most of their existing foreign markets between 1700 and 1800 because of protectionist policies overseas and because of the increasing efficiency of European manufacturers, itself based on a combination of the more ruthless exploitation of labor and mounting mechanization. During the nineteenth century, however, rug making and silk spinning operations, staffed largely with female labor working outside the home, emerged as the most important of the new export industries. Throughout, Ottoman manufacturers retained the important domestic market for their wares. Important technological breakthroughs occurred in transport and communication during the second half of the nineteenth century. Steam replaced sail on the seas. Railroads emerged, but these were mainly in the Balkan provinces that later were lost. Additionally, a fairly thick network of telegraph lines connected most towns and cities by the later 1800s.

Ethnic and Religious Group Relations

The issue of the state's treatment of its non-Muslim subjects and the entire question of relations among the various ethnic and religious communities remains a hotly debated subject today, among both politicians and scholars. Many residents of Ottoman successor states, especially those in the Balkans, look back on the "Ottoman yoke," which they finally shook off. They remember the injustices and forget the toleration of Ottoman rule. Their frequent detestation of the Ottoman era is a sentiment often deriving from nation-building mythologies put in place after the end of Ottoman rule rather than the actual experiences with that administration. As mentioned at the start, until the later nineteenth century, the majority of Ottoman subjects were Christians of one kind or another although the state's official religion was Islam. Here, indeed, is a key to Ottoman longevity—the Ottoman state nearly always functioned as a multinational, multireligious entity

that did not seek to impose religion or define itself in terms of the ethnicity of its subjects. The durability of the empire can be attributed to its toleration of difference among its subjects. And, as long as subjects paid their taxes and rendered obedience, the state protected the expression of these differences. For much of the Ottoman era, it is quite likely that minorities within the Ottoman realms received better treatment than they did in Europe or China. While the Christian and Jewish minorities were second to Muslims, they did have guaranteed protection under Ottoman law, legal assurances that religious minorities in Europe did not possess in Europe. As Enlightenment notions of equality developed during the eighteenth century and later, however, these Ottoman methods seemed less attractive. While, during some years of the final Ottoman era, there were atrocities, these should be understood in the context of the generally admirable record of intercommunal relations over the six-hundred-year life span of the empire. Proof of Ottoman toleration can be found in ethnic and religious maps of the former Ottoman lands. If the Ottoman state had pursued policies of stamping out difference, how can we explain the rich diversity of ethnicities and religions that prevails in nearly all of these present-day countries?

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See also Mehmed II; Osman I

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Pacific, Settlement of

Archaeological evidence shows that humans inhabited most islands of the Pacific by about 1000 CE. The settlement of these islands required longer ocean passages than any voyages made prior to European exploration in the fifteenth century. Long-distance seafaring, patterns of island colonization, and the impact of people on long-isolated and fragile environments are issues significant and relevant to world history.

When Captain James Cook discovered Christmas Island, at the very center of the Pacific Ocean, in 1777, he wrote that there was no trace of any people having been there before him. He was mistaken, for his men had seen some rats, which must have been introduced by humans, and subsequent research shows that Polynesians had colonized Christmas Island five hundred years before its European discovery. In fact, archaeological evidence shows that most of the approximately 1,500 habitable Pacific islands had been settled by about 1000 CE in a series of migrations that required the longest ocean passages prior to the voyages of European exploration in the fifteenth century. The development of long-distance seafaring, the consequent pattern of island colonization, and the impact of people on long-isolated and fragile environments are issues of significance to world history.

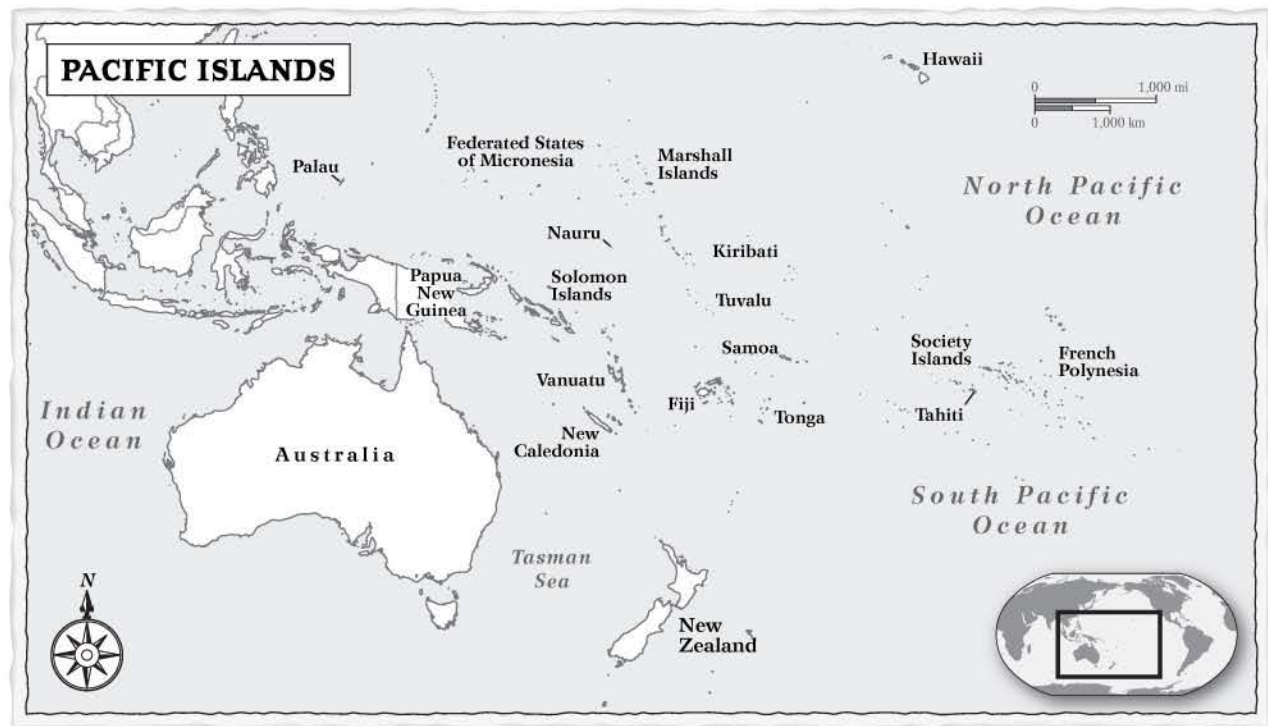
Stretching across one-third of the earth's surface, the Pacific Ocean is vast, varied, and scattered, with perhaps 25,000 islands of all types and sizes, most of them in a wide tropical belt that extends southeast from Indonesia to Easter Island. They were settled in two broad phases of migration. The large islands of Southeast Asia, Australia, New Guinea, and the Solomons constitute "Near Oceania," and they were

first settled during the Late Pleistocene. The generally small islands of Micronesia, eastern Melanesia (Vanuatu, New Caledonia, Fiji), and Polynesia (all the islands in the triangle with vertices at Hawaii, Easter Island, and New Zealand), are known collectively as "Remote Oceania" and were settled first during the Late Holocene.

Pleistocene Migration and Holocene Developments

As sea levels were 120 meters lower in 25,000 BCE, today's Southeast Asian islands as far east as Bali and Borneo, and also Taiwan and Japan, were then attached by dry land to the Asian mainland and inhabited by large placental mammals, including elephants, deer, pigs, and people. Australia and New Guinea, however, formed a separate landmass, known as Sahul, which supported an ancient biota characterized by its marsupial mammals. Between them lay the island-studded sea of the mixed-biotic province of Wallacea. It is possible that some islands, notably Flores, had been reached by the Javan population of *Homo erectus*, which dates to 1.0–1.8 million years ago, but archaeological data suggest initial colonization of Sulawesi, Maluku, Timor, and the Philippines in the period 50,000–35,000 BCE. By 45,000 BCE, Sahul had also been colonized. The migrant populations were undoubtedly *Homo sapiens*, and their modern descendants, such as Australian aboriginals and Highland New Guineans, retain genetic markers that link them to the early diaspora of our species from its African homeland.

Pleistocene maritime technology is entirely unknown. However, as *Homo erectus* was tied almost



entirely to dry land migration, even the modest dispersal of early *Homo sapiens* across Wallacea appears significant by contrast. Natural rafts of giant-bamboo clumps and other materials are quite common in the region and may have been used more by our species than earlier hominids to cross estuaries and lagoons, so that over many thousands of years the chance movement of small breeding units over distances of up to 170 kilometers, as was required to reach Australia, seems possible. At the other extreme from this proposition is the view that invention of formal watercraft, such as canoes and shaped rafts, and even of sailing technology, can be attributed to Pleistocene populations. There is evidence that not only people, but also some useful animals, such as possums and small wallabies, were introduced to new islands as early as 35,000 BCE, and that obsidian tools were being taken from New Britain to New Ireland by 20,000 BCE. Whatever the case, it is important to observe that the maximum achieved passage length remained at about 200 kilometers throughout the Late Pleistocene and Early Holocene. Seafaring may have become more frequent with time, but it did not become more extensive or efficient until the Late Holocene.

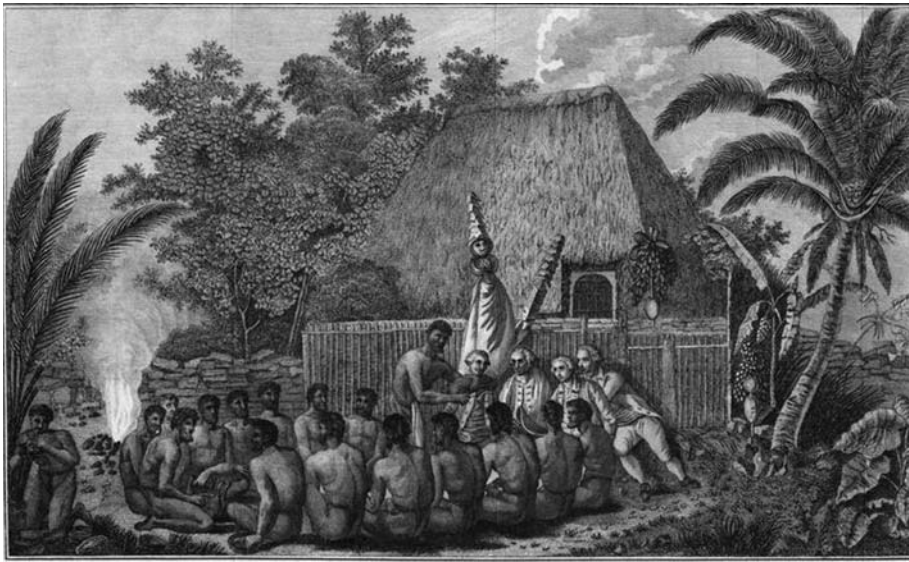
By 9,000–6000 BCE, rising sea levels had divided the Sahul landmass into New Guinea, Australia, and Tasmania, and the isolated populations followed different cultural trajectories thereafter, within

exclusively foraging societies in the latter two regions. In New Guinea, however, there is evidence of the early development of agriculture. Research at the Kuk site, at 1,600 meters altitude in the Wahgi Valley, shows that by the Early Holocene (c. 8,000 BCE), there was systematic exploitation of pandanus (screw pine) and banana, and by 5000 BCE, formal garden mounds and drainage ditches were being constructed. These were probably for cultivation of taro, sugarcane, and bananas, all of which seem to have been domesticated in New Guinea, along with yams and breadfruit.

By the Late Holocene, around 2000 BCE, gardening was probably widespread in New Guinea, and possibly the Solomon Islands, and both the existence of ground-stone adzes suitable for carpentry and evidence of the frequent movement of obsidian around the New Guinea islands indicate that canoes or other ocean-going watercraft existed. In the event, however, it was external influences that were instrumental in propelling the Late Holocene phase of maritime migration.

Settlement in Remote Oceania

Archaeological evidence shows that about 1300–1200 BCE, the older aceramic cultures of the New Guinea islands, notably of the Bismarcks, were largely replaced by a material culture that included pottery,



An engraving from the *Collection of 52 Maps and 133 Plates to Illustrate Captain [James] Cook's Voyages to the South Pacific and North West Coast of America*, published in Holland, 1793–1794.

polished stone adzes and chisels, slate and shell tools, and distinctive ornaments and fishhooks. While at least some of these elements have a long history in the New Guinea region, including shell adzes, shell beads, and simple fishhooks, ceramics were new, and the distinctive red-slipped, dentate-stamped types can be traced to earlier sites in Southeast Asia. In turn, these represent the expansion, after about 2500 BCE, of a Neolithic culture that had its origins around 5000 BCE in South China. This involved the cultivation of rice and millet and the husbandry of pigs, dogs, and chickens.

Cereal cultivation never reached the New Guinea region or anywhere else in Oceania, but the domestic animals and ceramic culture did, and they were probably associated with gardening of taro, bananas, breadfruit, and other crops. Linguistic and genetic data show that this was not just a case of cultural diffusion. There was also substantial migration. People of Southeast Asian ancestry moved into coastal New Guinea and on to its smaller islands and intermarried with the resident people. The immigrant languages of the Austronesian family prevailed, and it was this culturally mixed population that began the second great phase of Pacific settlement.

Between 1000 and 800 BCE, there was a rapid migration from the New Guinea islands southeast to Vanuatu and New Caledonia and east to Fiji, Tonga, and Samoa. Taken from the name of an early site in New Caledonia, this is known as Lapita culture. At some point, not necessarily at the beginning, it

introduced the pig, dog, and chicken, and almost certainly also the cultivation of root and tree crops, into the remote Pacific islands. As obsidian from New Britain is found as far east as Fiji and decorative styles on Lapita pottery changed synchronously, there was either repeated migration or some degree of interaction throughout the region. Lapita was contemporaneous with movement of a similar ceramic culture into western Micronesia, and both represent the beginning of long-distance seafaring in the Pacific. Equally importantly, from Lapita onward eastward migration in Remote Oceania was into islands where hitherto a few species of bats were the highest form of terrestrial mammalian life.

Seafaring and Colonization

A sudden and sixfold increase (to 1,200 kilometers) in voyaging range at about 1000 BCE indicates the advent in the Pacific of the sail, first recorded in China and Egypt by 3000 BCE, and probably also of shaped paddles used for both propulsion and steering, and the development, with vessel controllability, of rudimentary stellar navigation. The evolution of voyaging technology thereafter has been one of the most important issues in the settlement history of Remote Oceania. The traditional view, espoused by the historian Peter Buck, was that early colonists used large, fast, double-hulled canoes that were capable of sailing into the prevailing southeast trade winds. Based on that assumption, modern voyaging



Nine men on an outrigger canoe, near coast of Fiji.
Photo by William Henry Jackson.

researchers, such as Ben Finney, have worked with indigenous seafarers to build substantial double-hulled canoes, notably *Hokule'a*, and sail them around the Pacific to demonstrate the voyaging skills of ancient Polynesians. The performance data gained in these practical experiments were then used in computer simulations, which suggested probable patterns of early maritime migration. The conclusions of this neotraditional research were that voyaging capabilities were sufficiently sophisticated that no part of Oceania remained beyond reach, so that the overall pattern of colonization was broadly continuous from west to east; Lapita colonization reached as far east as Samoa at about 900 BCE, to the Cook Islands in East Polynesia by 500 BCE or earlier, and then throughout East Polynesia by 500 CE.

Recent chronological research in East Polynesia has cast doubt on this hypothesis. Key archaeological sites have provided significantly younger ages than existed in earlier data. For instance, the important Marquesan site—Ha'atuatua, Hane, and Anapua—once dated to about 1 CE are now dated no earlier than about 900 CE, and there are similar results from throughout East Polynesia. Consequently, the pattern of settlement history in Remote Oceania appears episodic rather than continuous, as follows:

1. a very rapid dispersal 1000–800 BCE of red-slipped pottery-using cultures, especially Lapita, into western Micronesia and from New Guinea to West Polynesia;
2. expansion into central Micronesia, probably from the Santa Cruz islands, and colonization of some islands marginal to the eastern Lapita expansion (Niue Pukapuka and Rotuma), about 200 BCE;
3. rapid, aceramic dispersal from West Polynesia into and through East Polynesia at 900–1100 CE; and
4. colonization around 800–600 CE of South Polynesia (New Zealand and outlying archipelagos).

Sailing Downwind

The punctuated pattern of settlement suggests that the assumed sophistication of seafaring in Remote Oceania needs to be reconsidered. So also do linguistic data that show that the term for “double canoe” did not occur before the development of Central Pacific languages, that is after the Lapita expansion, and that there were no terms for either “fixed mast” or “standing rigging.” Early migrations probably used outrigger canoes. In the western Pacific and Southeast Asia, these canoes had lateen rigs historically, but those may not have been introduced to Remote Oceania until about 1200 CE, through the influence of expanding Arabian seafaring technology. In the central and eastern Pacific, Oceanic spritsails were dominant historically, and the early form of these, found in New Zealand and probably the Marquesas, had no fixed mast or rigging. It consisted of two spars, with a triangular sail, apex down, and it was held up only by

wind pressure against sheets held aft. Canoes using it sailed downwind because the absence of side-stays meant that winds on the beam would push the rig overboard. Since historical observations show that more complex rigs, including the lateen sail with its fixed mast, halyards, and balance boards, were only reaching the Central Pacific in the seventeenth and eighteenth centuries, long after the colonization of East and South Polynesia, it can be hypothesized that the New Zealand rig was used throughout Remote Oceanic colonization.

Although quite simple, this rig could be repaired at sea and set in high- or low-aspect shapes. It avoided the massive stresses on gear, especially on fragile pandanus sails of windward sailing, and it could be demounted instantly in high winds or squalls. But sailing with this rig must have been relatively slow and highly dependent on fair winds. The question then arises of how the settlement of Remote Oceania was achieved by vessels that could not sail into the prevailing trade winds.

Westerly winds occur briefly but frequently so they cannot explain the long pauses in the colonizing sequence. However, there was also long-term variation in the frequency of westerly winds of El Niño origin. Proxy measures of the frequency and intensity of El Niño conditions, including long-term records of loess production in China, of changes in ocean circulation, and of sediment deposition in lakes, indicate that El Niño frequencies were unusually high about 3000 BCE, 1400–500 BCE, 400–900 CE, and 1100–1700 CE. Dispersal out of Southeast Asia, the Lapita expansion, and movement into East Polynesia approximate this pattern. They were all largely west-to-east movements. East-to-west movements into Central Micronesia and to South Polynesia occurred at intervening periods during the “normal” pattern of trade wind dominance. In summary, migration in Remote Oceania may have been restricted to downwind sailing at slow average speeds on long passages. Successful voyaging would have been significantly more difficult, with much lower rates of success than is envisaged in traditionalist and neotraditionalist hypotheses. It was probably undertaken uncommonly at times when



This photograph taken in the 1920s by Edward A. Salisbury shows warriors and their canoe on the beach at Vella Lavella, one of the Solomon Islands. The sides of the canoes were beautifully inlaid with pearl shells in intricate designs. Library of Congress.

winds were predominantly adverse, but occasional significant episodes of frequent wind reversals would have provided conditions that enhanced the probability of colonizing success toward the east.

Faunal Devastation

When colonists reached uninhabited islands, they broached ancient and fragile ecosystems with devastating results. The scale of the assault was realized as early as 1843 when remains of extinct giant birds (moa) were found in Maori middens. Evidence of anthropogenic change has continued to accumulate ever since. Extinction of terrestrial vertebrates is widely documented. Large flightless birds became extinct in Pleistocene New Ireland. The giant megapode, or brush fowl; a land crocodile, *Mekosuchus inexpectatus*; and a giant horned tortoise disappeared in New Caledonia, and the giant iguana and megapode in Tonga. Recent research shows that numerous species disappeared with the arrival of people in Fiji. These



included another land crocodile, *Volia athollander-soni*; a giant iguana and tortoise; a giant frog; two large megapode species; another giant megapode, *Megavitiornis altirostris*; and a giant flightless pigeon, similar to the dodo. In New Zealand nearly forty species of birds, including thirteen species of moas, disappeared. This represents a 50 percent decline in the number of bird taxa (taxonomic groups) breeding on the mainland, and similar losses were sustained on Hawaii and elsewhere in East Polynesia, from the central archipelagos to the margins. Extinctions occurred rapidly, although perhaps not as quickly on large islands as the fifty years after human colonization preferred for moa extinction in one scenario. As well as extinction, there was also depletion and range contraction among other taxa. Some seal species occur in the earliest archaeological sites in subtropical Polynesia, but by the eighteenth century, they were found only in New Zealand, where their breeding ranges had contracted almost to the subantarctic under hunting pressure.

These data show that faunal collapse in Remote Oceania was rapid and early. The typical pattern is for remains of extinct taxa to be found in sites that date to the initial century or two of human settlement and thereafter to be absent. Extinction, at least among the larger-bodied taxa, was density-independent, that is, small human populations of widely varying density distribution could still devastate indigenous faunas very quickly. In addition, it is now clear that the process was virtually universal. So much so, that David Steadman estimates a loss of 8,000 species or populations within Oceania generally.

Deforestation

Profound changes also occurred in vegetation patterns. Forests retreated with the advent of people who wanted to create agricultural land and whose pigs, chickens, and rats foraged for seeds on the forest floor. In New Caledonia there was some loss of diversity in forest trees after 1000 BCE, and massive deforestation began by 500 BCE. On Viti Levu, the main island of Fiji, substantial deforestation began about 100 BCE

but earlier on the smaller islands. These data suggest that in the Lapita region, settled by 1000 BCE, there was relatively little initial impact on the landscape, but that massive changes in sediment distribution and vegetation patterns developed as population density increased and settlement expanded inland. Sediment from the hills was eroded into the valleys and redeposited around the coasts, increasing opportunities for agricultural development.

The pattern in the eastern area is less clear, largely because of uncertainty about the timing of initial human colonization. Aceramic East Polynesian archaeology lacks any horizon marker of initial colonization comparable to Lapita pottery. Apparently, anthropogenic landscape changes have been dated to 1500 BCE in Mangaia, Cook Islands, and to 500 CE in New Zealand, Easter Island, and the Societies, using samples from lake sediment cores, but the results are contentious. Recent research in New Zealand shows that lake sediments are often contaminated by in-washing of old soil carbon and that radiocarbon dates are therefore too old.

Landscape change in Remote Oceania appears, therefore, to divide into two patterns. In the large western islands, it was often slow to start and took up to a millennium to assume major proportions. This seems to be a density-dependent pattern that was tracking the progressive expansion of agriculture. In the eastern islands, there was a stronger early impact, probably reflecting the small size of many islands, their very steep slopes and relatively fragile soils, and increased climatic volatility in the second millennium CE.

Island Settlement

Settlement of the Pacific occurred in a series of maritime migrations that began during the Pleistocene and accelerated in frequency and range during the Late Holocene. The movement into and across Remote Oceania probably reflected improvements in maritime technology, the impetus of favorable climatic episodes for sailing, and the utility of agriculture for sustained island settlement. Fragile island environments were altered profoundly by human colonization. Yet, if

extinction on Oceanic islands was catastrophic for biological diversity, exploitation of the abundant and naïve fauna was also an optimal strategy of initial human survival on islands. Such an easy food supply allowed small colonizing populations to grow rapidly and avoid their own possible extinction as quickly as possible. Likewise, substantial deforestation and redeposition of upland sediments opened up the possibility of long-term demographic success by intensive agriculture. Significant anthropogenic environmental modification, in other words, underwrote the successful settlement of most Pacific islands.

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See also Oceania, Ancient

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Paleoanthropology

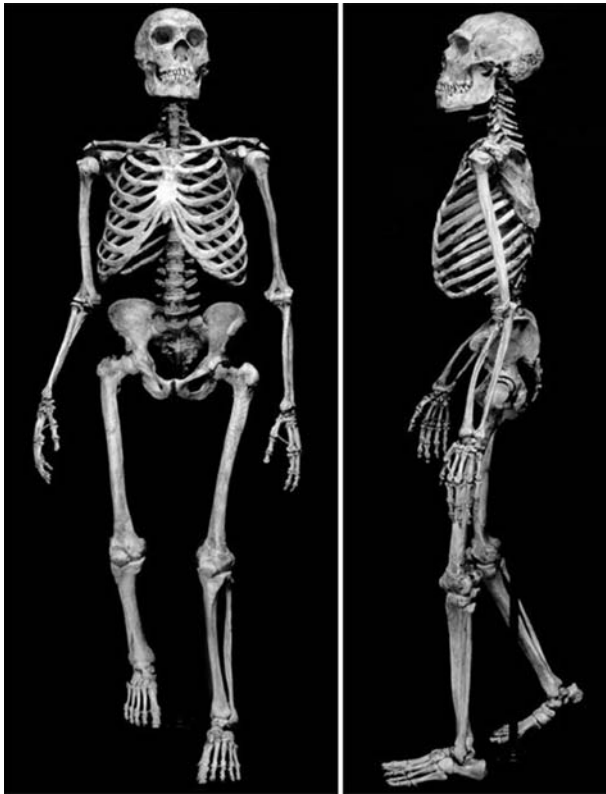
The broad area of science known as paleoanthropology, which seeks to understand the biological and cultural evolution of *Homo sapiens*, takes a largely multidisciplinary approach, with numerous experts—from geochronologists to archeologists and a host of others—involved in field research and the study of the fossil record.

Paleoanthropology is the broad field of science devoted to understanding the biological and cultural evolution of our own species, *Homo sapiens*, and of the zoological family Hominidae to which it belongs. (Hominidae is the family of primates that contains the living *Homo sapiens* and its close fossil relatives—those that are not more closely related by descent to the living great apes: the chimpanzees, bonobos, gorillas, and orangutans.) Central to the practice of paleoanthropology are paleontologists, scientists who study the fossil record that comprises the direct biological evidence of humanity's past; but the field is fleshed out by scientists of many different kinds, including stratigraphers, geochronologists, taphonomists, functional and comparative anatomists, systematists, molecular and population geneticists, archaeologists, evolutionary biologists of various kinds, and a host of others. The notion of paleoanthropology as an essentially collaborative area of science dates back to the early 1960s, when Louis Leakey (earlier in his career the very exemplar of the traditional “lone paleontologist”) and his wife Mary brought together specialists of various kinds to investigate the hominid-bearing deposits of Olduvai Gorge, in Tanzania. Clark Howell, then of the University of Chicago, soon thereafter made the multidisciplinary approach definitive in his explorations of the fossil-rich sediments of the Omo

basin in southern Ethiopia. Since that time virtually all intensive human evolutionary field investigations have included a diversity of experts and have involved collaborations with many outside specialists.

The Nature of the Evidence

The archive of human biological evolution is the fossil record. Fossils consist of the remains of dead creatures that have been preserved in the accumulating geological record. Almost invariably, such remains consist of bones and teeth, since these are the hardest elements of the body and best resist decay and other forms of destruction. The destructive processes themselves are the specialty of taphonomists, who study how remains are scattered and broken postmortem, and how fossil assemblages are accumulated. Fossils of land creatures are preserved within the sedimentary rocks that result from the deposition of eroded particles, principally by water in lakes and rivers. Such sediments are laid down in sequences within which later deposits overlie earlier ones, a process that is reconstructed by the geologists known as stratigraphers. The place of fossils in a rock sequence can determine their *relative* age (older than this, younger than that), but the determination of *absolute* ages (in years) is the province of geochronologists. In their efforts to quantify the time that has elapsed since a particular event (the cooling at the surface of a lava flow, for instance), geochronologists most frequently take advantage of the fact that unstable, “radioactive,” forms of elements contained in rocks “decay” to stable states at known and constant rates. For earlier periods, volcanic rocks (which may be interlayered in sedimentary sequences, and hence give an estimate of the age of fossil-bearing sediments above and below



Front and side views of a Neanderthal skeleton. G. J. Sawyer and Blaine Maley reconstructed this composite skeleton in 2005, using casts of bones from five different sites in four countries.

them) are favorite objects of geochemical dating; in more recent times, actual fossils (e.g., by radiocarbon) or sometimes even artifacts (e.g., by thermoluminescence) can often be assigned dates in years.

The fossils themselves provide information of many kinds. First, they tell us about the variety of hominids that existed in the past. Based on their anatomical similarities and differences, paleontologists first classify fossils into species, which are both the basic *kinds* of organisms and the building blocks of ecosystems. Elementary as it may sound, the sorting of fossils into species is one of the most difficult processes in paleoanthropology, and one of the most contentious. In recent years new methods such as scanning electron microscopy and computerized tomography have helped to enlarge the range of morphologies that can be brought to bear on such problems. Once species are recognized, their genealogical relationships (those due to ancestry and descent) may be inferred. Again, such inferences are normally based on their morphologies and are similarly subject to a variety of

algorithms and approaches. Over the past few decades molecular comparisons among extant species have helped solidify our notions of the relationships among extant species, and hence of the framework within which hominid fossils have to be fitted. In the hominid arena, molecular evidence has served to substantiate the species difference between *Homo sapiens* and *Homo neanderthalensis*, following the recent success of molecular geneticists in extracting short sections of mitochondrial DNA from fossils of the latter.

Further anatomical scrutiny can reveal a great deal about how extinct species may have lived. Particularly when functional comparisons can be made with the structures of extant forms whose behaviors are known, such study allows tentative reconstruction of the anatomically limited (in the hominid case, most importantly locomotor) behaviors of the species concerned. In rare cases, such as the famous 3.5-million-year-old footprints preserved at Tanzania's Laetoli that directly document upright bipedalism at that great remove in time, the inferences made from bony anatomy may be independently confirmed. Our understanding of what our predecessors ate is enhanced by analyses of teeth and of how they wear, and the analysis of stable isotope ratios in fossil bone can further augment our understanding of ancient diets. Further, the examination of associated fossil faunas and floras, and of the geological evidence for the circumstances in which sediments enclosing particular fossils were deposited, can reveal a great deal about the environments in which the creatures of interest had lived and behaved.

In the hominid case, our knowledge of ancient behaviors is vastly enhanced by the archaeological record, which begins around 2.5 million years ago with the invention of the first stone tools. Archaeology, sometimes defined as "the study of ancient garbage," focuses upon the traces—of any and all kinds—of their activities left behind by ancient humans. It is not confined simply to the study of ancient artifacts, but also extends to the ways in which those artifacts were accumulated at particular sites, and to how such sites are located within the landscapes in which they are found. By combining analyses at all these levels, much can be determined about how now-extinct humans



interacted with the environment around them and to a certain extent with each other, though it has to be admitted that even a rich archaeological record is but an indirect reflection of the complex social, economic, and material lives that were led by earlier hominids.

The Human Evolutionary Record

The reconstruction of the human evolutionary past has been greatly influenced by views of the evolutionary process itself. In the mid-twentieth century, most Anglophone paleoanthropologists fell under the sway of the “Evolutionary Synthesis,” a view of the evolutionary process that ultimately ascribed virtually all evolutionary phenomena to gradual generation-by-generation change of gene frequencies in populations, under the guiding hand of natural selection (whereby in each generation those individuals with favorable heritable adaptations reproduce more successfully than those less favorably endowed). This perspective led to an essentially linear view of human evolution, which was seen as involving a slow, dogged slog from primitiveness to our current burnished perfection.

Subsequently, an enlarging hominid fossil record forced the realization that the evolutionary process is more complicated than this, and is subject to a host of external influences, many of which are entirely random with respect to adaptation. The resulting picture of the hominid record is one of diversity, of evolutionary experimentation whereby many hominid species have emerged and done battle in the ecological arena, trying out the many ways there evidently are to be hominid. The story of our family is one of many species originations and many species extinctions. It may seem natural to us today, since this is what we are familiar with, that *Homo sapiens* is the lone hominid in the world; but in fact it is a highly atypical situation, and one that strongly hints that there is something very unusual indeed about our species.

The First Upright Biped

The earliest fossils that have been claimed to lie somewhere in our ancestry, but not in that of the apes as well, come from African sites in the period between 7–6

and 4.4 million years ago. The genera *Sahelanthropus*, *Orrorin*, and *Ardipithecus* are largely known from different parts of the skeleton, and all of them have been disputed as hominids in one way or another—reflecting the fact that as yet we have no clear idea of what the earliest hominid *ought* to look like. What they all have in common, however, is that each genus has been claimed on one slender basis or another to have been an upright biped. In the period between about 10 and 7 million years ago the ancient African forests began to fragment as the climate became less humid and more seasonal, and this clearly provided new ecological opportunities for terrestrial bipeds. Small wonder, then, that this adaptation has become the de facto criterion for membership in Hominidae. However, it still remains possible, even likely, that upright bipedality evolved more than once within the ancestral group from which both living apes and humans are descended.

The best-documented early bipedal hominid species is *Australopithecus afarensis*, known from sites in eastern Africa dating between about 3.8 and 3.0 million years ago. Exemplified by the famous “Lucy” skeleton, this species was small-bodied, standing between about 31½ and 41½ feet tall. Such creatures retained a variety of features useful in climbing, though they show a variety of pelvic and hind-limb specializations for bipedality, and would certainly have moved bipedally when on the ground. Above the neck, however, the proportions of *A. afarensis* were apelike, with a large face hafted onto a small, ape-sized braincase—which is why paleoanthropologists often characterize these early hominids as “bipedal chimpanzees.”

This combination of features was a remarkably successful one, remaining essentially stable as a whole variety of species of such “archaic” hominids came and went over the period preceding about 2 million years ago. Living on the fringes of the forests and in the newly expanding woodlands, hominids like *A. afarensis* probably subsisted primarily upon plant foods, although they may have scavenged the remains of dead animals and hunted small mammals much as some chimpanzees do today.

It was presumably a hominid of this archaic, small-brained kind that first began to manufacture stone tools

We sell more bones to artists than we do to science. • **Ronald Cauble,**
manager of The Bone Room (Berkeley, California)

around 2.5 million years ago. Consisting of small sharp flakes struck from one river cobble using another, these tools were crude but remarkably effective, and must have had a profound effect on the lives of their makers, allowing them, for instance, to detach parts of carcasses and carry them to safer places for consumption.

Early Hominids with Modern Body Proportions

Interestingly, no technological change marked the emergence at just under 2 million years ago of the first hominid species with body proportions essentially like our own. Built for life out on the broiling tropical savanna, far from the safety of the trees, it was most likely the unprecedented mobility of this striding biped, often known as *Homo ergaster*, that led to its almost immediate spread beyond the confines of Africa, best exemplified at the 1.8 million-year-old site of Dmanisi, in the Caucasus.

Technological innovation, in the form of the deliberately shaped “handaxe,” appeared later, also in Africa, at about 1.5 million years ago. During this period there also began a trend toward hominid brain-size increase, although the exact pattern of that increase will have to await better understanding of hominid diversity through this period.

By about 1 million years ago hominids had penetrated Europe and had begun to diversify there in a process that ultimately culminated in *Homo neanderthalensis*. This hominid had a brain as large as our own, albeit housed in a very differently structured skull. Meanwhile, the lineage leading to *Homo sapiens* was evolving in Africa, although this stage in human evolution is poorly—albeit tantalizingly—documented by fossils. Both molecular and fossil evidence suggests that anatomically modern *Homo sapiens* had emerged in Africa by a little under 200,000 years ago, and by around 100,000 years ago such hominids had reached Israel, which was also at least sporadically occupied by Neanderthals around this time. Interestingly, in the period of coexistence between about 100,000 and 50,000 years ago, the Neanderthals and moderns of the eastern Mediterranean region shared essentially the same technology. During this time,

though, we find the first stirrings in Africa of the symbolic behavior patterns that characterize *Homo sapiens* worldwide today.

Shortly after a more sophisticated Stone Age technology was developed in Israel, presumably by *Homo sapiens* whose ultimate origins lay in Africa, the local Neanderthals disappeared, and in short order Europe was invaded by modern peoples, at about 40,000 years ago. These “Cro-Magnons” left behind them an amazing record of virtually the entire panoply of modern symbolic behaviors, including representational and geometric art in various media, music, notation, bodily ornamentation, elaborate burial, and so forth. At the same time, technologies became enormously elaborated and embarked upon a pattern of constant innovation and change. Earlier hominids had adapted old tools to new purposes as environments changed; but cognitively modern *Homo sapiens* typically accommodated to such change by inventing new technologies.

The sequence of events just summarized strongly suggests that, with the emergence of *Homo sapiens* in Africa, an unanticipated ability for symbolic cognition was born. This new cognitive potential was evidently acquired in an emergent event, in which a chance coincidence of biological acquisitions resulted in something entirely new. Made possible by a long evolutionary history, but not an inevitable result of it, the expression of this unprecedented potential (the biological underpinnings of which were presumably acquired in the reorganization that led to modern anatomy) had to await behavioral discovery, much as ancestral birds had feathers for millions of years before discovering they could use them to fly. Most plausibly, the behavioral releasing agent concerned was the invention of language, an activity that is intimately tied up with symbolic thought.

Once the transition to symbolic thought had been made, *Homo sapiens* was positioned to eliminate its hominid competitors such as the Neanderthals and to embark on an aggressive demographic expansion. At this initial stage all human societies were economically based on hunting and gathering; rapidly, however, sedentary lifestyles relying on the domestication of plants and animals were independently adopted in various parts of the world. Sedentarism then led to further population expansion, urbanization,

economic specialization, and the development of complex societies. And it also led to a redefinition of the relationship of *Homo sapiens* to the rest of the world: to what the paleontologist Niles Eldredge (1995, 101) has characterized as a “declaration of independence” from our surrounding ecosystems.

Implications of Paleoanthropology

The study of paleoanthropology teaches us above all that the process leading to the arrival on Earth of *Homo sapiens* was not one of constant fine-tuning over the eons. Rather, our cognitively unique species appeared in a short-term event that was emergent in nature, rather than representing the culmination of any preexisting trend. This entirely unprecedented event witnessed the replacement of a history of highly sporadic hominid innovation, in the context of very low population sizes, by patterns of demographic expansion and restless local invention in both the social and technological realms—even as the inherent limitations of human experience, together with an apparent reluctance to learn from such experience, guaranteed that similar patterns would tend to recur over and again.

Further, the prehistory of sedentary societies almost everywhere shows that technological overintensification has repeatedly combined with climatic vagaries to ensure eventual economic collapse—for reasons that are often due as much to innate human proclivities as to the external proximate causes. Despite its extraordinary ratiocinative abilities, *Homo sapiens* is not an entirely rational creature, and its history worldwide reflects that fact. Evolutionary psychology and other reductionist approaches to the contrary, we *cannot* understand our own history as that of a creature that is biologically perfected for—or even broadly adapted to—any particular way of behaving.

Ian TATTERSALL

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See also Dating Methods, Archeological and Historical; Human Evolution; Universe, Origins of

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Pan-Africanism

Pan-Africanism is a political and social movement that has historically encouraged both a political agenda of African unity and a broad cultural orientation of black identity in Africa and the African diaspora. Its ideology has roots in the early nineteenth century, while its specific political program emerged in 1900.

The roots of the Pan-African movement lie in the ideas and efforts of several key nineteenth-century intellectuals and activists from the United States and the Caribbean. These individuals were responding to the oppressive institutions of slavery, racist discrimination and segregation, and colonialism, as well as to the racial-cultural and psychological oppression and denigration that reinforced these institutions.

Origins and Themes

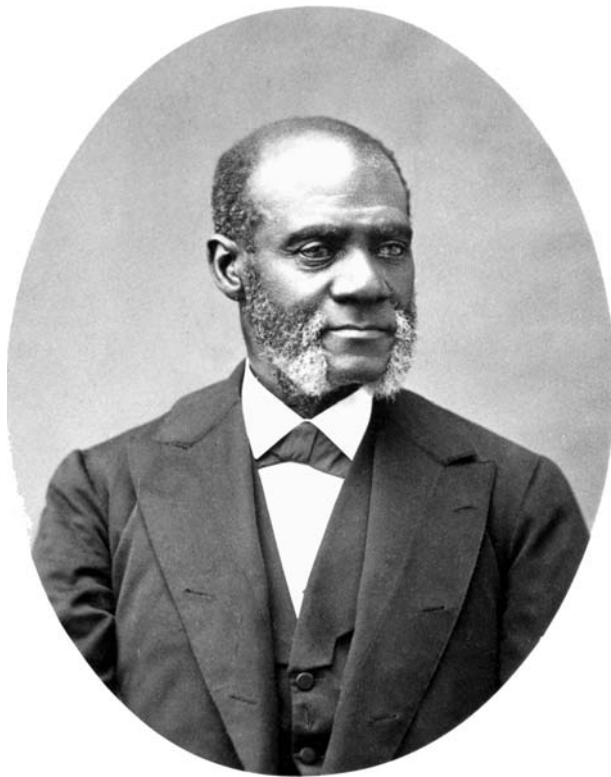
Much recent research has demonstrated the significance of African culture among North American blacks from the time of slavery to the present, while such information concerning Caribbean black culture has long been well known. Thus, it is appropriate to locate the roots of Pan-Africanism in the slave experience itself, as that experience fostered the development of “African nationalism”—an effort by slaves to resist oppression and to “bridge ethnic differences” that “proceeded from an impulse that was Pan-African” (Stuckey 1987, ix).

Black abolitionists such as David Walker (1785–1830), Henry Highland Garnet (1815–1882), Maria Stewart (1803–1879), and Frederick Douglass (1817–1895) used their interpretations of African culture and ancient history from the time of Egypt

and Ethiopia to argue against slavery. They were also all influenced by the redemptive promise of Christianity, particularly as expressed in biblical references to Africa such as Psalms 68:31 (AV): “Ethiopia shall soon stretch out her hands unto God,” in which “Ethiopia” was taken as a synonym for Africa and African Americans. This quotation was widely used into the twentieth century.

Martin Delany (1812–1885), Alexander Crummell (1819–1898), and Edward Blyden (1832–1912) were all primarily black nationalists, though with significant differences. All three actually experienced Africa: Delany traveled to the Niger valley and Liberia while Crummell was a missionary for twenty years in Liberia before returning to the United States, and Blyden emigrated from St. Thomas in the Caribbean to live in both Liberia and Sierra Leone. Delany is credited with originating the phrase in 1861, “Africa for Africans,” one of the later slogans of the Pan-African movement, though the original formulation was actually “Africa for the African race, and black men to rule them. By black men I mean, men of African descent who claim an identity with the race” (quoted in Brotz 1992, 110), which significantly implied a key role for African-American emigrants to help uplift Africa.

Alexander Crummell, like Delany, was a nationalist who also supported small-scale emigration to Africa. But he was primarily a missionary who had very little interest in or knowledge of indigenous African culture and called for the Christianization of Africa in order to “civilize” it. In contrast to Crummell, Delany was much more secular in his approach and advocated the emigration of free blacks to Africa with skills in teaching, medicine, business, transportation and other fields.



Portrait of Henry Highland Garnet (c. 1881). Albumen silver print. Garnet and other abolitionists drew on the redemptive promise in biblical references to argue against slavery. National Portrait Gallery, Smithsonian Institution.

Edward Blyden was the most significant black scholar of the nineteenth century, with complex and sometimes contradictory views of Africa. According to the historian Hollis Lynch, as early as the 1870s Blyden originated the concept of the “African personality,” by which he meant the unique characteristics of African culture and psychology, a notion that presaged the negritude movement of the twentieth century. Blyden had a great influence on West African nationalists and Pan-African theoreticians. In the words of Lynch, “Blyden’s pan-Negro ideology was undoubtedly the most important historical progenitor of Pan-Africanism” (Lynch 1967, 250).

Thus some of the early ideas leading to Pan-Africanism included black nationalism, the idea of Africa for Africans, emphasis by some but not all on a return to the African homeland, and the concept of the greatness of African history and culture, emphasizing Egypt and Ethiopia as black civilizations.

Other aspects emphasized by some included the need to uplift and regenerate Africa through missionary activity in order to fulfill God’s promise as expressed in Psalms 68:31.

Political Pan-Africanism

In his path-breaking and controversial paper, “The Conservation of Races,” delivered in 1897 at the American Negro Academy, W. E. B. Du Bois (1868–1963), who had recently earned his doctorate and Harvard, and who later became known as the father of Pan-Africanism, called upon African Americans to “take their just place in the van of Pan-Negroism” (quoted in Foner 1970, 79). Du Bois called for “race organization,” “race solidarity,” “race unity,” and a spirit of self-help, since “for the development of Negro genius, of Negro literature and art, of Negro spirit, only Negroes bound and welded together, Negroes inspired by one vast ideal, can work out in its fullness the great message we have for humanity” (Foner 1970, 79). Inspired to a large extent by Alexander Crummell as well as by European nationalist theorists, Du Bois in the late 1890s began his transformation first into a race man (a person primarily concerned with African American issues in the late 1890s) and eventually into a Pan-Africanist advocate and organizer.

The most important early political organizer of Pan-Africanism, however, was not Du Bois, but Henry Sylvester Williams (1869–1911), a lawyer from Trinidad resident in London since 1896. He founded a black organization called the African Association on 24 September 1897. The first documented use of the phrase “Pan African Conference” is found in an 1899 letter by Williams calling for a meeting in 1900.

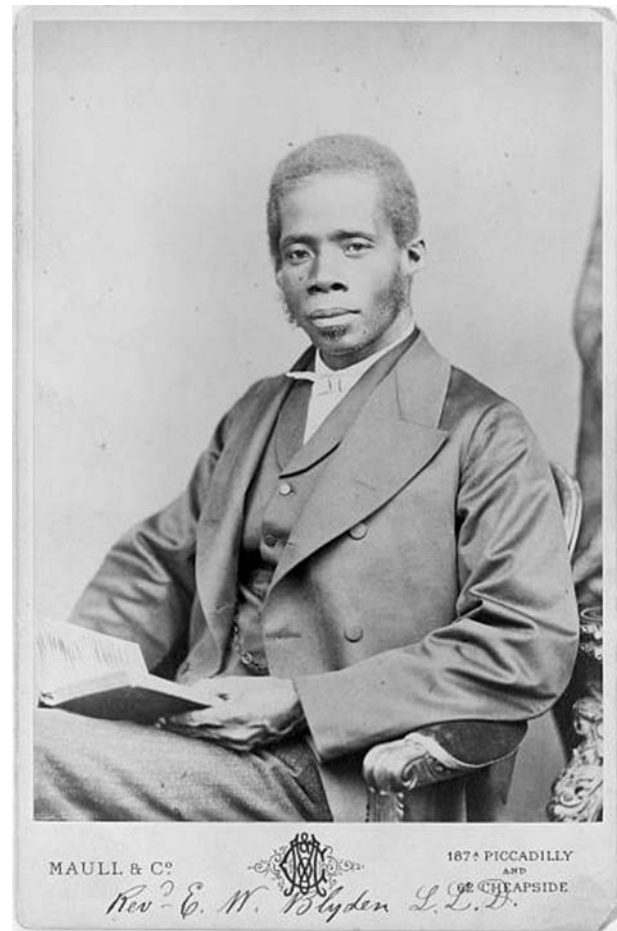
The Pan-African Conference met 23–26 July 1900 in London. Approximately thirty-eight delegates attended from the United States, the Caribbean, and Africa. The delegates agreed to form a permanent Pan-African Association with headquarters in London and branches overseas, and to hold future meetings.

Du Bois was chosen chairman of the Committee on Address, which wrote the “Address to the Nations of the World” adopted at the end of the meeting. The Address contained one of Du Bois’s most famous statements, which later appeared in revised form in his 1903 book, *The Souls of Black Folk*: “The problem of the twentieth century is the problem of the color line” (Foner 1970, 125; Du Bois 1961, 23). The main points of the Address were appeals to end racism and economic exploitation and to “give, as soon as practicable, the rights of responsible government to the black colonies of Africa and the West Indies” (Foner 1970, 126).

This 1900 meeting was thus significant as the first Pan-African gathering, but Sylvester Williams’s tireless efforts did not result in a permanent organization. Williams began to focus on his law career instead of Pan-African organizing, and the people who had promised to follow up on organizing local chapters and the next international conference failed to do so. Consequently, The Pan-African Association was defunct by 1902, and Williams died in Trinidad in 1911.

The practice of convening international Pan-African meetings was revived by Du Bois, who in 1919 organized what he called the First Pan-African Congress (as opposed to conference), which met in Paris at the same time as the post-World War I Peace Conference. The fifty-seven delegates from Africa, the United States, and the West Indies adopted a resolution stating that “the natives of Africa must have the right to participate in the Government as fast as their development permits, in conformity with the principle that the Government exists for the natives, and not the natives for the Government” (quoted in Langley 1979, 740).

The 1921 Pan-African Congress was held in three sessions in London, Brussels, and Paris with 113 delegates. Du Bois delivered the presidential address, and the delegates endorsed a “Declaration to the World” that called for “local self-government for backward groups” (Padmore 1972, 109). A delegation headed by Du Bois presented a petition to the Mandates Commission of the League of Nations calling for the



Portrait of Edward Wilmot Blyden (c. late 1800s). As early as the 1870s Blyden originated the concept of the “African personality,” by which he meant the unique characteristics of African culture and psychology. Library of Congress.

appointment of “men of Negro descent” to the Commission, and for the formation of an “international institute for the study of the Negro problem” (Padmore 1972, 112). (The “Negro problem” referred to worldwide racial discrimination, including colonialism.)

Du Bois was the chief organizer for two more meetings, in 1923 and 1927. The 1923 meeting took place in London and Lisbon. At the London session the resolution adopted demanded that Africans be granted a voice in their government and access to land and resources and that Africa be developed “for the benefit of Africans, and not merely for the profit of Europeans” (Padmore 1972, 118). The 1927 congress, held in New York City, generated no significant new demands.

Du Bois wanted to hold the next congress on African soil and proposed Tunis in 1929, but the French



Portrait of W. E. B. Du Bois. Du Bois called upon African Americans to “take their just place in the van of Pan-Negroism.” Library of Congress.

colonial government refused permission. The worldwide economic depression and the rise of Fascism and Nazism prevented efforts to hold any more Pan-African meetings between 1927 and 1945.

The Garvey Movement

Marcus Garvey (1887–1940), a Jamaican immigrant to the United States, organized and inspired a whole set of Pan-African ideas and activities in the 1920s. His efforts are primarily significant due to his mass appeal, his efforts to stimulate emigration to Africa, and the example he set by forming local chapters of the Universal Negro Improvement Association (an organization he founded in Jamaica in 1914) around the world. In 1918 he founded a paper called *Negro World*, and he held annual conventions of the UNIA beginning in 1920 that aroused great emotional excitement. His movement influenced some future leaders of Africa and the

development of Rastafarianism in Jamaica and the Nation of Islam in the United States. But a steamship line that he started failed, and he was convicted of mail fraud in 1923, served three years in prison, and was deported back to Jamaica. He died in London in 1940.

Ethiopia and Pan-Africanism

The Italian Fascist invasion and occupation of Ethiopia between 1935 and 1941 brought unprecedented worldwide attention to the Pan-African symbol of Ethiopia. The biblical Ethiopia, as in Psalms 68:31, continued to be a symbol for the rising hopes for black freedom, but by the late 1890s African-Americans began to gain more specific knowledge about Ethiopia, the country. One stimulus for this increased interest was the Battle of Adwa on 1 March 1896, in which the armies of the Ethiopian emperor Menilek II (1844–1913) overwhelmingly defeated the invading forces of Italy. As the only military resistance that successfully preserved the independence of an African country in the era of European colonialism, this battle was widely reported in the black press and sparked a tremendous worldwide interest in the country. After Adwa, diplomatic and personal contacts increased between Ethiopians and African-Americans, particularly after the young heir to the Ethiopian throne, Ras (Prince) Tafari Makonnen (1892–1975; known after his 1930 accession as Haile Selassie) sent the first official Ethiopian mission to the United States in 1919.

These increased connections may be illustrated by the career of Malaku Bayyan (or Bayen, 1900–1940). Malaku (Ethiopians go by their first name) attended college in Ohio in the 1920s. In 1929 he entered Howard University Medical School, from which he graduated in 1935. He later stated, “My belief in Race Solidarity caused me to select Howard University for my studies, in order that I might have a closer contact with my people” (quoted in Harris 1994, 22). He married an African-American who was working at Howard, and he traveled back



and forth between Ethiopia and the United States in the 1930s.

After the defeat of Haile Selassie's armies in 1936, the emperor went into exile in England and ordered Malaku "to coordinate the black solidarity movement" in the United States and specifically to take control of the collection of funds for the scattered Ethiopian refugees (Zewde 2002, 206). In 1937 Malaku founded the Ethiopian World Federation and a newspaper, *Voice of Ethiopia*, whose slogan was "Ethiopia is Stretching Forth Her Hands unto God" (Harris 1994, 130). The paper saw itself as the successor to Garvey's *Negro World*, but advocated the use of "black" instead of "Negro" as a term allowing a greater sense of unity among African Americans, West Indians, Ethiopians, and other Africans. It had a clear Pan-African perspective, stating, "We are out to create a United States of Africa" (Harris 1994, 131).

Pan-Africanism Since World War II

Two important supporters of Ethiopia in Britain in the 1930s—George Padmore (1900–1959) and T. Ras Makonnen (1899/1903–197?), a name adopted by George Thomas Nathaniel Griffith in honor of RasTafari Makonnen)—illustrate the Pan-African connections of the Ethiopian and World War II movements. Padmore was born Malcolm Nurse in Trinidad and adopted his new name when he joined the Communist International in the late 1920s, but later rejected the "pretentious claims of doctrinaire Communism" (Padmore 1972, xvi) in favor of African nationalism and Pan-Africanism." Makonnen was from Guyana but claimed Ethiopian ancestry. He lived in the United States, England, Ghana, and Kenya, and acted through a plethora of personal contacts with people of African descent in the diaspora, using face-to-face lobbying and advocacy in cases of police brutality or colonial injustices, thus exemplifying "practical Pan-Africanism."

Makonnen's business acumen enabled him to help finance and organize the Pan-African Federation, formed in 1944 by the merger of several groups, including the International African Service Bureau

that had been formed in 1937 to support Ethiopia. The Pan-African Federation organized the 1945 Manchester Pan-African Congress and continued into the postwar era, as did Makonnen's journal, *Pan-Africa*.

The 1945 Pan-African Congress marked a significant revival of the movement, being the "largest and most representative Pan-African Congress yet convened" (Padmore 1972, 127). Delegates to this congress included some of the leading future political and intellectual leaders of Africa and the Caribbean. At the age of seventy-seven, Du Bois also took an active part in the proceedings.

The resolutions of this congress were more radical than any previous ones. They rejected all euphemisms for colonial rule, such as partnership, trusteeship, guardianship, and the mandate system, demanding "autonomy and independence," and the right of all colonies to be "free from imperialist control, whether political or economic" (Langley 1979, 758, 760).

Political Pan-Africanism after 1945 has consisted of the ultimately contradictory movements for national independence and African unity. Culturally, Pan-Africanism has involved a series of conferences of black writers and artists, held periodically since 1956, and the publication of the journal, *Presence Africaine*. The political movement was led by Kwame Nkrumah (1909–1972), the head of state of independent Ghana from 1957 to 1966. He sponsored two Pan-African meetings in 1958, the Conference of Independent African States, and the more significant All-African Peoples' Conference, the latter described as the "true successor" to the series of Pan-African congresses (Wallerstein 1967, 33).

Julius Nyerere (1922–1999), the leader of Tanzania from 1961 to 1985, supported the cause of liberation in southern Africa, playing a significant role in the Liberation Committee of the Organization of African Unity (OAU), formed in 1963, and hosting liberation movements. He also hosted a Pan-African Congress at the University of Dar es Salaam in 1974. This congress was spearheaded by African-American and Caribbean activists who developed a consensus theme of "self-reliance, self-determination

African nationalism is meaningless, dangerous, anachronistic, if it is not, at the same time, Pan-Africanism. • **Julius K. Nyerere (1922–1999)**

and unity of black people throughout the world” (Abdul-Raheem 1996, 7), emphasizing participation by people’s organizations and liberation movements rather than governments. Yet another Pan-African Congress was held in Kampala, Uganda, in April 1994. By that time, the political independence of the continent was essentially complete, and the congress dealt with such important issues as reparations, economic development, democracy, social problems, science and technology, and the women’s movement.

These issues and others reflecting the realities of Africa today show the continuing need for Pan-African based actions. Though there is as yet no United States of Africa, there is a growing recognition among African leaders and thinkers that Africa must unite in some form. At present, there are at least twelve economically based regional groups, such as the Economic Community of West African States, the Common Market for East and Southern Africa, the Economic Community of Central African States, and the Southern African Development Community. Moreover, the OAU has been transforming itself into the African Union during the last several years, and has stated an aim of creating an African Economic Union in the next two decades. Achieving the increased unity needed to deal with internal African problems may be the most significant hurdle of the current Pan-African agenda. Although Africa and the African diaspora have made great progress in the last two centuries, work remains for Pan-Africanists and their supporters in the present and the future.

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See also African Union; Du Bois, W. E. B.

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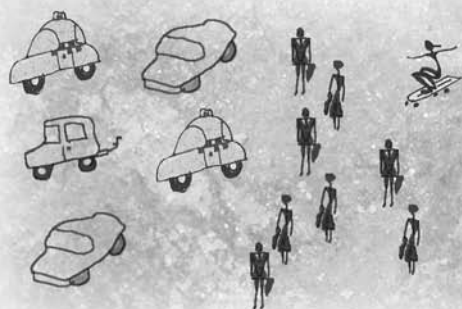
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Paper

The secret of manufacturing paper, which originated in China, spread with printing; before long, printing on paper enormously increased the flood of information sustaining the world. Rags and vegetable fibers were first used to make paper; since the nineteenth century, whole conifer forests have been felled to supply enough wood pulp to meet papermaking demands.

Paper, a thin, felt-like material made of cellulosic fibers from plants, is widely used around the world for writing, drawing, and wrapping. The English word *paper* derives from the similar material used by ancient Egyptians, Greeks, and Romans: papyrus.

Antiquity

Predecessors of paper, known by the generic term “tapa,” are found in nearly all cultures in the equatorial zone and are used also for decorating and clothing. They are produced by beating the inner bark of plants such as the paper mulberry, fig, or daphne. In ancient Egypt, papyrus was made accordingly from the pith of the papyrus plant.

The oldest papermaking technique—still in use in a few locations in the Himalayas, China, and Southeast Asia—derives from a combination of this pounding technique and felting techniques (felting involves pressing together materials so that they adhere to form a large whole). To make a pulp, plant bark that has been cooked is beaten with a wooden hammer to form a thin fibrous layer that then is dissolved in a vat with water. The papermaker pours the quantity of pulp needed to make one sheet onto

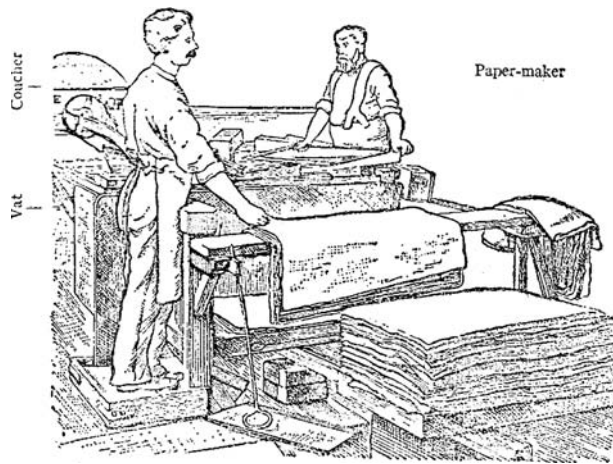
a mold consisting of a wooden frame with a fabric or bamboo screen and spreads it with his hand evenly across the screen. The mold is lifted carefully; the water drains off and a sheet of paper forms on the screen. Then the mold is placed in the sun or near a fire to dry. When dry, the sheet easily peels off the screen and, apart from possible smoothing, requires no further treatment.

As recent findings of very old paper in Chinese tombs show, paper has been produced in China ever since the last two centuries BCE. In 105 CE, the court official Cai Lun allegedly invented papermaking from textile waste (that is, rags). This was the birth of paper as we know it today. Chinese papermakers developed a number of specialties, including sizing (making the paper ink-proof), coating, and dyeing. They introduced bamboo as a fiber plant, beating it after cooking it in lye. Paper served for such diverse purposes as writing, drawing, wrapping, clothing, protection from weather, decoration, windows, and even for balloons and kites. Last but not least, paper was used for special currency to be burned in honor of the ancestors.

The Spread of Papermaking

Chinese papermaking techniques reached Korea at an early date and in 610 were introduced to Japan, where papermaking was becoming a skilled craft. The ultimate was the production of *shifu*, paper yarn woven into beautiful fabric.

Knowledge of papermaking also spread from China to Central Asia and Tibet, and then on to India. The Arabs, in the course of their eastern expansion, became acquainted with the production



Making paper by hand requires dipping a mold into a vat of pulp and lifting out just enough to make a sheet of the desired thickness.

of the new writing material near Samarqand, and paper mills were subsequently set up in Baghdad, Damascus, Cairo, and later in Morocco and Spain. Using screens made from reed, the Arabs made thin sheets of rag pulp and coated them on both sides with starch paste, which could be colored. This gave Arab paper its good writing properties and its fine appearance. Arab technique spread into medieval Europe, and European innovations, especially the paper machine (multiplying the production rate), spread throughout the world during the nineteenth century.

European Handmade Paper

In medieval Italy, papermakers from Genoa, Fabriano, and Amalfi tried to improve on the Arab technique. Their innovations included the use of water power, stamping mills (derived from fulling mills, which shrank and thickened cloth) to pound the rags, molds made of wire, couching (setting the forming paper on a felt to be pressed), the screw paper press, dip sizing with animal glue, and a production process based on division of labor.

Three kinds of paper were produced: writing paper, printing paper (mostly unsized), and cheap wrapping paper, also used for drafts. Printing paper caused the evolution of the graphic arts (woodcut; engravings). Work at the vat normally involved four people: the vatman, who made the sheet using the mold; the couchman, who worked in time with the

vatman, placing the sheet on the felt; the layman, who removed the moist sheets from the felt after pressing; and the apprentice, who had to feed pulp to the vat and keep the vat heated. Up to nine reams (4,500 sheets) of paper could be made during a working day averaging 13 to 15 hours.

Technical progress continued. In the sixteenth century, hand glazing (polishing) using a glass or stone burnisher was supplemented by the use of the glazing hammer similar to a forging hammer. Toward the end of the seventeenth century a much more efficient tool, the so-called hollander beater, supplemented or even replaced the stamping mill.

Watermarks

The watermark, invented in medieval Italy, provides the historian with an unsurpassed dating and authenticating tool. The real watermark, a figure in the paper sheet, is seen by the naked eye. In hand papermaking, it is formed by a curved wire that is sewn onto the screen of the mold; the wire reduces the thickness of the sheet, thus making the figure transparent. Later, after the invention of the paper machine, a roll covered with wire gauze impressed the watermark on the wet paper web. The watermark serves as a papermaker's trademark. By comparing a watermark with others of a certain date or origin, the paper historian is able to determine age and origin of a document or print. Shadow (countersunk, embossment, intaglio) watermarks are produced on a mold that carries a fine, embossed woven wire, and appear as images, like a black-and-white photograph.

The Advent of Industrial Papermaking

From the sixteenth century, paper became more and more important for administrative and commercial purposes, and, as more people were trained in writing and reading, for private use, too. The debates of the church reformers and new works of science were widely published by printing on paper, and popular pamphlets, romances, and plays were distributed in print all over Europe. Newspapers, which from the

beginning of the seventeenth century had come out with weekly issues, changed during the eighteenth to a daily format, and became—censored by the government in most countries—the sole means of shaping public opinion and spreading news of scientific progress. The ideas of the Enlightenment and of the French Revolution were supported by the development of the print mass media at the end of the eighteenth century.

Further developments in printing during the eighteenth and nineteenth centuries resulted in a steeply rising demand for paper, especially for new printing grades. This and the tremendous upsurge in papermaking soon led to a serious shortage of raw material and to regulations governing the trade in rags to ensure the local production of paper for administrative purposes. The systematic search for substitute pulping materials met with little immediate success.

Already in the eighteenth century, there had been some concentration of handicraft activities in big factories, which still depended on skilled papermakers organized in open guilds. Efforts to step up production and to have many jobs done mechanically culminated in the design and construction of paper machines. A Frenchman, Nicholas-Louis Robert (1761–1828), built the first paper machine using an endless wire screen, patented in 1799. It was further refined in England by Bryan Donkin (1768–1855) and by Henry (1766–1854) and Sealy Fourdrinier (d. 1847). Soon, other types were developed, such as the Dickinson cylinder machine. Fourdrinier-type and cylinder machines gained ground in the nineteenth century and were extended to include a dryer section; the technology steadily improved, leading to considerable increases in production speeds. With the increasing industrialization of papermaking, small operators who were unable or unwilling to pay for machines were forced to survive with piece work or by producing special grades and cardboard, but they were sooner or later compelled to discontinue their activities.



A Chinese papermaker at work.

The decisive turn in developing the U.S. paper industry was initiated by Joshua Gilpin, who in 1815 brought from England not only the plans of the Dickinson cylinder machine but also Lawrence Greatrake, a leading paper engineer. Special paper machines were successfully built (including the so-called Yankee cylinder machine), and soon the United States led the world in paper production and in per capita paper and board consumption (more than 300 kilograms per year in 1980).

The industrialization of papermaking was marked by some definite trends. First, all work sequences previously performed by hand were mechanized, thus steeply raising the demand for energy. Then, efforts were made to obtain rag substitutes on an industrial scale, and appropriate industrial plants were developed. Straw was suggested as a raw material but proved unsuitable because it produced low-quality paper. Only the 1843 discovery that one could use ground wood pulp, followed by the invention of chemical pulp (first patents in 1854), solved this problem. Pulping (the extraction of fibers from wood by mechanical or chemical means) became an industry of its own. Just from its start, two big problems arose: wood grinding produced fibers of minor quality, prone to decay in a short term, especially if applied together with acid rosin size. Thus, most books and newspaper produced between 1850 and 1980 containing

*I put a piece of paper under my pillow, and when I could not sleep
I wrote in the dark.* • **Henry David Thoreau (1817–1862)**

wood pulp are endangered and need conservatory treatment. Because of heavy water and air pollution, chemical pulping plants were—already in the nineteenth century, together with the then newly founded chemical plants producing synthetic dyestuffs—the first targets of popular ecological movements and legislation. A further stage was marked by the enlargement of the web width (*web* is the term for the continuous sheet of paper produced in mechanized paper mills), an increase in working speeds, the introduction of electric drive, and the development of machines designed specifically for the production of particular paper and cardboard grades. Web working width grew from 85 centimeters in 1830 to 1,100 centimeters in 1990, while production speeds rose from 3 to 5 meters per minute in 1820 to more than 2,000 meters per minute in 1995. Consequently, paper prices dropped, leading—starting also in the nineteenth century—to the production of very cheap booklets and magazines intended for a growing literacy of peoples around the world.

Alongside the development of printing, new paper grades were created, together with specialized paper such as punch cards, stand-up collars, tube papers, flong (stereotyping paper), pergamyn (parchment imitation), ammunition papers, envelopes, tobacco paper, toilet paper, and so on. The use of new materials (thermomechanical pulp, deinked waste paper, new fillers, process chemicals, and dyes) and new sheet-forming techniques, neutral sizing, greater stress on ecology, and—most effective—automation brought further improvement.

Paper Today

Paper consumption grew from medieval times to the end of the eighteenth century by a factor of fifty. Since then, paper and board has become a worldwide, large-scale commodity with exponential growth. Statistics from the United Nations' Food and Agriculture Organization (FAO) have led to a forecast of about half a billion tons in 2010, of which about two-fifths

will be produced in the fastest growing industrial market, Asia.

Technical and commercial changes have led to specialization in certain paper types, development of new paper grades, and new commercial entities and structures brought about by corporate mergers or by company groups with their own raw-material supply and trading organizations. The evolution of new sheet-forming principles and chemical pulp processes, along with increased demand in the global market (especially in developing countries), trends in chemical pulp prices, and location problems are again increasing the capital needed to be a successful competitor, which in turn is leading to the formation of big company groups with international operations. Papers for technical use form an increasing market.

Environmental problems have led to changes, too. Introduction of new forestry principles, fiber recycling from waste paper, heat recovery, closed water circuits, and replacement of aggressive chemical processes in pulping have improved the formerly poor image of the pulp and paper industry. Up to 60 percent of the total fiber consumption is covered by waste paper, thus saving forests from over-cutting. Modern papermaking processes are running quicker, consuming less water and energy, minimizing pollution, and are again producing long-lasting paper.

The electronic revolution in data processing and private and public communication appears not to be affecting reliance on paper and probably will not until an easier-to-handle, more lasting, cheaper storage medium for the memory of mankind is found. Even then paper will remain a ubiquitous helper (for example, in packaging and hygiene) in daily life.

Peter F. TSCHUDIN

The Basel Paper Mill, Swiss Museum of Paper

See also Libraries; Mass Media; Printing; Writing Systems and Materials

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Parliamentarianism

Parliamentarianism, as it originated in eighteenth- and nineteenth-century Britain, gave power to elected representatives in the legislative branch of the government, securing property rights for the landed gentry and diminishing power of the absolute monarchy. It aimed to stabilize government administration and provide orderly transfer of power, both at home and in British colonies. The Industrial Revolution and the growing power of trade unions contributed to its decline, although a modified form of the system exists in Canada, Israel, Scandinavia, and the European Union.

As an organizing principle of a governance structure, *parliamentarianism* comes from modern Britain and is an early variant of constitutional monarchy. It designates a functional, relatively free, civic framework that seeks harmony and prosperity through preventing or managing political conflicts while endowing real power in the legislative branch, which, in turn, represents the will of the people (or, initially, the males who owned considerable property).

Parliamentarianism assured a high degree of stability while diminishing the ruling capacity of absolute monarchy. In its positive and preferred form, the expectation is that an accountable and incumbent sovereign government will enjoy the expressed will of a working majority of elected representatives. A lesser, negative option demands that, if a minority government exists, it will be supported, or at least tolerated, by the legislature, as demonstrated by the government's not being defeated in routine votes. Parliamentarianism guarantees that authority and power is possessed and is operational at all times,

avoiding long periods of caretaker, unstable, or interim regimes.

The framework is akin to that of constitutional monarchy, but with rule-based parliamentary tradition and unwritten political conventions as the pivot of democratic life, rather than chartered documents or explicit regal prerogatives. The legal foundation of this structure is a substitute for a written constitution, which most kings and queens opposed as it would explicitly constrain the powers vested in their office and their public influence. Concomitantly, parliamentarianism assured the elite, political class of substantial impact on the routine formation and implementation of economic, social, diplomatic, and defense policies.

In the British system the governing party, as long as it has an effective mandate between elections, wields executive powers, composing and leading the cabinet. The term of office could last up to five years, but it typically was around four years. Within the maximum of five years that a parliament could be incumbent, it was at the discretion of the prime minister to ask the monarch to dissolve the House of Commons. Indeed, the full authority and the wide discretion exercised by the incumbent prime minister were at the heart of this system. Having the distinction of being the leader of the largest party and the most prominent member of Parliament from the House of Commons, the prime minister increasingly served as a viable substitute for the reigning monarch. Parliamentarianism thus accommodated the rise of the professional, urban, unhereditary, non-land owning, upper class by transferring political power to them from the monarchy and aristocracy.

The loss of an important vote—the approval of an annual budget or the ratification of vital domestic measures or crucial agreements with other



countries—causes the instantaneous resignation of the prime minister and his cabinet and/or the immediate calling of new elections. This pattern though not written down, served as a binding convention in the British political culture. Securing a new mandate from the voters was essential even if only a short time has elapsed since ballots were previously cast. New elections were scheduled immediately. Campaigns lasted a few short weeks. The transfer of power from the defeated party to the winning one, if the election results dictated that, was a speedy process amounting to only days after results were officially proclaimed, which, in turn, was also obtained within days.

History

The Glorious Revolution of the seventeenth century capped a political process that began with the Magna Carta of 1215, the result of widespread resentment of the absolute, authoritarian aspirations of the monarchy. Aristocrats and members of the upper middle class had increasing authority in England, then in the rest of Britain, and, eventually, in its colonies overseas, deciding most issues of public policy. The balance of power gradually shifted to the landed gentry and to an emerging group of liberal urban professionals (the Whig party) who supported the ideas of classic liberalism and were active in society, economic life, intellectual discourse, and diplomacy. Political supremacy, sometimes cloaked in civic and economic rights, was thus increasingly based on a mandate that the legislative chamber increasingly defined the duties and the privileges of kings and queens.

The pattern of vesting real power in members of the British Parliament aimed to revitalize representative government while securing property rights. It developed in the eighteenth and nineteenth centuries. Coupled with the first post-the-ballot electoral structure—which granted seats for the candidate with the highest number of votes in each district, rather than apportion them to parties by the percentage of votes received overall—the typical result

was a two-party system. Inside the bicameral legislature the House of Commons gradually replaced the House of Lords as the senior partner within the structure of enacting and implementing legislation. This change positioned parliamentarianism at the center of government life and bureaucratic transparency (bureaucrats and their acts were subject to Parliament's consistent review and assessment) in the United Kingdom.

The absolute control of the British government was alternately held by the Liberals (Whigs) or the Conservatives (Tories), rather than by a third party or a wide coalition, even during prolonged wars. Dominant prime ministers included the Conservative Benjamin Disraeli (1804–1881) and the Liberal William E. Gladstone (1809–1898), who alternated in power during the second half of the nineteenth century.

Impact

While practically guaranteeing an unbreakable sequence of stable administrations and an orderly transfer of political power, there were severe consequences to this scheme. Civil service positions, especially those of permanent undersecretaries, became very influential as it was the people who held these positions continuously who ran governmental departments. These position holders came from the ranks of prominent families and elite schools. They largely represented the interests of the upper classes, which were naturally disposed to inhibiting reforms or repudiating radical alternatives. Prime ministers could, and sometimes did (especially around the middle of their terms), shuffle portfolios among different officials, even within the same cabinet, decreasing the tenure of ministers in the same position. As a result, long-term bureaucrats often decided policy issues, not merely implemented them. Furthermore, this conservative hierarchy was considerably less sensitive to sectarian interests, the advancement of economic reforms and social mobility, and the well-being of colonial communities, or else subordinated these concerns to the concerns of major factions and large corporations based in the British Isles.

American Dissent

Settlers in North American colonies during the 1760s and 1770s increasingly resented this rigid framework. It deprived them of adequate access to decision-making that concerned their daily lives. This pattern was epitomized in the slogan “no taxation without representation” adopted by Benjamin Franklin (1706–1790), who was well acquainted with the British, having lived in London. He led the movement that also vigorously opposed the “virtual representation” system, which allowed well-connected politicians access to legislative power although they did not have any constituencies (representing “corrupt boroughs”), then prevalent in Britain. Furthermore, the subsequent U.S. system of a balance of powers (“checks and balances”) among the three branches of government—executive, legislative, and judiciary—and the relative independence of the presidency from Congress, as drawn up in a written constitution, were, in part, responses to the perceived excesses and shortcomings of parliamentarianism.

Irish Exclusion

Ostensibly, Irish Catholics, British subjects until the 1920s, had power equal to that of other voters. In reality, however, they were misrepresented by the politics of the British system, including the property requirements that limited suffrage. Their distinct ethnic and religious interests, moreover, were either left to sectarian parties that did not have realistic chances of reaching power nationally or were subsumed by parties whose main constituents were English and Irish Protestants. This lack of representation was one of the major reasons for the demand for Irish home rule in the nineteenth century, subsequently leading to independence after World War I.

Decline of Parliamentarianism

The impact of the Industrial Revolution in Britain changed the internal political structure, beginning in the mid-nineteenth century. In the early 1900s the



Oliver Cromwell, a key figure in the English civil wars, was a member in 1640 of Charles I's Short (three-week) Parliament and Long Parliament (so named because it could only be dissolved by the agreement of its members).

Victorian age passed with Queen Victoria, who was succeeded by mediocre, much less impressive monarchs. The concomitant rise of trade unions and the Labour Party representing the wider franchise of the working classes and non-English elements (such as the Scots) within Britain broke the hold of the traditional, wealthy establishment. Culminating a process that had lasted decades—and with the turmoil of World War I (1914–1918) and the rise to power of the Labour Party—power shifted away from the restricted halls of Parliament into the more public arena.

Nevertheless, a modified form of the British parliamentary system continued in existence, especially in the developing world, in countries that used to be controlled by the British (the “Westminster System”). Westminster is the British system of a democratic, deliberative, representative parliamentary in control of state affairs through a government formed by the party that has a majority in Parliament and an independent judiciary. In a pattern similar to that leading

to the creation of U.S. institutions, this democratic legacy of colonialism is in competition with the American hybrid of checks and balances between a Congress and a president, both of whom are directly elected by the people, rather than a prime minister selected by a Parliament.

Scandinavia

Although Scandinavia was never a part of the British Empire, there was enough awareness of and affinity with Great Britain—through commercial connections and geographical proximity—that the result was that unique versions of parliamentarianism as an organizing principle within constitutional monarchies developed.

Sweden

In Sweden the framework was put into place in 1907, with a parliament, the *Riksdag*, as the focal point of political power. This emulation of the British system was a major part of wide reforms that introduced universal franchise and aimed to neutralize class antagonism and tensions between growing urban and rural populations. Unlike those in Britain, however, many governments in Sweden have been coalitions of at least two parties, making them inherently less stable.

Norway

Norwegian independence from Sweden was peacefully secured in 1905. Through the subsequent written constitution, a form of parliamentarianism was adopted; it was strengthened after occupied Norway regained its sovereignty in 1945, following Germany's defeat in World War II. The monarch, although occupying a hereditary position, has to pledge an oath to uphold the constitution and the laws of Norway, which provide for a universal franchise. After an election, the monarch appoints the leader of the largest party in Norway's parliament, the *Storting*, as the prime minister,

who then forms a government—if need be, a coalition that enjoys a working majority. Members of the cabinet are formally selected by the monarch but are nominated by the prime minister. Elections are customarily held every four years; the *Storting* can be dissolved earlier, but not during in its fourth year.

Israel

The State of Israel was created by the United Nations in 1948 out of the British Mandate of Palestine. Close to three decades of British control left its mark. A government cannot be established or survive unless it receives and maintains a working majority in the *Knesset*, Israel's parliament. In a role analogous to that of the British monarch, Israel has a president serving as titular head of state, one of whose major responsibilities is to designate a prime minister. A loss in a no-confidence vote does cause the fall of the government, but it does not trigger new elections without a specific law dissolving the current *Knesset*. Until a new cabinet is sworn in upon receiving confidence from the *Knesset*, the outgoing prime minister has full authority.

Caretaker regimes can remain in office for a relatively long duration. In March 1990, when the national unity alliance between Labor and the right-wing Likud collapsed over disagreements concerning the Arab–Israeli peace process, Prime Minister Yitzhak Shamir (b. 1915) took three months to form an alternative coalition. Between 1996 and 2001, a mixed system existed, under which two ballots were cast: one for a prime minister, the other for a party. The elected leader could start ruling only after forging a coalition that commands a majority in the *Knesset*.

In July 2000, following his controversial offers for peace with the Palestinians, Labor's Ehud Barak (b. 1942), who was elected in the previous year with a convincing individual majority (56 percent as compared with Likud's Binyamin Netanyahu's 44 percent) but with a weak party following (the one Israel bloc he led garnered merely 26 of 120 seats)



lost most of his coalition partners, thus the plurality in the Knesset. Nevertheless, because there was no absolute majority to topple him, Barak was only forced to call personal elections in December 2000 for February 2001. He remained as a prime minister one more month, even after his resounding defeat (38 percent to 62 percent) to Likud's Ariel Sharon (b. 1928).

Canada

Canada is a former British colony. It slowly became independent from 1867 to 1948. It is a leading member of the British Commonwealth, has adopted parliamentarianism, and the British monarch is the titular head of state. Canadian federalism allows a strong degree of autonomy to provinces. The federal parliament represents, almost proportionately (some preference to the Atlantic region that has a smaller population), the Canadian people. There is also an unelected Senate, to which the Prime Minister appoints by patronage, obviously a duplication of the British House of Lords. There were plans (like the 1992 Charlottetown Accord) to reform the system, but to no avail.

A particularly intriguing example of the workings of parliamentarianism can be found in the short tenure of Progressive Conservative Prime Minister Joe Clark (b. 1940). Clark led a minority government, after defeating in 1979 the former Liberal prime minister, Pierre Elliot Trudeau (1919–2000), who had served as PM for eleven years. Clark was supported by several independent right-wing members of Parliament from western Canada. In February 1980, after only eight months in office, Clark failed to secure sufficient support for his first annual budget. He was compelled to ask Canada's governor-general (the vice regal representative appointed by the British monarch) to dissolve the federal parliament. Clark lost in the ballots cast the following month, and Trudeau became, again, the prime minister, after only nine short months in the opposition.

Contemporary Europe

The European Union (EU) had grown from a French vision in 1950, and a humble start in which Britain did not partake, in the 1957 Treaties of Rome. The EU has become a continental powerhouse with complex institutions and a hybrid of structures. The EU is gathering more political momentum, adding new members, incorporating territory in southern and Eastern Europe, consolidating its laws, and proclaiming constitutional powers. The EU is increasingly independent from the countries that make up its rapidly expanding ranks. Parliamentarianism may become its guiding principle on the road to securing popular support for strong federalism. The formation of the European Parliament, as a body whose members since 1979 are directly elected and often represent ideological agendas and continental (rather than national) interests, also balances the influence of local politicians and state governments. While competition for authority will continue, real power seems to increasingly to be vested in an institution whose structure and procedures may resemble the traditional role of the British House of Commons, although the vast majority of EU members do not have a tradition of parliamentarianism.

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See also Democracy

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Pastoral Nomadic Societies

Pastoral nomadic societies view the husbandry of grazing animals as an ideal way of making a living and consider the regular movement of all or part of their societies to be a normal part of life. Although this lifestyle produces a low population density, and the total number of nomads has always been relatively small, the impact of nomads on world history has been profound.

During two thousand years (500 BCE–1500 CE) the horse-riding nomads of the Eurasian steppes (usually level and treeless tracts of land in southeastern Europe or Asia), such as the Scythians, Xiongnu, Huns, Turks, and Mongols, created powerful states that presented significant challenges to their sedentary neighbors in China, Central Asia, Iran, Turkey, and Europe. The camel-raising desert Bedouins became key political actors in the Middle East and northern Africa after the rise of Islam during the mid-seventh century. In sub-Saharan Africa cattle-raising nomads such as the Masai and Zulus came to dominate much of the continent's grasslands by the end of the nineteenth century. These pastoral nomadic societies considered the husbandry of grazing animals a viable way to earn a living, and the habitual movement and relocation of their communities as a normal part of their lives.

Origins

Early theorists saw pastoral nomadism as evolving out of hunting and into sedentary agriculture. Archaeological evidence has largely upended this view because the first domestication of both plants (wheat and barley) and grazing animals (sheep and goats)

apparently took place in parallel more than nine thousand years ago in the Near East. Thus, rather than being a precursor of sedentary life, pastoral nomadism more likely developed as an economic specialization out of a mixed Neolithic (8000–5500 BCE) economy based on sedentary villages after 5000 BCE. The viability of such a nomadic specialization increased with the later domestication of cattle and more particularly with the domestication of baggage animals such as donkeys, horses, and camels. Only with the domestication of baggage animals or new technologies such as cattle-drawn carts and wagons beginning in the Bronze Age (c. 4000–3000 BCE to the Iron Age) were nomads able to effectively utilize truly mobile dwellings such as black goat-haired tents (yurts).

Recent ethnographic (relating to the study of cultures) work has largely discredited the notion of the “pure nomad” who subsists entirely on pastoral products, free of entanglements with the sedentary world. Historically pastoral nomads have always been tied economically and politically to their sedentary neighbors. Without such ties they could not easily survive.

Why Pastoralism?

Pastoral nomadism is commonly found where climatic conditions produce seasonal pastures that cannot support sustained agriculture. Because people cannot eat grass, exploiting grazing animals that can eat grass effectively taps an otherwise unusable energy source. Although historians generally use the terms *nomads* and *pastoralists* interchangeably, the terms are analytically distinct. The former term refers to movement and the latter to a type of subsistence.



Well-fed sheep on Golodnaia Steppe. Photo taken between 1905 and 1915 by Sergei Mikhailovich Prokudin-Gorskii. Library of Congress.

Not all pastoralists are nomadic, nor are all nomads pastoralists (hunter-gatherers or itinerant groups such as Gypsies).

Using portable tents or huts to facilitate migration, pastoral nomads rotate their animals through extensive but seasonal pastures. Migration cycles vary in time and length depending on local conditions. Nomads make relatively few moves when pastures and water supplies are dependable, many more moves when they are not. Although the degree of predictability in migration routes varies from group to group, pastoral nomads do not “wander”; they know where they are going and why.

Organization and Distribution

Pastoral nomadic societies are organized around mobile households rather than individuals, and everyone (men, women, and children) has a role in the various aspects of production. These characteristics distinguish pastoral nomads from European shepherds or U.S. cowboys who are recruited from the larger sedentary society to which they regularly return. All pastoral nomadic societies share such structural similarities as tribal organization and a strong bias

toward patrilineal (through the paternal line) descent and residence.

Pastoral nomadic societies are confined to the Old World. The only area of indigenous large-animal domestication in the New World was the high-mountain Andes in South America, where llama-raising communities were integrated parts of alpine farming villages and did not form separate pastoral nomadic societies. Sheep, goats, horses, donkeys, and cattle were introduced into the Americas only after the Spanish conquest during the 1500s. Although cattle raising became important in the western United States, Brazil, and Argentina, it was ranching done by sedentary people. The capture of horses from the Spanish during the mid-seventeenth century by natives of the U.S. Southwest did produce a classic nomadic society, the Plains Indians, but they were mounted hunters who followed herds of bison, an animal they never domesticated.

Main Types and Key Animals

The variety of animals raised by pastoral nomadic societies is surprisingly small: six widely distributed species (sheep, goats, cattle, horses, donkeys, and

camels) and two species with restricted distribution in Asia (yaks at high altitudes and reindeer at northern sub-Arctic latitudes). Dogs are also often kept for protection. Pastoral nomadic societies fall into six distinct types, each with a key animal that has primary cultural importance and a specific geographical range.

Eurasian Steppe: Horses

In the Eurasian steppe zone nomads give pride of place to the horse, although they also raise sheep, goats, cattle, and Bactrian (two-humped) camels. Although the domestication of the horse may have occurred as early as 4000 BCE, the emergence of horse riding after 1000 BCE laid the foundation of steppe nomadic power. Beginning in the seventh century BCE the Scythians and Sarmatians established distinct societies in south Russia and Ukraine. Their way of life spread east relatively rapidly until, by the third century BCE, culturally similar groups, Xiongnu, Wusun, Yuehshi, became well established on China's northern steppe frontier. For the next two thousand years a series of nomadic empires based there was to be China's greatest foreign policy challenge. The empires also controlled key links of the Silk Road, the overland trade route that linked China with the West.

The most powerful of these nomadic groups who successively bordered China were the Xiongnu, Turks, Uygurs, Mongols, Oirats, and Zunghars. In the West the best-known steppe nomads of the medieval and early modern periods included the Huns, Khazars, Kipchaks (Cumans), Golden Horde (Tatars), and Kalmuks. After the Mongol conquest the Kazakhs, Turkmen, and Kirghiz came to dominate Central Asia.

Southwestern and Central Asia: Sheep and Goats

The mountain and plateau areas of southwestern and Central Asia are dominated by pastoral nomadic societies who raise sheep and goats and use horses, camels, and donkeys for transport. Pastoral nomadic societies there have always had a symbiotic relationship with neighboring towns as economic specialists, trading meat animals, wool, milk products, and hides for grain and manufactured goods. Indeed, many settled villages are of nomad origin because poor nomad families settle into peasant villages when they become impoverished due to the loss of their animals.

Nomads coming from Central Asia came to dominate this region politically from 1000 to 1500 and established a series of important dynasties on the

Goatherds tend their goats against the backdrop of Mount Tabor, Palestine (photo taken between 1898 and 1946). Library of Congress.





Cattle kraal on bank of the Bahl el Zeraf. Photo by Hugo Adolf Bernatzik.
New York Public Library.

Iranian and Anatolian Plateaus. These dynasties included the Seljuqs, Ghaznavids, Khwarazm Shahs, Mongol Il-Khans, Timurids, Uzbeks, and Ottomans. From 1500 onward nomads formed powerful regional confederations who retained considerable autonomy until well into the twentieth century. Important nomadic components of such primarily sedentary groups as the Pashtuns, Kurds, and Baluch also existed.

Desert Middle East and North Africa: Camels

The Sahara and Arabian Deserts are home to Bedouins who specialize in raising the dromedary (one-humped) camel for food and transport. They derive other income by extorting dates from oasis farmers, raiding other nomads for camels, selling camels for the caravan trade, and serving as mercenaries. Nomads who only raise camels live mostly in Arabia (the peninsula of southwestern Asia including Saudi Arabia, Yemen, and the Persian Gulf states) and have the widest migration circuits, which allow them to exploit deep desert pastures where only camels can survive because water is so scarce. A larger number of nomads in North Africa and other parts of the Middle East combine camel and sheep raising but have a much more restricted migration cycle because sheep need to be watered regularly.

The camel is a late domesticated (c. 1500 BCE); the nomads who specialized in raising camels emerged in an environment in which the urban civilizations in Mesopotamia and Egypt had already been in existence for two millennia. Camel-raising Bedouins became politically important only after the introduction of the north Arabian camel saddle between 500 and 100 BCE. This saddle allowed camel-mounted warriors to fight more effectively and gave them control of the lucrative incense trade routes that ran through Arabia. Such camel-mounted warriors became the core of the early Islamic armies who conquered the Near East and North Africa during the seventh and eighth centuries.

The rise of camel-raising societies was also facilitated by the growing demand for camels to be used for transport. Camels so effectively replaced wheeled vehicles as the more economical way to move goods that wheeled vehicles completely disappeared from the region until the arrival of cars and trucks during the twentieth century.

Sub-Saharan Savanna: Cattle

Cattle are most highly valued in the savanna areas of sub-Saharan Africa, but goats also play a major role in subsistence, as does seasonal agriculture. In societies in that area ownership of cattle is the key

determinant of a man's wealth and status. Ritual events all demand cattle exchanges or sacrifices. Using huts instead of portable tents, nomads there use only donkeys for transport. Because neighboring sedentary people also value cattle, determining just which societies should be considered true pastoral nomads can be problematic, but in general they have at least a five to one ratio of cattle to people.

The most prominent pastoral nomadic societies live in east Africa and include the Nuer, Turkana, and Masai. The Masai are renowned for a diet that consists primarily of meat, milk, and blood. They expanded rapidly south during the eighteenth century and came to dominate much of the highland grassland areas in Kenya and Tanzania. The Nuer expanded in a similar manner during the mid-nineteenth century in southern Sudan, displacing or incorporating neighboring groups. Broader interactions with the outside world did not occur until the latter part of the nineteenth century when these groups fought to resist their incorporation by European colonial powers. During this period some southern African pastoral societies such as the Zulus rapidly transformed themselves into powerful kingdoms that could more effectively deal with European expansion.

High-Latitude Asia: Reindeer

In high-latitude sub-Arctic areas pastoral nomadism is the most sophisticated variation in a continuum of reindeer exploitation. This continuum ranges from the simple hunting of wild animals, herding semiwild animals for meat harvest alone, to true pastoral nomadism in which domesticated reindeer are milked and used for traction among the Lapps of Scandinavia. Because reindeer feed on lichens rather than the grass or bush species grazed by other domesticated herbivores, societies who raise reindeer are isolated from other pastoralists. As a result these far northern reindeer herders have had the least-direct impact on world history. Although one might suspect that reindeer herding represents the oldest form of pastoralism because societies who depended on hunting

them date back to the foraging (Paleolithic) era, many scholars now believe that the use of domesticated reindeer is historically recent and has emerged only during the past five hundred years.

High-Altitude Asia: Yaks

The high-altitude plateau of Tibet is a harsh environment above 3,000 meters in elevation where the yak makes pastoralism viable. Herds also include yak-cattle hybrids, high-altitude varieties of sheep, cashmere goats, and a few horses. Tibetan pastoralists trade wool, skins, salt, and milk products to valley villagers for barley, which is a mainstay of their diet. In the past they also supplied the overland caravan trade with yak, the only animal capable of carrying heavy loads in that high mountain region. Nomads there move relatively short distances and live in black tents made of yak hair. Many of the pastoral nomadic communities were incorporated into large estates run by Buddhist monasteries until China took direct control of Tibet in 1959.

Political Structures

The complexity of political structures among pastoral nomadic societies is strongly correlated with the degree of centralization found among their sedentary neighbors. The most complex and centralized political organizations emerged among nomads who faced powerful centralized states such as China. By contrast, pastoralists in eastern Africa who faced only other stateless rivals relied on decentralized political organizations. Four basic types existed:

1. Political organization based on age sets among the Masai or acephalous (lacking a governing head or chief) segmentary lineages among the Nuer was characteristic of sub-Saharan Africa, where pastoral nomadic societies encountered few state societies until the colonial era.
2. Political organization based on lineages that had permanent leaders but no overarching or centralized organization

Corn planted us; tamed cattle made us tame. / Thence hut and citadel and kingdom came. • **Richard Wilbur (b. 1921)**

typified North African and Arabian Bedouin societies who encountered only regionally powerful states.

3. Supratribal confederations with powerful hereditary leaders emerged throughout the Iranian and Anatolian plateaus as parts of regional political networks that lay within large empires.
4. Centralized nomadic states ruling over vast areas and vast numbers of people periodically developed on the steppes of Mongolia, usually in response to the unification of China under the rule of a single dynasty.

The centralized nomadic states that formed along China's frontier had the greatest impact on world history. Their combination of horse riding with archery, which created a formidable horse cavalry, made these nomads powerful. Through policies that combined raiding or extorting their sedentary neighbors with controlling international trade networks, these nomads became wealthy and politically influential in spite of their relatively small populations. Such wealth and influence allowed for creation of large, long-lived nomad empires in Mongolia that were the political equals of the powerful native Chinese dynasties with whom they often warred. The most notable of these early empires was that of the Xiongnu, who rivaled the Han dynasty (206 BCE–220 CE) in power. A series of Turkish empires then faced off against the Chinese Sui and Tang dynasties from 581 to 907. In the West the Huns under Attila created a similarly powerful but relatively short-lived empire that threatened the Romans during the fifth century.

The most powerful nomad empire to emerge on the world stage, however, was that of the Mongols. Under Chinggis (Genghis) Khan and his successors during the thirteenth century they conquered most of Eurasia to create a world empire that ran from the Pacific Ocean to the Danube River and from the frozen forests of Siberia to the humid shores of the Persian Gulf. From the eighteenth century onward, however, the steppe nomads' political power declined

significantly because the gunpowder revolution reduced their military advantage. The growing imperial power of czarist Russia in the West and China's Qing dynasty (1644–1911/12) in the East led to the division of the Eurasian steppe between them by the beginning of the nineteenth century and destroyed the autonomy of the steppe tribes.

Pastoral Nomads Today

Although pastoral nomadic societies can be found throughout their traditional ranges, they no longer have the influence they once did. The military power that they wielded as mounted archers or desert warriors disappeared centuries ago. Similarly their ability to remain autonomous by isolating themselves deep in the desert on the steppes or in the mountains was trumped by motorized vehicles and airplanes. As the world's population has expanded, they have lost pasture areas to farmers who have attempted to plow land that is only marginally fit for agriculture. Modern governments that have a bias against people who move and that employ active policies to settle nomads have accelerated this process. Still, in many parts of the world pastoral nomadism remains a viable economic strategy and is likely to continue in some form far into the future. The historical legacy of the nomad remains: the Mongol hordes galloping across the steppe, the Bedouin camel rider topping a sand dune, and the tall Masai holding his long spear are stereotypes so strongly engrained in the popular imagination that we could not eradicate them even if we wanted to.

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See also Steppe Confederations; Warfare—Steppe Nomads

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Paul, Saint

(10–67 CE?)

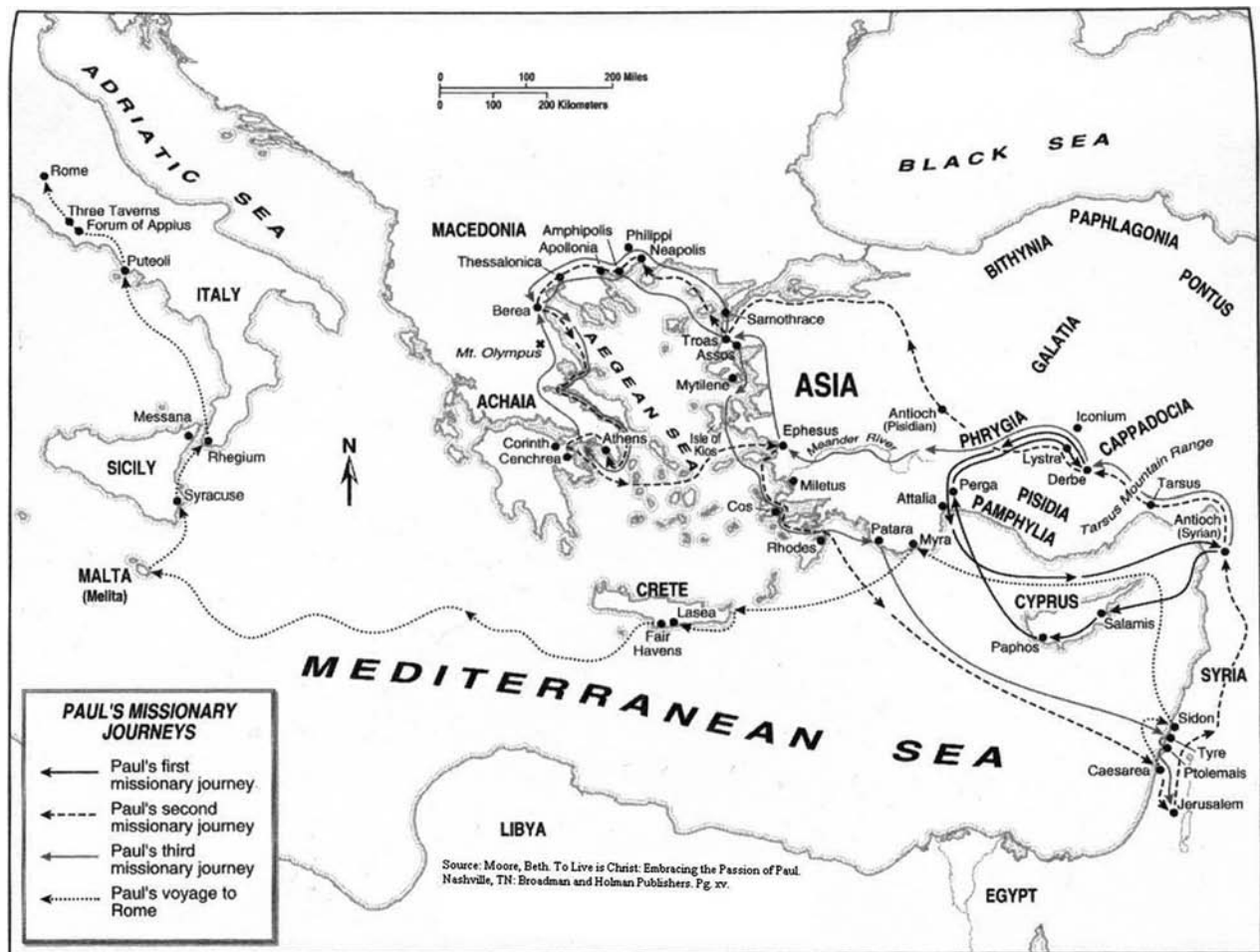
EARLY CHRISTIAN THEOLOGIAN

More than any other single person, Saint Paul transformed Christianity from a Jewish sect into a world religion. His missionary travels founded churches across Anatolia and Greece; letters to his converts defined doctrine and settled quarrels; and above all, he persuaded Peter and the other apostles in Jerusalem to abandon the Jewish law as a guide to Christian life.

Although he considered himself a Jew throughout his life, Saint Paul is recognized today as the first distinctly Christian theologian. Paul was the first follower of Jesus to insist on the inclusion of Gentiles, or non-Jews, into the family of God. He also was the first to insist upon the importance of Jewish Scripture for the earliest followers of Jesus, and his insistence indirectly helped to form the two-part Christian Bible, which includes the Hebrew Scriptures and the New Testament. His seven authentic letters (Romans, 1–2 Corinthians, Galatians, Philippians, 1 Thessalonians, and Philemon) are the earliest New Testament writings and thus the earliest Christian documents available. These letters are indispensable for any study of the relationship between Jews and Gentiles in the first-century church or any examination of first-century church controversies, doctrines, and practices. In the history of Christianity, Paul's letter to the Romans facilitated Saint Augustine's conversion in the fourth century and Augustine's development of the doctrine of salvation by grace in the fifth century; it buttressed Martin Luther's insistence on salvation by grace through faith alone in the sixteenth century and anchored Karl Barth's work in the neo-Orthodox movement of the twentieth century.

Born a Jew in Tarsus in the early first century CE, Paul persecuted followers of Jesus early in his life. After seeing a vision of the resurrected Jesus, Paul became a follower himself and worked as a missionary between 35 and 60 CE, traveling throughout the ancient Near East and the Mediterranean and establishing churches. The dissonance between Paul's earlier life as a practicing Jew and his new life as a follower of Jesus was not lost on those around him, and Paul had to spend a great deal of time defending his right to be an apostle for Jesus, or a preacher called to spread the gospel (Galatians, 1–2 Corinthians). Paul appears to have been executed as a martyr during the reign (54–68 CE) of the Roman emperor Nero.

Paul's churches consisted mostly of Gentiles, and Paul argued vigorously that Gentiles did not have to adhere to Jewish traditions in order to be considered followers of Jesus. Instead, Jesus' message was available to anyone who believed in his life, death, and resurrection, regardless of ethnicity (Galatians, Romans). Paul also gave instruction regarding the significance of Christian doctrines such as the resurrection and the second coming of Jesus (1–2 Corinthians, 1 Thessalonians). Paul's discussion of the Eucharist, or the Lord's Supper, in 1 Corinthians and the hymn about the Incarnation (the belief that Jesus is both human and divine) in Philippians 2 are the first descriptions of these doctrines. Furthermore, because Paul wrote to specific congregations, he had much to say about social ethics in each of his letters. For example, the status of women in the early church is mentioned in 1 Corinthians, and Philemon may address slavery, although no scholarly consensus exists regarding the exact purpose of the letter.



On his journeys Saint Paul founded churches across Anatolia and Greece.

Paul's legacy remains controversial. While some scholars credit him for the establishment of Christian theology, others accuse him of establishing Christian anti-Judaism because of his occasionally polemical critiques of Jewish practices and his claim that only faith in Jesus, and not adherence to Jewish tradition, makes one righteous before God. His opinions about women and slaves also have been criticized for their apparent support of first-century ideals, which kept both groups in a socially subservient position to free-men. Whether one considers him worthy to be a saint or denounces him as the ringleader of Christian anti-Jewish sentiment and an advocate for social oppression, Paul left his permanent and unmistakable mark on the New Testament and consequently on all forms of Christianity, past and present.

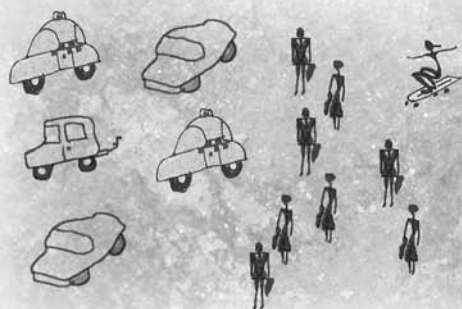
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See also Jesus

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Peace Projects

The goal of a peace project is to establish among states the procedures necessary to settle disputes, and thus to avoid war. Most peace projects take the basic elements that govern civil societies to the interstate level. An analogy between domestic and international frameworks show that the tools used to pacify societies—rule of law, courts, sanctions—may well be applied to interstate relations, and thus be used to pacify the world.

In the depths of World War II, Edith Wynner and Georgia Lloyd published *Searchlight on Peace Plans*, in which they intended to provide insights into peace in a time of suffering and grief. The book summarized the main peace projects and world order proposals drawn up in the Western world since ancient Egypt. Between the fourteenth and the mid-twentieth centuries alone, more than 125 plans have been sketched. Besides many anonymous and obscure authors, some historic figures stand out, such as Dante Alighieri, William Penn, Jeremy Bentham, Immanuel Kant, and Thomas Paine. Well-known and unknown authors all share the same dream of doing away with war.

Peace projects inherently pertain to relations among states, whether these are kingdoms, nations, or modern states. The goal is to obviate war by establishing a set of procedures for the peaceful settlement of disputes. Unlike utopian schemes, peace projects aim at neither changing human nature nor eliminating violence between individuals. However, most peace projects transpose the basic elements that govern civil societies to the interstate level. A very common analogy between

domestic and international structures tends to show that the tools used to pacify societies—rule of law, courts, sanctions—may well be applied to interstate relations, and thus used to pacify the world.

Peace projects are most frequent during and after wars, and even more after particularly destructive conflicts, as F. H. Hinsley, an historian specializing in international relations, observed. They also appear during political turmoil, when entities compete for supremacy. In fact, as one goes through seven centuries of peace projects, one finds that the idea of lasting peace is often tied in with a particular political order. Projects refer as much to the promotion of an order through which peace would be accomplished as to actually fulfilling the dream of a warless world. As the next examples show, what first appears as a scheme for the achievement of a universal aspiration often conceals a particular ideology and specific interests.

From the Middle Ages to the Dawn of the Modern State

The struggle between the papacy and the Holy Roman Empire dominated medieval political thinking. Peace projects reflected this tension. Was the pope a spiritual guide or did his power outshine the emperor's? Both Pierre Dubois (c. 1255–c. 1312) and Dante Alighieri (1265–1321), each of whom wrote a peace project at the beginning of the fourteenth century, took sides against the bishop of Rome. Dante, in *De Monarchia* (1310), favored the emperor. In his hierarchical view of the world, the prince above all princes—the

“Monarch”—was the only one capable of bringing peace to Christendom. In the same way the ancient Roman Empire gave the world the Pax Romana, imperial domination that would bring lasting peace.

Dubois, who wrote under the patronage of the French king Philip IV, adopted a more innovative stance. His work *De Recuperatione Terrae Sanctae* (1305) focused on the Christian crusade to recover the Holy Land. To meet this goal, Dubois claimed that European kings should stop quarreling and renounce warring against each other. Unlike Dante, he opposed the imperial solution on the grounds that Christendom consisted of too many men and too many cultures scattered over too large a territory. Dubois then put forward a new kind of union: a council formed by the sovereigns of Europe that would act as a court of arbitration. Members who refused to submit a dispute or to obey the court’s decisions would then face sanctions, from excommunication to economic and military actions. The pope, in charge of pronouncing the culprit excluded from the Christian community, was left with a moral power. The king of France, on the other hand, would assume the council leadership by executing the sanctions.

Dubois’s scheme was obviously designed to enable Philip IV to encroach upon the powers of the pope and his fellow kings. Peace was at best the second of Dubois’s concerns. Nevertheless, this fourteenth-century plan contained the basic elements of virtually all further peace projects: the formation of a council or a union of independent entities, a set of procedures for settling disputes, and a coercive device.

Dubois’s project fell into oblivion for three hundred years. During that period, the papal dream of temporal power vanished, as did the imperial one of a united Christendom, despite a last attempt in the sixteenth century by Emperor Charles V to revive it. As a reaction to this last imperial endeavor, the European nation-states emerged. Dubois’s text was republished in 1611: his project of a council of sovereign European states, anachronistic in 1310, was now conceivable.

Peace Among Sovereign States

The rise of the modern state system during the sixteenth and seventeenth centuries resulted in a new doctrine, the balance of power. Although based on equipoise, the system saw states continuously struggling to alter the balance for their own benefit. Competition for glory or for economic or territorial superiority—the New World had just been discovered—was an added source of tension. War was an extreme yet lawful means of conducting relations among rival states. Conflicts increased accordingly and, as a byproduct, fostered thoughts on peace. But philosophers were aware that calls for Christian universal brotherhood would fall on deaf ears. They had to follow in Dubois’s footsteps and sketch plans for independent nations to voluntarily join a partnership for the common good. Thus, the peace projects of the seventeenth and eighteenth centuries—Emeric Crucé’s *Nouveau Cynée*, Sully’s *Grand Design*, the Abbé de Saint-Pierre’s *Project to Bring Perpetual Peace in Europe*, William Penn’s *Essay towards the Present and Future Peace of Europe*—are all variations on the same idea. Penn’s and Saint-Pierre’s projects are especially representative of this period. They are, as well, exceptions to the previous assertion that peace plans generally promote specific interests, although they are certainly Eurocentric.

In his 1693 *Essay*, Penn (1644–1718) suggested the creation of a European parliament, which would meet periodically and whose task would be to settle disputes by arbitration and punish aggressive behavior. National representatives would be sent to the “Diet” (the assembly) in proportion to each nation’s power, revenues, exports, and imports. But in return, according to Penn, the member nations would have to abandon the key attribute of national sovereignty—unanimity of decision—within the assembly by accepting a three-fourths majority vote. A nation could thus be compelled to act according to the will of others.

The project proposed by Saint-Pierre (1648–1743), first published in 1712, is based on two observations: firstly, that peace could not be achieved as long as



Masked protestors, symbolizing victims, demand that General Augusto Pinochet be returned to Chile to answer war crimes' charges.

Europe lacked a treaty-enforcing mechanism, and secondly, that the balance of power was a continuous threat to peace. To settle these problems, he suggested the creation of a “grand alliance,” supported by international armed forces. Saint-Pierre, unlike Penn, proposed an equal representation of the twenty-four European states.

For many years, Saint-Pierre sent improved versions of his plan to European sovereigns in the hope that they would realize how they would benefit from organized international relations, adding to his own text objections and counterobjections to overcome any criticism. Like Penn, Saint-Pierre trusted that the European rulers would assess the economic advantages of a peaceful order. But in the 1729 edition of his treaty, the Abbé confessed he had underestimated the essential concern of European leaders, that is, to keep their freedom of action, or what they called their national sovereignty. However much he claimed that preserving the members' independence against an aggressor was precisely the aim of a union, no one

seriously considered it. Saint-Pierre incurred several pungent comments from his contemporaries. Voltaire (1694–1778) scoffed at this “Saint-Pierre of Utopia” who was naive enough to believe that princes, in the name of peace, would abandon precisely that power which defines them. National sovereignty was the stumbling block of peace projects.

The Kantian Approach to Perpetual Peace

Immanuel Kant (1724–1804) was the first to address the inescapable fact of national sovereignty. His *Thoughts on Perpetual Peace* (1795) is the most quoted and influential text on peace. Surprisingly, however, it pertains to the *idea* of lasting peace and not its fulfillment, as Kant's vision of perpetual peace is one of an asymptotic quest: humanity will indefinitely tend toward it.

Kant believed that self-interest was the driving force of mankind. He believed as well that, as much

... they shall beat their swords into plowshares, and their spears into pruning hooks; nation shall not lift up sword against nation, neither shall they learn war any more. • Micah 4:3

as war is inherent to human life, the interest of men lay in submission to the *moral law* of peace. While men perpetually seek to impose their law upon others, they also fear that a law will arbitrarily be imposed upon them. Their only hope of breaking that circle of insecurity is therefore to submit to a common law, a “social contract” of international scope, a federation—in other words, to create a free union of nations instead of a supranational entity that would deny them their identity. Kant, however, stressed one prerequisite for the success of any federal scheme. In the “first definitive article for perpetual peace,” he argued that “the civil constitution in each state should be republican” (1983). Thus, a population which is already governed by a social contract based on a constitution and on the separation of powers is likely to accept its international counterpart. By linking peace and a republican regime—or democracy—this requirement became the cornerstone of the liberal and modern approach to peace.

Kant expressed his views on peace and federalism while the former American colonies were experiencing the first large-scale federal structure. As for Europe, ruled by balance of power, it was sinking into a twenty-year war as a result of the French Revolution and Napoleon’s dream of a new imperial domination.

Peace, Progress, and Interdependence

Major conflicts drastically decreased in Europe after Napoleon’s abdication in 1815, but a quarter of a century of turmoil had greatly stimulated ideas on peace. Peace groups and peace plans flourished in the nineteenth century. The impetus was provided by Quakers who formed the first peace society in 1816. The goals of these various groups were religious—applying Christian principles to national and international relations—as well as humanistic. Inspired by the Enlightenment, they sought to rationalize interstate dealings. As the belief in continuous human progress grew stronger as a consequence of industrial and scientific development, perpetual peace represented the ultimate culmination of civilization.

In the modern world, peace activists believed, war would inexorably become obsolete, and many signs supported this.

Firstly, the “European concert,” even though designed to suppress national emancipation and liberal reforms, showed that leaders could meet during times of tension and find a common solution to European problems. Secondly, the international expansion of trade and commerce made clear the growing interdependence of nations; it seemed as if sovereignty would soon fall into obsolescence. Also, newly founded nongovernmental organizations like the telegraphic and postal unions showed that nations could work together and adopt common rules for the benefit of all. Finally, the popularity of the federal idea in the United States, Switzerland (1848), Canada (1867), and Germany (1871) validated Kant’s prediction that a federation of states (a *Völkerbund*) was a practicable solution, as the first discussion on the “United States of Europe” was held at the 1849 Paris International Peace Congress.

Despite nationalism and armaments, which both grew disproportionately at the end of the century, the belief was strong among peace activists that war would eventually disappear with the help of reason, science, cooperation, and international law supported by arbitration and conciliation. The Great War came as a shock.

Dream of Perpetual Peace in the Contemporary World

Between 1914 and 1918, many peace groups and individuals still produced peace projects, mostly recapping the propositions of the previous schemes (such as a federation of nations, parliament of mankind, international council, and executive force). For their authors, the conflagration made even more obvious the anarchy of the international system and the necessity of rebuilding it on the rule of law. Furthermore, the idea of an international organization for the purpose of preserving peace appeared in political discourse. The pledge by President Woodrow Wilson (1856–1924) to work for a league of peace and his

We make war that we may live in peace. • **Aristides** (fifth century BCE)

call for the expansion of democracy filled peace activists with enthusiasm. Peace projects were no longer purely speculative.

The League of Nations, founded in 1919, tentatively tried to regulate international relations. Carefully designed not to infringe upon its members' sovereignty, its influence, which was solely moral, rapidly faded. As years went by, peace advocates understood that the process of global integration could not come out of such a political structure. The emphasis had to be put on education, cooperation, and the creation of an internationalist state of mind. After World War II, the dream of a peaceful international community continued via the United Nations but, like its predecessor, the U.N. was devised by the victorious countries to reflect the new geopolitical order. Its influence depended on the will of its sovereign constituents.

Kant's reflections on peace still echo today. Two centuries ago, the philosopher warned us against the panacea of a universal structure superseding states. Today, a world federation is still very much premature and universal peace projects are no longer topical. However, the ongoing and peaceful integration of European nations shows that the federal project first discussed in 1849 was not utterly unrealistic. Kant's

call for the extension of the democratic principle and for cosmopolitanism—the international state of mind—may well represent the best hope for peace.

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See also Peacemaking in the Modern Era; War and Peace—Overview

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Peacemaking in the Modern Era

Based on the historical record, it is possible to identify a model of peacemaking in the modern era. At the core, peacemaking seeks to ensure equilibrium—no single state should dominate all of its neighbors, and the existence of a dominating nation or group can be balanced by a coalition of states. Peacemaking assures the predominance of the most powerful states while allowing weaker powers to influence international relations.

Theoretically, the French philosopher and political scientist Raymond Aron defines *peace* as the suspension of violence or rivalry between two political units (1966). This process by which two warring powers come to terms and stop fighting can be either imposed by the defeat of one adversary's military forces or, in the case of military stalemate, negotiation aimed at stopping the fighting. Peacemaking is thus the political process by which states shift from the state of armed conflict to the state of peace, theretofore confirming the political, geographic, economic, or social changes imposed by the war.

Related to the birth of the modern international system, peacemaking is associated with the basic principles structuring international relations: sovereignty of the state; the formally recognized equality of the international actors; codification and recognition of international law; and the regulating influence of the balance of power mechanism.

As John J. Mersheimer explains, since states “live in a fundamentally competitive world where they view each other as real, or at least potential, enemies, and they therefore look to gain power at

each other's expense” and, moreover, “have powerful incentives to take advantage of other states,” peacemaking seeks to limit the risk of a new conflict (2003, 52–53).

The Westphalian System

In the seventeenth century, the emergence of the modern state and the rule of law in Europe set the conditions for peacemaking. International relations in the feudal period were based on a vertical power relationship between the European monarchies, the Holy Roman Empire, and the papacy. In such a context, the Holy Roman Empire and the papacy, being the universal representatives of Christianity, could meddle in the internal affairs of European dynasties.

The peace of Westphalia transformed diplomacy by changing the international power relationship to a horizontal one. Based on the four basic principles defining modern international relationships, the Westphalian system introduced the principle of the sovereignty of the state as the basis of interstate relations. More importantly, the two peace treaties that were signed in Münster and Osnabrück in 1648, putting an end to the Thirty Years' War, introduced the concept of national interest as a motivating factor that defined the conditions of peacemaking and resulted in an international system based on a European balance of power. As Henry Kissinger (1957) has shown, European diplomacy was secularized by the replacement of religious motivation with the interests of the state in the conduct of affairs of state. The peace of Westphalia was



Germans participate in a mass demonstration outside the Reichstag to protest the Treaty of Versailles.

based on the introduction of a peacemaking process that preserved the political equilibrium that had arisen from the war that preceded it. In the particular case of the Thirty Years' War, the peacemaking process organized by the king of France, the queen of Sweden, and the Holy German Empire, by its division of the German states, ensured French predominance in continental Europe for the next two hundred years. Furthermore, it showed the way to other peace settlements that ended the numerous European wars waged in the seventeenth and eighteenth centuries.

The Congress of Vienna

The French Revolution and the rise to power of Napoleon Bonaparte (1769–1821) posed a major challenge to the basis of balanced peacemaking. The shift of the political system toward the nation-state system and the introduction of mass armies transformed the basis of peacemaking. By marching on Europe, the Napoleonic armies seemed like an irresistible force challenging the structures of the ancient regime. The conquest of Europe by French armies risked making France the dominating power, putting Britain in league with Austria, and leaving Prussia and Russia to defeat Bonaparte.

The resulting peacemaking agreement was similar to the established diplomatic tradition of the Westphalian system. The Vienna settlement established

Austria, Britain, and Russia as the dominant European powers. When the victorious states met in Vienna in September 1814, the fundamental change behind the peacemaking process was the will of Austria, Britain, and Russia to keep France from regaining its capacity to transform the European balance of power. Napoleon's "hundred days"—when he returned from captivity on the isle of Elba in 1814 and led his troops to a final stand at Waterloo—confirmed the need for a diplomatic system capable of ensuring the continuation of the new balance of power.

Given that the aim of the major powers' representatives (Czar Alexander I of Russia, Klemens von Metternich, foreign minister of Austria, and Robert Stewart Castlereagh, Britain's foreign minister) was to restore the *ancien regime* and limit the impact of the French Revolution on Europe's political system and social values, they understood the need to build a diplomatic system capable of keeping at bay the impact of the Revolution.

With its fundamentally reactionary stance toward the Revolution, the Congress of Vienna, under the leadership of Metternich, adopted a pragmatic approach to the peacemaking process. France was included in the negotiations, the French monarchy was restored but contained by a written constitution, and to limit the risk of antagonizing the French population, the country was allowed to keep its 1789 borders. As a way of controlling France, which had come

Peace is not the product of terror or fear. Peace is not the silence of cemeteries. Peace is not the silent result of violent repression. Peace is dynamism. Peace is generosity. It is a right and it is a duty. • **Oscar Romero (1917–1980)**

out of the Congress of Vienna still a major world power, Alexander I, Holy Roman emperor Francis II, and Frederick William IV of Prussia devised the Holy Alliance. Aimed at ensuring the European status quo, it was shunned by Britain, which considered it too intrusive and conservative. Its first article read as follows:

In conformity with the words of the Holy Scripture which ordain that all men should regard themselves as brothers the three contracting monarchs will live united by the bonds of an indissoluble fraternity, and considering themselves as compatriots will in all cases lend one another assistance, aid and help; regarding themselves in relation to their subjects and armies as fathers of families, they will direct them in the same spirit of fraternity by which they are animated in order to protect religion, peace and justice. (Simpson and Jones 2000, 94)

The main achievement of the Vienna system was to introduce a framework for the collaboration of the victorious powers to ensure the preservation of the European status quo. The result was the congress system, by which Austria, Britain, France, Prussia, and Russia met to respond to and consult with each other on various international crises that threatened the balance of power created in Vienna. Although conservative by nature, the Vienna peace settlement and the congress system that it instituted led to a century of peace that lasted until World War I.

The Treaty of Versailles

World War I drastically changed the European balance of power. The waging of total war led to a peacemaking process that basically excluded the defeated nations from the resulting balance of power to prevent them from seeking to redefine it anew.

The human cost of the war was on such a scale that two new elements were introduced into the peacemaking process that took place at the Palace of Versailles in 1919: war guilt and the establishment of a collective forum aimed at keeping war at bay.

Through its infamous Article 231, the Treaty of Versailles, signed on 28 June 1919, held Germany solely responsible for the war. Excluded from the peace negotiations, Germany was required to pay financial reparations, disarm, and limit the size of its standing army and navy, and it was banned from building a new air force.

Under the influence of U.S. president Woodrow Wilson (1856–1924), the victorious powers accepted the establishment of an international organization designed to ensure by diplomacy and collective security the political status quo resulting from the Versailles settlement. With the aim of legalizing diplomacy by replacing armed conflict with negotiation, the treaty created the League of Nations, an international forum and ancestor to the United Nations. Acting as an international forum aimed at achieving a general disarmament process, it failed under the pressure of the Nazi Germany and Fascist Italy, both seeking to change the balance of power resulting from the war.

Without any authority other than the moral value of its covenant, the league epitomized the failure of the peacemaking process that took place in 1919. The Bolshevik Revolution in Russia and the numerous revolutionary movements in central Europe seemed to pose a real threat in 1919, and the peacemakers had to act with speed to stabilize international relations. But as the historian Jack C. Roth explains, “the defeat of Germany concealed the fact that in 1919 her potential for European domination was possibly greater than it had been in 1914. The war, in fact, ended in such a way as to break up the very coalition needed to keep Germany in check” (1968, 92).

The peacemaking process at Versailles was inspired by a collective will to “legalize” international relations, and the absence of any coercive mechanism meant that the whole system rested on the goodwill of its adherents. Incapable of stopping Japan’s invasion of China in 1931, Germany’s rearmament, or Italy’s invasion of Ethiopia, the League demonstrated the weakness of the collective diplomacy introduced at Versailles and the difficulty of

Blessed are the peacemakers: for they shall be called the children of God. • **Matthew 5:9**



University students in Xi'an, China, flash the peace sign in 1989 following the Tiananmen Square protests in Beijing.

achieving a stable peacemaking process without the use of coercion.

From World War II to the Cold War

The alliance between Britain, the United States and the Soviet Union defeated Germany in 1945. Following a second German bid for power in Europe, the victors decided to build a suitable peacemaking process aimed at ensuring the European status quo. The end of World War II marks a significant shift in international politics. It marks the end of European domination and the emergence of an international system based on the existence of two superpowers: the United States and the Soviet Union.

In Yalta and Potsdam, Britain, the Soviet Union, France, and the United States tried to build a suitable peacemaking process aimed at resolving, once and for all, the German problem. If the United States and the Soviet Union hoped in 1945 to perpetuate their wartime collaboration, their ideological divide soon shattered any hopes of collaboration, and once more the international status quo rested on equilibrium between dominant powers, namely the Soviet Union and the United States. In fact, the incompleteness of the peacemaking process meant that

the world would live under the threat of war for the next fifty years.

The existence of nuclear weapons changed the stakes of international relations. Before the explosion of the atom bomb, war was considered a regulating mechanism reflecting shifts in the international balance of power. With the risk of destroying humanity, the focus shifted from warfare to peacemaking.

Understanding Peacemaking

Based on the historical record, it is possible to identify a model of peacemaking. At the heart of the process, peacemaking seeks to ensure equilibrium so that no single state can dominate all of its neighbors. The existence of a dominating nation or group can be balanced by a coalition of states. Peacemaking assures the predominance of the most powerful states while allowing weaker powers to influence international relations. As long as the interests of the states remain within the boundaries defined by the peacemaking process, the shift to war can be withstood.

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See also Peace Projects

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Pentecostalism

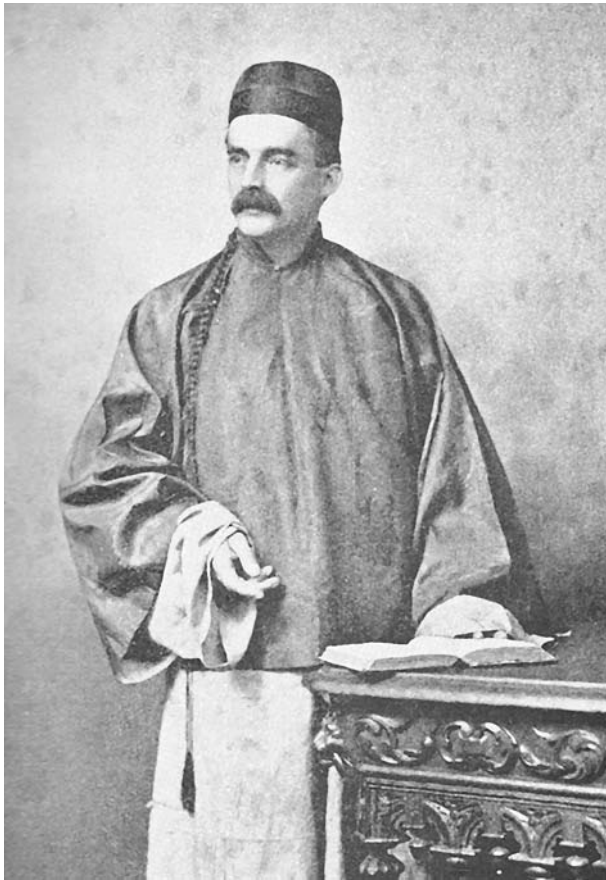
Pentecostals, who interpret the Bible literally and believe in the imminent return of Christ, are distinguished from other Fundamentalists or Evangelicals by greater exuberance in their religious services. Pentecostals emphasize prophecy, interpretation of tongues, healing, and exorcism of demons. The movement has spread from its roots in the United States to the Caribbean, Latin America, sub-Saharan Africa, Southeast Asia, South Korea, Britain, and Eastern Europe.

Pentecostalism emerged as a distinct movement following the Civil War. It was a radical extension of the Holiness movement that sought to revitalize the Wesleyan doctrine of perfection in various mainstream U.S. denominations, particularly the Methodists. But speaking in tongues (glossolalia), a significant factor in of Pentacostalism, appears to have existed off and on for millennia. Despite a diversity of beliefs among them, Pentecostals generally emphasize (1) the baptism of the Holy Spirit manifested by speaking in tongues; (2) the imminent return of Jesus Christ; and (3) the significance of speaking in tongues as an evangelical mechanism. Although Pentecostals take a literal interpretation of the Bible and stress a puritanical morality, they are distinguished from other Fundamentalists or Evangelicals, such as Southern Baptists and the Churches of Christ, by greater exuberance in their religious services. Pentecostals also emphasize prophecy, interpretation of tongues, healing, and exorcism of demons. At the ideological level, Holiness and Pentecostal sects emphasize the notion of “sanctification.” As opposed to the relatively subdued tone of Holiness services, Pentecostalism

emphasizes inspirational outbursts of ecstasy such as shouting, gesticulating, twitching, fainting, rolling on the floor, and especially speaking in tongues or glossolalia. Some Pentecostal sects in southern Appalachia and the Ozark Mountains even handle poisonous serpents.

Pentecostalism Develops in the United States

Early sites of the Pentecostal movement included a center in western North Carolina and eastern Tennessee connected with A. J. Tomlinson and the Church of God; a center in Topeka, Kansas, associated with Reverend Charles Parham; and the interracial Asuza Street Revival of 1906–1909 in Los Angeles. Parham left the Methodist Episcopal Church to establish Bethel Healing Home in Topeka, Kansas, in 1898. He had been inspired by the healing ministry of J. A. Dowie of Zion City, Illinois, and visited Holiness and healing ministries from Chicago to New York to Georgia in 1900. In late 1900, Parham established the Bethel Bible College in Topeka. Some of his students began to speak in tongues in early 1901 after investigating the doctrine of the “baptism of the Spirit.” Parham closed his school and instructed his students to spread the Pentecostal message. He opened another Bible college in Houston in 1905 and recruited William Seymour, an African American Holiness preacher, who went on to provide the impetus for the famous revival at the Asuza Street Mission. Particularly poor and lower-class people from not only many parts of the United States but also other countries attended the revival. Seymour spread the Pentecostal gospel to both whites and blacks in the Southeast. After



This picture of the U.S. missionary George T. Candlin, who participated in the 1893 Chicago Exposition's World Parliament of Religions (an antecedent of the Pentecostal movement), was accompanied by the caption "This is Pentecost, and behind it is the conversion of the world."

attending the revival with two compatriots in early 1907, Charles H. Mason, one of the two founders of the Church of God in Christ (COGIC), transformed the Holiness sect into a Pentecostal group. His co-founder, C. P. Jones, rejected Pentecostalism and formed the Church of Christ (Holiness) U.S.A. By the early 1910s, the Pentecostal movement had attracted converts in much of the United States, Canada, and northern Mexico with estimates ranging from 50,000 to 100,000 followers.

The initial interracial character of the Pentecostal movement began to break down in the years following the Asuza Street Revival. In 1914, COGIC-ordained white ministers formed the Assemblies of God. Whereas the COGIC, headquartered in Memphis, Tennessee, today constitutes the largest predominantly black Pentecostal group in the

world, the Assemblies of God has evolved, with its present headquarters in Springfield, Missouri, into the largest Pentecostal group in the world. Several years later, Canadian-born Aimee Semple McPherson broke away from the Assemblies to establish her congregation in Los Angeles, which was incorporated in 1927 as the International Church of the Foursquare Gospel. Some Pentecostals, particularly those associated with the Pentecostal Assemblies of the World and the United Pentecostal Church International, emphasized the oneness of God and baptism in the name of Jesus, rather than in the name of the Father, Son, and Holy Ghost. By the end of the twentieth century several hundred Pentecostal sects, many of them African American, had emerged in the United States alone. Both African American and European American Pentecostalism have had a rich history of colorful and even flamboyant evangelists. In the 1940s, Oral Roberts, a Pentecostal Holiness Church evangelist, created a healing and radio ministry based in Tulsa, Oklahoma. "Sweet Daddy" Grace, the founder of the United House of Prayer for All People, functioned as one of the "gods of the black metropolis." Kathryn Kuhlman, a white Presbyterian, and Bishop Ida Robinson, an African American and the founder of the Mt. Sinai Holy Church of America, testified to the ability of women to rise to positions of leadership in the Pentecostal movement, despite the efforts of males to assume dominance. Pentecostal sects also have tended to attract a higher percentage of women than have mainstream denominations.

The Charismatic Movement Develops

While Pentecostalism proper has catered largely to lower-middle- or working-class people, neo-Pentecostalism, or the charismatic movement, has tended on the whole to cater to more affluent people, ranging from the lower-middle class to the upper-middle class. The charismatic movement first spread among some members of mainstream Protestant churches (e.g., Episcopalians, Lutherans, and Presbyterians) in the 1950s and among Roman



Catholics in the 1960s. Demos Shakarian established the Full Gospel Business Men in 1952, and David J. du Plessis, a South African-born Assemblies of God pastor in Connecticut, established connections with mainstream churches by joining the World Council of Churches in 1954 and attending the Vatican II conference as the sole Pentecostal observer. Although the Assemblies of God excommunicated him for these actions in 1962, du Plessis served as an important catalyst in sparking the charismatic movement in mainstream churches. The charismatic movement also received an infusion of energy in the form of the Jesus People movement, a young people's revival that began in California. Jim Bakker, an Assemblies of God minister, and Jimmy Swaggart, also an Assemblies of God minister, joined Oral Roberts as highly visible and influential charismatic televangelists.

The Pentecostal movement within Catholicism began in the spring of 1967 at Duquesne University in Pittsburgh, but later spread to North Dame University and Michigan State University. Although members of the Catholic Pentecostal movement initially called themselves "Pentecostal Catholics" or "Catholic Pentecostals," they later referred to themselves as "Catholic charismatics" for class reasons (McGuire 1982, 4).

Global Diffusion of Pentecostalism

Pentecostalism has spread from its roots in the United States to many other parts of the world, including the Caribbean, Latin America, sub-Saharan Africa, Southeast Asia, South Korea, Britain, and even Eastern Europe. David J. Barrett and Todd M. Johnson (cited in Wacker 2001), renowned statisticians of Christianity, maintain that by 2000 there were 525 million Pentecostals/charismatics (27 percent of the Christian population in the world), which to that date made Pentecostalism the single largest Christian category after Catholicism. Large independent Pentecostal congregations sprang up in large numbers in Latin America and America, particularly during the 1980s and 1990s. Massive conversion to Protestantism, particularly of a Pentecostal variety, has

occurred in Brazil, where various estimates indicate that Protestant churchgoers outnumber Catholic ones on any given Sunday. Many members of Protestant mainstream congregations in Brazil have left in order to establish Pentecostal congregations. Although North Americans introduced Pentecostalism into Latin America, by and large Latinos are now responsible for diffusion of the movement. As in the United States, South African Pentecostalism emerged at the beginning of the twentieth century as a racially integrated movement that attracted blacks and poor Afrikaners and quickly became racially fragmented, in the view of Allan H. Anderson in "Dangerous Memories for South African Pentecostals." (1999). The efforts of various North Americans and Europeans resulted in the formation of the South African District of the Assemblies of God. Many black Pentecostals opted to affiliate themselves with a wide array of African independent sects in South Africa. Some Pentecostals around the globe are interconnected through the Pentecostal World Fellowship, but apparently most are not affiliated with this body.

Interpretations of Pentecostalism

A number of sociologist and religious scholars have written about Pentecostalism as it is now practiced around the world. Robert Mapes Anderson, in *Vision of the Disinherited* (1979), provides perhaps the most insightful analysis of European American Pentecostalism, noting that it serves several functions, none of which seriously challenges the larger society or significantly alters the position of Pentecostals within it. Pentecostalism, he asserts, (1) constitutes a cathartic mechanism for marginalized people; (2) provides career opportunities for its leaders; (3) serves as a "safety valve" for dissatisfaction within mainstream churches; (4) facilitates the migration process from the countryside to the city; (5) instills in its members passivity, industriousness, and thrift; and (6) develops a compliant working class. While the same could be argued historically for African American Pentecostalism as well, an increasing number of black Pentecostal congregations have become more politically and

socially engaged due to the impact of the civil rights and black power movements on a third generation of black Pentecostal ministers. Pentecostal Institutional Temple, COGIC's mother church (located about a mile east of downtown Memphis), played an instrumental role in the establishment of the Ministers and Christians League, an organization that spearheaded a drive that doubled the number of black registered voters in Memphis. Black Pentecostals have won seats on city councils and in state legislatures and have been appointed to minor cabinet positions in the executive branch of the federal government.

Meredith McGuire views the search for empowerment as central to the Catholic charismatic movement. She asserts that even relatively affluent and conservative people in U.S. society "sense that change has 'robbed' them of the power to control the future, to effect their wills on their environment, to know what to expect and to act accordingly" (McGuire 1982, 176). Thomas J. Csordas, in *The Sacred Self*, asserts that the perception of divine presence often instills in Catholic charismatics a sense of security that enables them to overcome memories of traumatic events.

Various scholars have examined the role that Pentecostalism plays in Latin America and other developing and underdeveloped countries. For the most part, Pentecostalism in Brazil and elsewhere in Latin America caters to the poor. Despite the fact that Christian-based communities inspired by liberation theology provided Catholicism with a new lease on life in Latin America, Pentecostalism has proven to be a fierce competitor because of its ability to tap into deeply felt emotional needs and to promise its adherents upward social mobility. Based upon an ethnographic study of Pentecostals in Belem, Brazil, R. Andrew Chestnut, in *Born Again in Brazil*, reports that the great majority of his subjects converted to Pentecostalism during or shortly following a serious sickness. In a similar vein, Thomas R. Lancaster in *Thanks for God and the Revolution* (1988) found that Pentecostal churches in Nicaragua recruit most of their members from the lowest echelon of the poor, many of whom are alcoholics or sick or elderly.

Despite their traditional political fatalism, Pentecostals have also become politically active in Latin America, although they have generally favored conservative candidates such as Rios Montt in Guatemala, a former Pentecostal Sunday School teacher, and Alberto Fujimori in Peru. Indeed, General Augusto Pinochet provided support to Chile's largest Protestant sect, the Pentecostal Church, according to David Stoll in *Is Latin America Turning Protestant?* Some Brazilian Pentecostals have supported left-wing candidates and parties, such as Luiz Inacio Lula da Silva and the Workers' Party. Nevertheless, Chestnut argues that Brazilian Pentecostalism generally "reinforces the political status quo by engaging in the clientelistic politics that predominate in the republic" (1997, 146). South African Pentecostalism for the most part maintained its distance from the antiapartheid movement, although some of the younger black Pentecostals expressed opposition to the regime. In the case of South Korea, Jung asserts that Pentecostalism assumed an explicitly anti-Communist orientation and "produced an ahistorical, apolitical and other-world-centered form of faith" (1999, 151) that served to support the country's capitalist class. Conversely, as Stoll observes, Pentecostal pastors and congregations "tend to retain considerable autonomy in their dealings with state and society" (1990, 319).

An Increasingly Diverse Movement

Pentecostalism, like other religious traditions, is not a monolithic entity. As this essay has indicated, it exhibits tremendous diversity within specific countries, such as the United States or Brazil, and from country to country. At any rate, in the course of a little more than one hundred years, it has become a significant force politically, economically, and culturally. Furthermore, particularly in its charismatic form, it no longer is simply the religion of the downtrodden and disinherited. As a consequence, an increasing number of historians, theologians, sociologists, anthropologists, and other scholars, both Pentecostal and non-Pentecostal, have deemed it a topic to warrant serious consideration with the context of the world-system.

The sociologist David Martin views Pentecostalism, on the one hand, as the Christian equivalent of Islamic fundamentalism in the sense that it constitutes a cultural revolution responding to changes in the large global economy, while, on the other hand, unlike the latter, not offering an overarching political agenda. As a consequence, Pentecostalism, perhaps like Christianity as a whole, may be utilized to support existing sociopolitical and socioeconomic arrangements or to challenge them.

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See also Missionaries; Religious Fundamentalism

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Periodization

History writing, which tries to construct a coherent account of all human societies, requires a structure; periodization, dividing the past into distinct eras, is one technique historians use to create that structure. The technique, however, long involved labeling—the Dark Ages, for instance, or the Renaissance—and thus implied judgments as to the superiority or inferiority of different types of society or different eras of human history.

The past is fluid, complex, and continuous, so any attempt to divide it into neat chronological chunks is bound to be artificial. Nevertheless, history writing, like storytelling, requires a structure, and organizing the past according to distinct eras—a process historians call *periodization*—can help create one. Periodization always does violence to the complex reality of the past, and even the most careful and most honest attempts at dividing up the past involve some distortion. Any scheme must compromise between the often-contradictory demands of clarity, coherence, accuracy, and honesty.

The challenge of finding an appropriate scheme of periodization is particularly complex in world history, which tries to construct a coherent account of the history of all human societies. This article discusses the particular problems that periodization raises in world history, some traditional approaches to periodization, and the compromise solutions that have been adopted as a framework for the *Berkshire Encyclopedia of World History*.

Problems of Periodization

The task of breaking the past into manageable, labeled, chunks of time raises several sorts of problems. We can classify them as theoretical, organizational, and ethical.

Theoretical Problems

Periodization poses theoretical problems because any chronological scheme highlights some aspects of the past and obscures others. While a historian of gender might look for eras in which the relative status and power of women and men changed (the granting of suffrage to women, perhaps, or the emergence of patriarchal social relations in early agrarian societies), a historian of war might be more interested in technological changes that transformed military conflict (such as the use of gunpowder or the appearance of the first organized armies), while a historian of religion might look to the appearance of the so-called universal religions in the first millennium BCE. Different questions highlight different aspects of the past and generate different periodizations. To choose a periodization is to make some critical judgments about what is and what is not most important in human history. By focusing on a particular region, era, or topic, historians can avoid some of these challenges, but in world history, periodization requires judgments as to the most important changes across all societies on earth. Is there sufficient consensus among historians as to what those changes are? At present, the answer is probably no.



Organizational Problems

Periodization also poses severe organizational challenges. How can we find labels that can do justice to many different regions and societies, each with its own distinctive historical trajectory? The problem is peculiarly acute in world history because while neighboring regions or states may evolve in closely related ways, societies separated by large distances may often seem to have little in common. The modern history profession emerged in Europe, and many well-established schemes of periodization were designed to make sense of European history. This is true, for example, of the traditional division into ancient, medieval, and modern periods. Such labels make little sense outside of Europe, but they are so well established that they sometimes get used nevertheless. Similarly, Chinese historians have long used dynastic labels to provide a framework for historical writing, but these, too, are labels that mean little elsewhere. Is it possible to find labels that make sense for Africa as well as for the whole of Eurasia, the Americas, and the Pacific? On this question, too, there is currently no consensus among historians.

Ethical Problems

Periodization also poses ethical problems because it can so easily imply value judgments. School texts on European history have commonly used such labels as “Dark Ages,” “Middle Ages,” “Renaissance,” “Scientific Revolution,” and “Age of the Democratic Revolution.” When used of entire historical periods, such labels were by no means neutral. They were generally used with the clear understanding that the Dark Ages were backward, that the Middle Ages were transitional, and that real progress towards modernity began with the Renaissance. Such schemes carry value judgments about different regions as well as different eras, because they implicitly compare the differing levels of “progress” of different regions. Until recently, it was commonly argued that while Western societies had modernized, many other societies were stuck in earlier historical eras or stages and needed

to catch up. Is it possible to construct a system of periodization that avoids imposing the values of one period or region on another?

No system of periodization can satisfy all these different demands. Like historical writing in general, schemes of periodization reflect the biases and judgments of the era that produced them. They also reflect the questions being asked and the scale on which those questions are posed. This means that no single scheme will be appropriate for the many different scales on which historians can and do write about the past.

Schemes of Periodization

The simplest approach to periodization—one that is present in many creation stories—divides the past into two great eras. These can be thought of as the era of creation and the era of today (as in some Australian Aboriginal accounts), or the eras before and after “the fall” (as in the Genesis story in the Judaeo-Christian-Islamic tradition). Dualistic periodizations offer a powerful way of contrasting the present and the past, either to praise or condemn the contemporary era. Traces of such periodizations survive, even today, in dichotomous schemes such as those of modernization theory, with its stark contrasting of so-called modern and traditional societies.

But most schemes of periodization are more complex, dividing human history into several major eras, each with subdivisions of its own. Dynastic histories weave their accounts of the past using the reign dates of major kings and emperors as their frame. Such accounts are present in Chinese dynastic histories and in the chronologies of Maya historiography. Dynastic histories often imply a cyclical view of the past, in which each era (like each ruler) passes through periods of strength and weakness. Historical accounts conceived within a more linear view of the past often take as their main framework a series of distinct eras, all of which may be seen as part of a larger, universal trajectory. Writing in the eighth century BCE, the Greek poet Hesiod described five great ages of history, beginning with a golden age,

The golden age is before us, not behind us. • **Attributed to
Saint Simon and William Shakespeare (1564–1616)**

in which humans were contented and godlike, and passing through several stages of decline—the ages of silver, bronze, and heroes—and finally to the era of his own day, which Hesiod characterized as one of violence and stupidity.

Patterns of rise and fall have reappeared in more recent writings, such as in the work of Oswald Spengler (1880–1936) or Arnold Toynbee (1889–1975). Marxian historiography offered a combination of cyclical and linear chronologies, beginning with an era of simple perfection (the era of primitive communism), which was followed by stages characterized by increasing productivity and increasing inequality and exploitation. But the Marxist scheme culminated in a future that would resolve these contradictions by combining high productivity with a return to the egalitarianism of the first era.

Most modern attempts at large, synoptic histories have preferred schemes that are fundamentally linear. Such schemes have been greatly influenced by the work of archaeologists and anthropologists, for whom the problem of constructing a periodization covering the whole of human history was often more urgent than it was for historians, who normally focused on shorter periods of time. Because archaeologists, unlike historians, deal mainly with material artifacts, it was natural for them to construct their periodizations around aspects of material culture. The nineteenth-century Danish archaeologists Christian Thomsen (1788–1865) and Jens Worsaae (1821–1885) constructed a scheme comprising three ages—a Stone Age, a Bronze Age, and an Iron Age—that still has some influence within the study of prehistory. In the twentieth century, V. Gordon Childe (1892–1957) built on the Marxist insight that particular technologies imply distinctive lifeways and social structures to argue that the major turning points in human prehistory were the appearance of agriculture (the “Neolithic Revolution”) and the appearance of cities and states (the “Urban Revolution”). Nineteenth-century anthropologists such as Lewis Henry Morgan (1818–1881) and Edward Tylor (1832–1917) offered parallel schemes in which different eras were distinguished by different social

structures in a progressive movement from “savagery” to “barbarism” to “civilization.”

In the late twentieth century, historians, anthropologists, and archaeologists became increasingly sensitive to the dangers of using schemes that imply easy value judgments. So, while most modern schemes of periodization retain a sense of directionality in history, they usually resist the assumption that directionality implies either progress or decline. On the other hand, most modern schemes of periodization at the largest scales still rely primarily on a combination of technological and sociological factors to distinguish between different eras. This is a tradition with roots going back to the earliest written histories. The Sumerian epic of Gilgamesh, which dates from the third millennium BCE, recognizes, in the contrast between the urban warrior hero Gilgamesh and his great friend Enkidu, who came from the wild lands beyond the city, that different technologies imply different ways of living, different systems of ethics, and different types of political and social action. Karl Marx (1818–1883) formalized this insight within the notion of a mode of production. The best justification for such an approach to the challenge of periodization is that fundamental technologies shape so many other aspects of human history, including living standards, demography, gender relations, political structures, and the pace and nature of historical change.

A Periodization for World History as a Whole

The scheme that follows is intended to provide a loose framework for discussing world history at the largest scales. It offers a three-part periodization for human history as a whole, with subordinate periodizations within each of those major periods, which may vary from region to region. This nested structure is, inevitably, an imperfect compromise between various different goals, but it reflects a broad consensus within contemporary writings on world history. At lower levels of generality, articles in this encyclopedia will adopt more specific periodizations that are appropriate for particular questions or regions.

Table 1.
Three Major Eras of World History

Major eras	Approximate Dates (before present [BP] and BCE/CE)	Subordinate Eras	Approximate Dates (before present [BP] and BCE/CE)
<i>The foraging era</i> <i>Societies mainly based on foraging lifeways</i>	250,000–10,000 BP	African origins Global migrations	250,000–100,000 BP 100,000–10,000 BP
<i>The agrarian era</i> <i>Societies mainly based on agrarian lifeways</i>	8000 BCE–1750 CE (10,000–250 BP)	Agrarian communities before cities (later dates outside of Afro-Eurasia) Agrarian communities and the earliest cities and states (later dates outside of Afro-Eurasia) Agriculture, cities, and empires (later dates outside of Afro-Eurasia) Agricultural societies on the eve of the modern revolution	8000–3000 BCE (10,000–5,000 BP) 3000 BCE–500 BCE 500 BCE–1000 CE 1000–1750
<i>The modern era</i> <i>Societies mainly based on modern industrial technologies</i>	1750–today	The Industrial Revolution Twentieth-century crisis The contemporary era	1750–1914 1914–1945 1945–Today

Of the three major eras, the first is by far the longest, lasting for more than 95 percent of the time that humans have lived on Earth, while the modern era is the shortest, lasting just 260 years. On the other hand, populations were small in the foraging era, so that, measured by the number of human lives lived, the agrarian and modern eras loom larger. Perhaps 12 percent of the roughly 100 billion humans who have ever lived, lived during the foraging era, while 68 percent lived in the agrarian era and 20 percent in the modern era. Increasing life expectancies in the modern era mean that, measured by human years lived, the modern era looms even larger, accounting for almost 30 percent of all human years lived, while the agrarian era may have accounted for just over 60 percent and the foraging era for just under 10 percent.

This periodization tackles the central theoretical challenge of world history by taking as its framework three fundamental technological changes. These are the emergence of the first distinctively human societies, all of which relied on foraging for survival, the emergence of agriculture and of societies that depended mainly on

agricultural production, and the emergence of modern, industrial societies. This scheme handles the organizational aspects of all periodization systems moderately well in its first and third eras. Before 10,000 years ago, it is reasonable to argue that all human societies relied on technologies that can be described, loosely, as forms of foraging, so that some useful generalizations can be made about all human societies. But it is also true that foraging societies survived in many parts of the world until modern times, so if we are to define this first era more precisely, we might say that it is the era in which *all* human societies depended on foraging for their survival. In the modern era, too, it is relatively easy to offer a global scheme of periodization because all parts of the world became interconnected and all have been subject to some of the same forces and influences. So we can define the modern era as the era in which the profound technological changes of the last two or three centuries transformed societies throughout the world. The secondary periodization within this era reflects a loose (but by no means universal) consensus on some of the most important transitions within the modern era.



The organizational challenge is most intractable in the agrarian era, from about 10,000 BP to about 250 BP. In this, the era that provides the subject matter for most historical writing, the world was at its most diverse, and no single label can adequately capture that diversity. For most of this era, the histories of Afro-Eurasia, the Americas, and the Pacific world played out in completely separate arenas. While in parts of Eurasia, agricultural societies emerged as early as 10,000 years ago, in Africa and the Americas, all societies relied on foraging for several thousand years more, and in Australia agricultural societies did not exist until the modern era. The best way of defining this era, therefore, is to describe it as the era in which agriculture first began to have a significant impact on human societies in some parts of the world. But the huge differences in timing mean it is vital to opt for flexible subordinate periodizations within this large era. The scheme we have adopted implies the recognition of four broad phases in the history of agrarian societies. These phases occurred at different times in different regions. In the first, there existed agricultural communities, but no true cities and states. In the second, there existed cities and early forms of states and empires. The third phase is distinguished by the emergence of larger and more interconnected systems of cities and states. The fourth phase is defined retrospectively by the understanding that, between 1000 and 1750, the world was on the verge of a transition more revolutionary than any that had occurred in any previous era of human history.

The best way of solving the ethical problems posed by any scheme of periodization is simply to take great care with language and labeling. The labels used here are intended to imply no judgments as to the superiority or inferiority of different types of society or different eras of human history. On the other hand, this periodization clearly does imply a trajectory of some kind. On the largest scales, there can be little

doubt that there is directionality to human history. Foraging, agrarian, and modern societies have not appeared in a chronologically random jumble, but in a clear sequence. And that sequence has an underlying logic that reflects changing human relations with the environment. On large chronological scales, human technologies have changed so as to yield increasing amounts of energy, food, and other resources, which allowed human populations to increase. This, in turn, has given rise to larger and more complex communities, whose technologies and sheer numbers have given them many advantages whenever they came into contact with smaller communities with less productive technologies. There is a shape to human history, and that is precisely why a periodization scheme of some kind is so necessary.

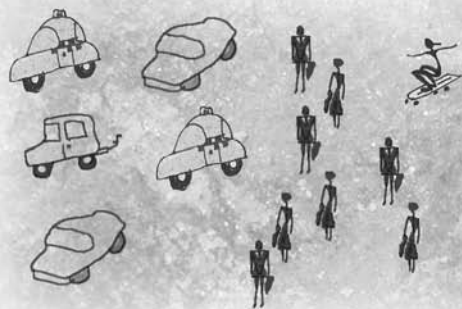
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See also Human Evolution; Long Cycles; World History, Writing of

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Persian Empire

The creation of the Persian Empire in the sixth century BCE—the largest empire the world had yet seen—brought together two of the four early, major river civilizations (those of the Tigris-Euphrates and Nile). Under the rule of Darius I the empire became highly organized, systematic, and efficient. The empire ended with the defeat of Persian forces by Alexander the Great in 330 BCE.

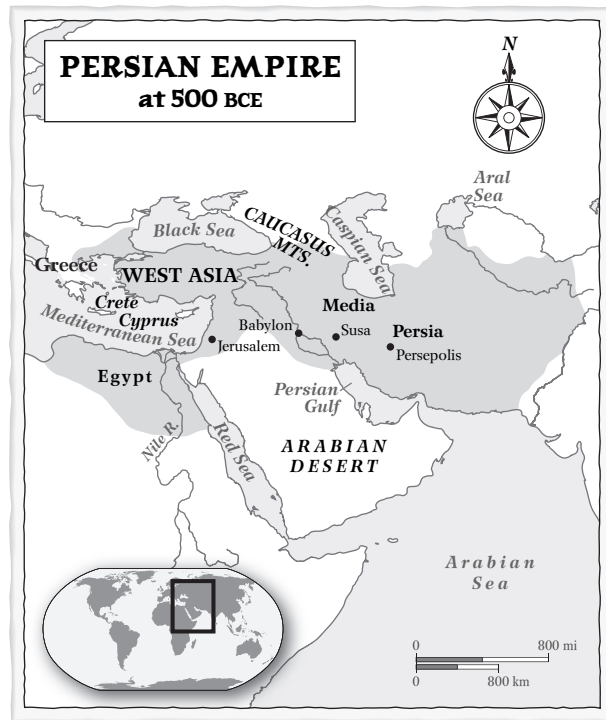
Cyrus II (c. 585–c. 529 BCE) established the Persian (or Achaemenid) Empire in 550 BCE. It included the Plateau of Iran, northern India, Central Asia, Arabia, Mesopotamia, the Caucasuses, Syria, Palestine, Anatolia (Asian Turkey), Egypt, Nubia, Cyprus, and parts of northern Hellas (Greece). The last Persian king, Darius III (reigned 336–330 BCE) was defeated by Alexander of Macedon (Alexander the Great) in 330 BCE. The Persian Empire brought a period of peace to the areas in its sway for two centuries.

The Rise of the Persians

The Persians were a confederation of tribes who, along with other Iranian-speaking peoples, had moved into the Plateau of Iran in the first millennium BCE. They established their stronghold in such locations as Anshan in the southwestern portion of the plateau, in what came to be known as Persis or Fars Province. Cyrus II was able to unite the Persian tribes by 559 BCE and became king of Anshan. A decade later, in 550 BCE, he was able to defeat the last king of the Medes, Astyages (reigned c. 584–550 BCE). He then moved on to Anatolia

and defeated King Croesus (reigned c. 560–546 BCE) of Lydia, taking his capital, Sardis, in 547–546 BCE. His conquest of Mesopotamia and the city of Babylon in 539 BCE followed. Upon entering, Cyrus honored the Babylonian god Marduk and paid for the rebuilding of the temple of Marduk. He also freed the Hebrews who had been held captive in Babylon and paid for the rebuilding of their temple in Jerusalem, for which the Old Testament remembers him and the Persians kindly (Isaiah 35:40–55; Ezra 1). He left behind a firsthand account in the Akkadian language of his tolerance—the “Cyrus Cylinder.” By the time of his death at the hands of nomadic Saka people around 529 BCE, his empire stretched all the way from the Plateau of Iran to the Mediterranean Sea.

Cyrus’s son, Cambyses II (reigned 529–522 BCE), is known for conquering Egypt and incorporating it into the Persian Empire in 525 BCE. Just as his father had been respectful of the Babylonian deities, Cambyses respected Egyptian ceremonies and religion and was accepted as the pharaoh of the twenty-sixth dynasty of the New Kingdom. From Egypt the Persian forces made inroads into Libya, another force went southward from Egypt toward Ethiopia, and although the Persians were unsuccessful in their military campaign, through negotiations they were able to draw that region into their empire. Upon the death of Cambyses, his brother Bardiya (according to some accounts) or an imposter impersonating Bardiya (according to other accounts) came to the throne. Bardiya—or his impersonator—forgave taxes and initiated land redistribution. It was not long, however, before Darius I (reigned 522–486 BCE), who was married to Cyrus’s daughter, staged a coup d’état with the backing of



the Persian nobility and brought his line of the family into dominance.

Darius I and the Organization of the Empire

Darius is responsible for the organization of the Achaemenid Persian Empire. He unified the empire in many ways. For example, he created a uniform system of measurement and weights throughout the empire for better trade and economic activity; Darius also instituted a unified monetary system; gold coins called *darics* became the recognized coinage in the empire. To govern his unified realm, Darius divided the empire into twenty-three administrative units known as satrapies, each to be overseen by a provincial governor, or satrap.

His public works projects included the building of a royal road, which stretched some 2,560 kilometers from his winter residence in Susa (southwestern Iran) to Sardis; it was just one of the many roads that were constructed in the Achaemenid period. Darius also instituted a postal system along the royal road; through a system of 111 stops and hostels, men and fresh horses transmitted royal decrees and proclamations. Another major public works program was the building of a new capital,

known to the Greeks as Persepolis (City of the Persians). Darius brought together craftsmen, engineers, and materials from all the satrapies to symbolize the coming together of all parts and peoples of the empire. Persepolis was a ceremonial capital, at which during the Persian New Year Darius received guests and ambassadors, who came to pay homage and tribute to the King of Kings. Darius also finished an Egyptian project, the building of a canal in the Suez that connected the Mediterranean to the Red Sea more than two thousand years before the British accomplished the same task in 1866. He then set out to make known to the people under what circumstances he had come to power—his version was that he had wrested the throne from an imposter who was impersonating Bardiya—leaving us a long cuneiform inscription (the Bisitun inscription) in the modern-day province of Kermanshah in northwestern Iran. (That inscription, when deciphered in the 1840s, made possible the translation of Assyrian and Babylonian records.) He then had copies of this inscription translated into different languages of the empire on parchment and leather and sent to the different areas to be read to his subjects.

The Greco-Persian Wars

During the rule of Darius I, the Ionian Greeks revolted against Persian rule and asked aid from the Athenians on the Greek mainland. This action started off the long period of warfare known as the Greco-Persian Wars. Darius's son, Xerxes I (reigned 486–465 BCE) had to retake Egypt, which had revolted, and then set out to conquer Greece in 480 BCE. While he was successful initially, he was later defeated at the battles of Thermopylae, Salamis, and the Plataea. In order to destabilize the Greeks, the Persians then developed the strategy of using the Greek city-state rivalries to their advantage, now supporting one side, now the other. It is important to note that while for the Greeks the battle with the Persians was a threat to their very existence, the Persians thought it not worthy of mentioning in the imperial inscriptions.

Later Achaemenid Rule

The rule of Xerxes ushered in the later part of Achaemenid Persian Empire, during which religious toleration began to wither away. Xerxes I was killed in 465 BCE; he was succeeded by Artaxerxes, who reigned until 424 BCE. He was followed by Darius II (423–404 BCE), and Artaxerxes II, also called Mne-mon (404–359 BCE), who had the longest rule of any Persian ruler.

At this time two important women of the court, Stateira and Parysatis, attempted to exert influence on the king. Artaxerxes II's wife, Atossa, also was to become quite powerful. The reign of Artaxerxes III Ochus (reigned 350–338 BCE) was dominated by the suppression of revolts and the reconquest of Egypt and the conquest of Phoenicia and Cyprus. The last Achaemenid king of kings was Darius III (reigned 336–330 BCE). It was at this time that Philip II of Macedon (reigned 359–336 BCE) conquered the Greek city-states. His military innovations greatly improved the Macedonian (and then Greek) military, and under the command of Alexander of Macedon (Alexander the Great, reigned 336–323 BCE), they became a potent force. Alexander is said to have wanted to take revenge for what the Persians had done in Greece a century earlier. He was able to defeat the Persian forces at three decisive battles at Granicus, Issus, and Gaugamela. Darius III fled to eastern Iran and was murdered there by his own countrymen.

Persian Society

The basic unit of the Persian family was known as *tauma*. Several *taumas* formed a clan, and a conglomeration of clans formed the Persian tribe. At the court the king of kings reigned supreme. An important office below the king was the chiliarch, the go-between for the king of kings and those who wanted to seek an audience with him. Then there were the royal princes who lived at the court who were from the clan. The elite of the Achaemenid Persian society was the Persian and the Median nobility, and royal princes were



An illustration of the four-winged guardian figure, a bas-relief found at Parsargadae, on top of which was inscribed in three languages, "I am Cyrus the king, an Achaemenian."

granted a special position. Part of the warrior class of the Iranians, they were exempt from paying taxes, and many served as commanders of the army and the cavalry. The king possessed a special force, ten thousand men strong, known as the Immortals, dedicated to his protection. These Persian royal princes along with the king were the elite rulers. The royal women lived in the private quarter or harem and were protected by eunuchs. They traveled with the king and the nobility in battle and were allowed to own property.



Slavery was a fact of life. Slaves worked mainly as laborers, both on land as harvesters and as manual workers. However, they were paid for their labor when they were working on the land of the Persian nobility and to a lesser extent on the land of small farmers.

Zoroastrianism (Mazdaism) was the dominant religion of the Persians, and Zoroastrian priests (magi) memorized the sacred hymns and kept the rituals alive. The magi are believed to have been a Median tribe who became the religious doctors of the empire. Darius I mentions the great deity Ahura Mazda more than sixty times in his Bisitun inscription alone. Later on the Iranian deities Mithra and Anahita come to be mentioned and honored by the kings as frequently as Ahura Mazda.

For the most part, the Achaemenid Persians were quite tolerant of other religions. Cyrus II paid homage to the Hebrew god Yaweh and to the Babylonian god Marduk. Economic tablets from Persepolis reveal that the state allotted food for non-Zoroastrian sacrifices. Thus, it appears that although the Achaemenid Persians honored Ahura Mazda at their capital and in their homeland, they did not proselytize.

Significance of the Persian Empire

With the creation of the Persian Empire—the largest empire the world had yet seen—in the sixth century BCE, for the first time two of the four early major river civilizations (those of the Tigris-Euphrates and Nile) were practically unified, and their two civilizations brought into contact with one another. This resulted in the exchange of ideas. It also brought about a period of peace (Pax Persica) in those portions of the world controlled by the Persians for two centuries—something that had not been experienced in the past. Although not remembered fondly by

contemporary Greeks, the Persians are remembered with respect and admiration by contemporary Hebrews and Mesopotamians.

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See also Cyrus the Great; Macedonian Empire; Mesopotamia; Zoroastrianism

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Peter the Great

(1672–1725)
RUSSIAN CZAR

An enduring view in world history of Peter I, czar of Russia from 1682 to 1725, sees him single-handedly transforming Russia from a backward fringe nation into a major modern power, even though some of his policies originated with his predecessors. The epithet “the Great” comes in part from his height; he was 201 centimeters (about 6 feet 7 inches) tall.

Peter I (czar of Russia 1682–1725) was a modernizer who inspired Russia’s rise as a major world power. The son of Czar Alexis I (reigned 1645–1676), Peter ruled jointly with his elder half-brother Ivan until the latter’s death in 1696. During the regency of their sister Sophia (1682–1689), Peter pursued hobbies that informed his later reforms, learning to sail and drilling his “play” regiments. In 1686 Russia joined the Holy League against Turkey and in 1697–1698, seeking aid for that war, Peter became the first Russian ruler to visit western Europe. For Peter it was also a voyage of self-education. His experience of Western cultures prompted him to force his nobles to shave off their beards (attributes of piety for Orthodox Christians) and adopt Western dress.

Following peace with the Turks, in 1700 Peter embarked upon the Great Northern War with Sweden. After early defeats, victory at Poltava in Ukraine in 1709 freed him to capture Sweden’s eastern Baltic ports. In 1711 Russia was defeated by the Turks, but a lenient settlement allowed Peter to pursue the Swedish war to a successful conclusion in the Treaty of Nystad (1721). He accepted the titles Emperor, the Great, and Father of the Fatherland.

War was a determining factor in Peter’s reforms. He improved the army and founded a fleet, using

foreign technical expertise. His goal was to train Russians in new skills and develop private enterprise, but the state remained the chief producer and customer. Peter’s government reforms aimed to improve administrative efficiency. In 1711 he founded the senate, in 1717–1720 new government departments known as colleges, and in the 1700s–1710s organs of provincial government based on Swedish models. To rationalize and improve the military and civil service he created the Table of Ranks (1722), comprising a ladder of fourteen grades. Men from the hereditary elite continued to enjoy prominence, although some newcomers made their fortunes, most famously Peter’s favorite, Aleksandr Menshikov (c. 1670–1729).

Peter successfully established technical schools, such as the Moscow School of Mathematics and Navigation (1701), but new elementary schools (1714) generally failed to attract pupils. The Academy of Sciences (founded 1725), initially staffed entirely by foreigners, was his major achievement in this field. The Orthodox Church also ran schools. In 1721 Peter replaced the patriarchate (the last patriarch died in 1700) with a state-monitored committee of clergymen called the Holy Synod to run the church. He restricted entry into monasteries and requisitioned church funds for the war effort.

In 1703 Peter founded Saint Petersburg on former Swedish territory, as a base for the Baltic fleet and a port for foreign trade. From about 1712 it replaced Moscow as the capital. Saint Petersburg became Russia’s “window on Europe.” Its main buildings were designed by foreign architects and its inhabitants had to follow European fashions. In the seventeenth century upper-class Russian women had lived in

Paul Delaroche, *Peter the Great of Russia* (1838). Oil on canvas. Lenin and Stalin admired Peter for “accelerating” Russia’s economic and military development.



semi-seclusion; Peter now forced them to socialize with men. Many Russians, however, resented being uprooted from Moscow to these alien surroundings.

Peter was a practical man. He studied many crafts, including ship building, woodturning, and dentistry. He began his army and naval careers from the lowest ranks as an example to others. But this man with a common touch remained an absolute ruler with an ambitious vision: to make Russia the equal of other European nations and to win their respect. He faced serious problems. More than 90 percent of his subjects were peasants and half of these were serfs. Peter had to extend and intensify serfdom to meet the demand for army recruits, labor, and tax revenues. The nobles, too, found lifelong service burdensome. They had no corporate rights or institutions and they were subject to Peter’s numerous regulations, devised “in order that everyone knows his duties and no-one excuses himself on the grounds of ignorance”—as it was stated in many edicts. These principles extended to Peter’s heir, Alexis Petrovich (1690–1718), the son from his first marriage. Alexis opposed many of his father’s ideas and in 1718 he was condemned to death for treason. In 1722 Peter duly issued a law that required the reigning monarch to nominate an heir, to reduce the risk of an “unworthy” successor. But Peter failed to make a nomination. He was succeeded by his widow, Catherine I (reigned 1725–1727), a Livonian peasant whom he married in 1712.

An enduring view of Peter the Great is that he single-handedly transformed Russia from a backward fringe nation into a major modern power, even though some of his policies originated with his predecessors. At 201 centimeters tall, he was larger than life. Both Lenin and Stalin admired Peter for “accelerating” Russia’s economic and military development. Opinions are divided about the “bal-

ance sheet” of his activities, however. Critics question the heavy cost of his schemes, his use of force, the dangers of excessive imitation, and the split he created between a westernized elite and the peasant masses. He remains a controversial figure in Russia today.

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See also Catherine the Great; Russian Soviet Empire

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Philosophy, Asian

Finding harmony with others and harmony with nature are foundational goals of Asian philosophies. While Indian traditions (Hinduism, Buddhism, and Jainism) focus largely on the individual's path toward harmony with the cosmos, Chinese philosophies (Confucianism and Daoism) depend on finding the right Way (*dao*) to live a prosperous life—and on worthy rulers to administer the state in line with the right values.

Asian philosophies teach notions related to living well in harmony with others and in harmony with nature. Both India and China developed complex responses to issues of cosmology, ultimate meaning, ethics, and human will. Especially today, Asians are seeking to reclaim their philosophical foundations, and intellectuals worldwide see the need to understand traditional and contemporary Asian thought. In south Asia, the profound affect of Mohandas Gandhi's teachings on nonviolence can still be seen. In China, the twenty-first century has seen a resurgence of interest in neo-Confucianism. Understanding the key ideas of Hinduism, Buddhism, Jainism, Confucianism, and Daoism can help put the role of India and China on the world stage in a clearer context.

From the creations myths conveyed in the hymns of the sacred Rig Veda some 3,500 years ago, to the emergence of the Jainism (800 BCE) and Buddhism (500 BCE), and, in the early centuries of the common era, the six distinct paths toward spiritual realization, philosophies originating in India grew from and fostered a number of beliefs: the connectedness between the human order and the larger cosmos; principles of self-sacrifice as a means of fulfillment; the importance

of breath and breathing techniques; the theory of karma (the law of moral causation); hierarchical relationships, rules, and rituals that bring an individual to a place of identification with and empathy for the natural order; and methods of achieving transcendence and interiority. Indian philosophy, then, was largely focused on an individual's path toward harmony with the cosmos.

Ancient Chinese philosophy focused on finding the Way (*dao*), that is, the right way to live a prosperous life. Unlike Greek and Roman philosophers who sought an abstract truth, Chinese philosophers sought the best path to success. The Chinese philosophical tendency inspired a social movement away from aristocratic birth rights to follow worthy rulers with versatile ministers who could administer the state, ensuring safety and a good harvest. The ancient Chinese developed logical argumentation, made scientific discoveries, and invented technology, especially in metallurgy and agriculture, that required a greater need for (and advanced as a result of) these philosophical "disciplines."

Ancient Indian Thought

The philosophy of India begins with the early hymns of the Rig Veda. Chanted, memorized, and kept sacred by priests whose ancestors composed them at least 3,500 year ago, in the northern area of what today is Pakistan and India, these hymns represent the oldest extant literature in the Indo-European language family.

In the creation narrative of the Rig Veda (X: 129), the world begins in a nameless, shapeless chaos. From this beginning, water first emerges, followed by the



Prince Siddhartha cuts his hair, signifying his retreat from the world. Relief sculpture at Borobudur. New York Public Library.

fire of the sun and the movement of breath. Desire wells up from these vaguely perceptible entities, and from desire, that which is below distinguishes itself from what lies above. Sages emerge who perceive that the existent always remains in close proximity to the non-existent. They also proclaim that no one can look to the gods for answers on the ultimate origin of the universe, as the gods were created after that originary moment.

In another hymn, the human body is seen as a microphase of the macrophase realities of heaven and Earth. Human feet touch the body of the Earth. The mid-regions of the body correlate to the rise and fall of the breath. The head reaches up into the sky, with the right eye betokening the sun and the left eye the moon. Furthermore, human social structures also follow the structures of the body. Farmers work the Earth and correlate to the feet. Merchants ply their wares through the movements of the legs. Soldiers and kings protect the people with their strong arms. Priests, teachers, physicians, and law-givers depend on their heads in order to maintain ritual order.

The story of the great warrior Indra, who battles the life-obscurer dragon to release life-giving waters (and hence ensures the flourishing of humans), also embodies early Indian philosophy. From the dreaded, drought-filled state of non-existence (*asat*), Indra allows the emergence of a reliable existent realm or world (*sat-loka*) by releasing the life-giving monsoons with his thunderbolts (*vajra*). Within this realm, people are free to perform sacrifices (*yajna*) to myriad deities, seeking fulfillment through worship of Lakshmi to receive wealth, Sarasvati to receive knowledge, Vak to become strong in voice, and so forth. Having sacrificed and been fulfilled, one dwells for a moment in a state of art, ritual culmination, and

rhythm (*ṛta*) that signals the good life. Eventually, the cycles of life continue, requiring the process again to repeat.

Foundational Traditions

When they emerged by 800 BCE, the early Upanishads (spiritual treatises) signaled new philosophies that form the foundation for later traditions. Desire and the importance of the breath remain constant themes. New insights given forth by such teachers as Yajñavalkya and Satyakama Jabala discuss the primacy of the elements and the importance of orienting oneself within the four directions, the three zones—Earth (*bhu*), the atmospheric zone of life and movement (*bhuvā*), and the sky above (*sva*)—as well as the vast ocean (*udaka*). Yoga, reincarnation, and ideas of karma were first introduced into Brahmanical circles through the Upanishads.

This same historical period saw the rise of Jainism (c. 800 BCE) and later of Buddhism (c. 500 BCE). The Jainas emphasized a rigorous code of ethics designed to rid the human spirit (*jiva*) of the fettering presence of karmic material. This code includes the practice of nonviolence, truthfulness, not stealing, sexual restraint, and the minimal possession of material goods. The early Jainas condemned the elaborate animal sacrifices performed by some Brahmanical communities, and continue to promote vegetarianism.

Siddhartha Gautama (Buddha, c. 566–486 BCE) created a monastic religious order more moderate than that pursued by the Jainas. The Buddha taught an eightfold path to rid oneself of suffering, beginning with the adoption of right view and culminating in rarefied states of meditation. Both traditions created copious literature, detailing their philosophy (purification of soul in Jainism, absence of enduring soul in



Krishna sits on a white snake with a woman who washes his feet. A deity rises above in a lotus flower. From an 1850 version of the *Mahabharata*. Beinecke Rare Books and Manuscript Library, Yale University.

Buddhism), the stories of their great teachers, past life narratives, and detailed lists of rules to be followed.

In the Brahmanical traditions, four goals and an ideal fourfold analysis of life stages emerged. Dharmashastras (Hindus law codes, both sacred and secular, written between 600 and 300 BCE) list the pursuit of wealth and pleasure as the first two great necessities. Next is the responsibility to society (*dharma*). For some, these three goals provide insufficient meaning for human life. In such a case, there is a fourth: the quest for liberation (*moksha*) by following a teacher (*guru*) skilled in techniques and philosophies that lead to transcendence. At the

age of seven, according to the ancient Dharmashastras, one's study should begin and continue for approximately seven years, after which one marries and takes up the life of a householder. In late middle age, one might turn all one's duties to one's children and grandchildren and enter the stage of the spiritual quest (*sannyasa*). Those who gain wisdom then are qualified to teach others.

Six Distinct Paths

By the early centuries of the common era, six distinct philosophical paths arose within Brahmanical India: Samkhya, Vedanta, Yoga, Nyaya, Vaisheshika, and Mimamsa. The first three hold forth spiritual attainment as a human possibility. The last three claim that liberation from the woes of the world can only take place after death. The best hope, according to these three, is to live one's life well, with hopes for reward after death.

Classical Samkhya analyzes life in terms of two major categories, consciousness and activity, with the latter divided into twenty-three subcategories. Activity generates a psyche that differentiates into ego and thought. This psyche, which serves as the repository for karma, can be fraught with anxiety and difficulty, or it can be trained to become pure. The psyche further gives forth the human body, whose action organs (anus, genitals, hands, feet, and voice) are connected to the five senses and to the five elements of earth, water, fire, air, and space. By understanding that all this activity provides experience and liberation for consciousness, one advances toward human freedom.

Vedanta, while not rejecting the details provided by Samkhya, opts for a simpler philosophy. Grounded in some of the great apothegms from the Upanishads, Vedanta proclaims that all things are suffused with an indwelling consciousness linked to God. God is one without a second. All things are part of God. Each individual embodies that God in the form of an individual soul (*atman*). When one sees the true nature of one's soul, then a connection is made with God.

Yoga, building on Samkhya, provides specific ethical and physical practices to move an individual to a state of freedom (*nirbija* or *dharma-megha samadhi*; also referred to as sublime aloneness or *kaivalyam*). These include the cultivation of friendliness, compassion, happiness, and equanimity, as well as the ethical precepts of the Jainas listed above. The Yoga sutras of Patanjali specify the performance of exercises to purify the breath and make connection with the energy centers of the subtle body (chakras).

To live the good life, Nyaya suggests that one be skilled in thought and logic. Vaishesika outlines the categories of the physical world, suggesting that by knowing how the world works, one can optimize pleasure and happiness. Mimamsa provides detailed instructions for how best to perform rituals, noting that an act of worship yields states of deep happiness.

By the late classical period (c. 400 CE) these various traditions were in active conversation with one another. The Buddhists constructed a vast university near modern-day Patna called Nalanda, which housed and trained thousands of monks each year. By this time, vast temple and cave projects gave testimony to the wealth and power of each of these three traditions, Buddhism, Jainism, and what came in later years to be known as Hinduism. Epic literature, including the *Mahabharata*, the *Ramayana*, and the *Puranas* became widespread. These vast texts, in addition to including compelling stories, also served as a vehicle for people to learn about philosophy. The *Bhagavad Gita* emerged as a repository for the teaching of Indian thought, as Krishna (an avatar of Vishnu) informs the reluctant soldier Arjuna about Yoga in its various forms: Knowledge, Action, Devotion, and Meditation.

New Visions

In the seventh and eighth centuries a new movement appeared, Tantra, which arose in both the north and the south. Tantra suggested that rituals might be enacted that would efficiently propel one toward deeper states of power and interiority. It included the violation of conventional morality in order to help

practitioners overcome all forms of attachment. Tantra gave birth to a copious new body of literature, both Hindu and Buddhist, as well as stern critiques of its methods by numerous Jaina monks, for whom the adherence to a strict ethical code was inviolable.

At the same time the young philosopher Sankara, who wrote extensive commentaries on the Upanishads and the *Bhagavad Gita*, advanced a new philosophical articulation known as Advaita Vedanta. Sankara emphasized that the world of change is merely an illusion (*maya*) and that through correct contemplation and remembrance of “not this, not that,” one can sift through the veils and dross and achieve a vision of reality. Other philosophers came to prominence over the next several hundred years, including Abhinavagupta, who articulated a philosophy grounded in aesthetics, and the unnamed author of the *Yogavasishta*, who advanced a view that the world appears and dissolves as if it were a dream, and that we need to find the strength within to manage and purify this dream. Partly in response to the compelling monotheistic theology of Islam, which began to enter India by the eleventh century, devotional movements arose that urge dedication to a single deity, most notably Krishna, particularly as found in the poetry and song of Chaitanya and Mirabai. The middle period of the last millennium also saw the rise of systematic philosophers such as Yashovijaya (Jaina) and Vijnanabhikshu (Advaitin). By this time, Buddhism had retreated from India as the Sultans from the west destroyed Buddhist monasteries and libraries. Hindu and Jaina construction projects were dwarfed by such edifices as the Taj Mahal.

The British period of India saw a resurgence and re-energization of Indian thought. Such thinkers as Ram Mohan Roy, Swami Vivekananda, Rabindranath Tagore, Sri Aurobindo, and Mohandas (Mahatma) Gandhi received Western educations and brought new ideas into dialogue with the ancient texts and traditions of India. Roy was an advocate of a Hindu Universalism. Vivekananda suggested that the Yogas of India would enhance spirituality worldwide. Tagore, a Nobel Laureate, reminded the world of the importance of poetic beauty. Aurobindo rejoiced in

... bearing with the uncultured in gentleness, / fording the river with resolution, / not neglecting what is distant, / not regarding one's companions: / thus one may manage to walk in the middle. • *I Ching*

joining such ideas as evolution with the inner process of self-realization. Gandhi's philosophy of nonviolence revolutionized political strategies. Not only did he successfully campaign for India's independence from colonial rule, he also inspired the civil rights movement in the United States, and the overthrow of Marcos in the Philippines decades later.

Philosophy in India has a long legacy. As the world modernizes, its distinctive stamp can be found not only in the subcontinent, but also in a now nearly universal discourse on theories of karma, dharma, and the life well lived through various forms of Yoga.

Ancient Chinese Thought

Before the state of Qin unified China in 221 BCE, ending the bloody Warring States period (475–221 BCE), Chinese philosophers focused on finding the right Way (*dao*) to pursue a prosperous life, and they expected rulers to administer their governments according to those values. The various philosophers of the pre-Qin period were subsequently categorized into schools of thought. Sima Qian's (145–86? BCE) *Records of the Grand Historian* (c. 99–98 BCE) lists six schools: Confucian, Mohists, Legalists, School of Names, Yinyang School, and Daoists. In Ban Gu's (32–92 BCE) *Standard History of the Former Han*, the "Journal of Literature" by Liu Xin (d. 23 BCE) adds four schools: Agriculturalists, Diplomats, Eclectic School, and Storytellers. Each "school" contains interpretations that are used to subdivide them. There are various sub-schools of Confucianism, Mohism, and Daoism, as well as schools not listed in these ancient records, including the Militarists School, and the Pacifists represented by Song Rongzi. Unsurprisingly, disputes materialized not only about which way (*dao*) was right way, but about how to find it.

Technological changes in agriculture, metallurgy, military arts, and rulership created the need for skilled personnel. The notion of a worthy ruler leading versatile ministers is a shared idea among the various philosophers. Political, economic and cultural changes accelerated during the pre-Qin period, opening a context for new philosophies. Providing

an education for everyone, even commoners, begun by Confucius (551–479 BCE), became popular during the pre-Qin period because of the need for highly trained scholar-knights, officials, and skilled craftsmen. Most of the pre-Qin philosophers proposed that all people, especially the ruler and ministers, adhere to their socially acquired roles. Everyone was to do his or her part for society to function properly. Most of the philosophers looked back to a past golden age to set a standard for harmony among people and with nature. Many of them advocated that everyone is potentially a sage. Aside from these general commonalities, the various philosophers disagreed about the details for achieving harmony and how to properly educate people.

Confucius and His Influence

Confucius believed that the Zhou imperial family and the feudal lords had lost the way of the former kings, the way of the Zhou founders—kings Wen and Wu, and the Duke of Zhou. For Confucius, the *dao* refers to the way of the former kings, the way of virtue. Confucius advocated the popular idea of a past golden age of perfect social harmony. He intended to reform society by reviving past virtues and values; such reform instituted first within the ruling families, would trickle down to commoners through aristocrats. Methodologically, Confucius' teachings begin by instilling filial piety within children. Filial children become loyal ministers. Ontologically, Confucius held that all people are similar at birth, having the ability to be kind. Through improper training, people lose their natural propensity to be kind. Filial devotion maintains the propensity to be benevolent. These teachings promote graded love in which people love close relatives more than distant ones and villagers more than strangers.

The problem of social decay is further abated by virtue education and character development. Ritual action (*li*) is the proper way to promote human kindness (*ren*). All people and especially government officials must be trustworthy (*xin*). People must follow the correct standards of rightness (*yi*). They should



practice moral wisdom (*zhi*). These are commonly called the five virtues; there are many more. Through virtue education people learn their role and practice virtue, resulting in a well-rounded individual and peace in the empire.

The Confucian disciples emphasized different aspects of his teachings. Mencius (Mengzi, 371–289 BCE) argued that people are naturally good at birth. Mencius interpreted the Mandate of Heaven, the divine sanction to rule, to include peasant rebellions. Mencius debated against the individualist Yang Zhu, the Agriculturalists, the Militarists, and the Mohists. His philosophy was revitalized in Song dynasty (960–1279 CE) Neo-Confucianism. Xunzi (fl. 298–238 BCE), who offered a pragmatic Confucianism, proposed that people are born deviant. Education and ritual-action control them. Xunzi argued that a wise ruler follows the way of the recent kings, not the former kings. His teachings influenced the development of Confucianism in the Han dynasty (206 BCE–220 CE).

Mozi (Mo Di, fl. 479–438 BCE) began as a Confucian. Trained in military arts, he defended the underdog. He attracted many disciples. Like Confucius, Mozi believed that the way of the former kings and virtue education are the means to rectify social decay. He attacked Confucius' project. For Mozi, social decay is caused by promoting the family values and graded love of Confucius. Mozi argues that the way of the former kings promotes equal love for each and every person (*jianai*). If people would love each other the way they love their parents, all strife would end with peace in the empire. For the general welfare, Mozi advocated frugality in state functions, opposing the excesses of aristocratic funerals and musical performances that the commons imitated. Mozi criticized offensive warfare as evidence that graded love generates misery. His followers developed methods for defining terms and argumentation.

The Legalists argued for social reform to establish law and order, proposing that Confucianism and Mohism corrupt society by promoting morality over the law. Morality creates social problems because it justified protecting special interests, not the law. As the Western Zhou (1045–771 BCE) incorporated various

ethnic groups and expanded economically, the need for legal governance grew. By the end of the Spring and Autumn period (770–476 BCE) written laws were published. Some Legalists emphasized the need for a well-ordered state administration; written law applied equally to commoners and nobility, the value of statecraft, and political techniques and methods. Han Fei and Li Si studied under the Confucian, Xunzi. They went to Qin to assist Lü Buwei, prime minister to the child king who would become the first Qin Emperor. Han Fei synthesizes Legalist thought, especially the concepts of law, power, and statecraft. He attacks the Confucians and Mohists for claiming to accurately represent the moral way of the early sage rulers, criticizing their morality in favor of the law. Similar legal developments occurred in the ancient Greek and Roman states.

The School of Names (or Logicians) originated among the officials who allocated rewards and punishments. Assessing job titles and performance transformed into a philosophy of linking name and reality. Because debate was the means by which philosophers gained fame and a livelihood, argumentation was emphasized by all the schools. The logicians took rational inquiry into the paradoxical realm. Hui Shi (c. 380–305 BCE) was a friend of the Daoist Zhuangzi. They argued that all things form a comprehensive unity. Hui sought to know that unity through reason and language. Zhuangzi sought it through direct experience. Their ideas can be contrasted with the Greek Skeptics and Sophists.

Grappling with nature's forces, people demarcate bipolar, interconnected yet opposing phenomena, such as heavy/light, dry/damp, hot/cold, bright/dark. This kind of correlative thinking underlies most Chinese philosophy. It is seen in the Greek pre-Socratic thinkers, especially Anaxagoras. At first, yin denoted the shadow, and yang the sunlight. Later they become philosophical concepts, referring to the interconnected yet opposing forces of the universe. Yang is associated with light, movement, the male gender, and life-giving forces. Yin is associated with darkness, tranquility, the female, decay and death. These two forces are interconnected and contain each

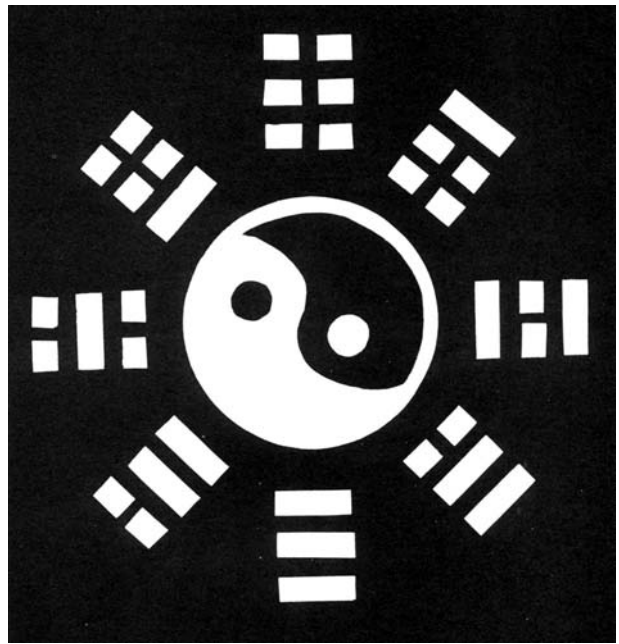
other. They are used to explain why and how things change. They were coupled with the five phases (*wuxing*), namely, wood, fire, earth, metal, and water.

Daoists and the Way

If the Confucians establish the cultural tradition, then the Daoists form the counter-culture. Unlike most philosophers, the Daoists wanted to be anonymous. Some of their ideas are similar to those of Heraclitus. Some of the Daoist practices are similar to the Greek Cynics who withdrew from society. Their meditation practices can be compared to Hindu and Buddhist practices. Daoism originates in ancient shaman-practices such as merging with the forces of nature. These shamanic practices were modified into breathing and meditative techniques (Roth, 1999).

The *Laozi* and the *Zhuangzi* are the two extant texts from the pre-Qin period that form Daoism's core. Lao Dan or Master Lao (Laozi, c. 6th century BCE), is the alleged author of eighty-one poems (chapters) that bear his name, *Laozi*. The text was written by court officials who sought to give advice to their ruler and other officials on the proper way to govern the state by means of self-cultivation that connects them to the forces of nature. The four great things in existence are: the *dao*, sky, Earth, and the king. People take Earth as their model; Earth follows sky; sky follows *dao*, and *dao* follows self-so-spontaneity (Laozi, chapter 25). The ruler is encouraged to behave like the *dao* by taking no purposive action and nothing will be left undone (Laozi, chapter 37). Laozi's contribution to ancient philosophy was his ability to abstract the *dao* into the most general and ultimate category.

According to Zhuang Zhou's (370–301 BCE) biography in the Records of the... Historian, he rejected an invitation by King Wei of Chu (reigned 339–329 BCE) to serve as prime minister. He is the alleged author of the first seven chapters of his namesake book, the *Zhuangzi*, focusing on the theme of self-cultivation by embracing the flow of natural transformation that ultimately leads to entering the silent oneness of the sky, or mystical union with the *dao*. This type of nature



The yin–yang and *bagua* symbols are both significant to the philosophy of Daoism.

mysticism can be contrasted with the transcendental mysticism of the Neoplatonists and Brahmanic mysticism. Living properly in harmony with the forces of nature, the *dao*, and dying in harmony with nature is the ultimate mystical experience. Zhuangzi's philosophy emphasizes the importance of living in harmony with change. Zhuangzi recognizes that people are preoccupied with others' opinions. So they work hard, live in distress, and die young. He proposes that people practice meditation and reduce stress and conflict to bring them into harmony with the *dao* of nature.

The first three texts, the *Shizi*, the *Lüshi chunqiu*, and the *Huainanzi*, listed under Eclectic School in the "Journal of Literature," are philosophical works that employ a unified philosophy, drawing from the other schools. The *Shizi* (c. 300 BCE), survives in fragments, synthesizes other philosophies. The syncretic, unified philosophy of the *Lüshi chunqiu* (238 BCE), and the *Huainanzi* (130 BCE) are more obvious. The *Lüshi chunqiu* organizes the philosophical systems under the seasonal calendar such that Yang Zhu's individualism, Daoist non-action, and Mohist love are practiced in the spring; Confucian education, ritual, and music are studied in the summer; military and legal affairs are reserved for the autumn, and Mohist frugal funerals, Legalist administrative matters, and executions are suited for the

winter. This eclectic trend influenced Han dynasty literature and philosophy.

The Militarists are not listed among the other schools in the Han histories. They were given the honorary title of Master (*zi*) that is bestowed on the philosophers. Sun Wu (Sunzi) is famous for his work on strategy, the *Art of War*, which is studied at military academies today. His text recognizes the importance of developing moral virtues in the troops to bolster their loyalty, and proposes only engaging in just war.

The pre-Qin period was a turbulent yet important time for Chinese philosophy. Aspects of the various schools were absorbed into Han dynasty Confucianism, making it comprehensive and viable. Although Confucians disdain Legalism, the imperial “Confucian” state sponsored by the Han and subsequent dynasties could not have prospered without a legal system, first and foremost, in addition to the system of ritual for controlling the masses, and for diplomacy with other countries. Given the eclectic character of the subsequent development of Confucianism and Daoism, the Eclectic school left a lasting impression on Chinese philosophers as they continued their search for the right Way.

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See also Confucius; Confucianism; Buddha; Buddhism; Daoism; Gandhi, Mohandas; Hinduism; Jainism; Laozi; Mencius; Philosophy, Modern; Philosophy, Greek and Roman

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Philosophy, Greek and Roman

Greek and Roman philosophy evolved in the ancient world amidst inquiry about the nature of reality and the relationship between reason and emotion. Plato and his student Aristotle (and their disagreement about Plato's Theory of Forms) are perhaps most recognizable in the modern world, but the claim of Heraclitus (fl. 510–490 BCE)—that wisdom is gained by understanding how reason guides the world—characterizes all subsequent Western philosophical thought.

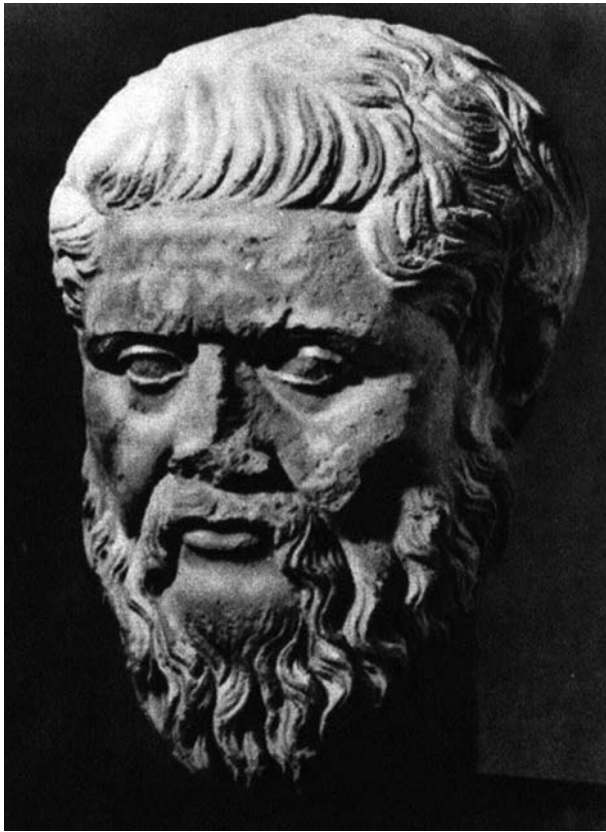
Philosophy, derived from the Greek “love of wisdom,” is the rational inquiry into the truths and principles of existence, knowledge, and ethics. It includes cosmology, natural history, ethics, epistemology, and politics. The root of Western intellectual heritage, Greek and Roman philosophy developed in an atmosphere of contentious debate, and investigated key intellectual questions: the nature of reality; and relationships between logic and reality, knowledge and skepticism, reason and emotion. Most original writings are lost; of the Greeks, only Plato's and Aristotle's survive. Most Greek philosophy is at best partially reconstructible from later, often hostile, writers whose brief extracts usually lack context.

Pre-Socratic

Early Greek philosophy, labeled “Pre-Socratic” despite the inclusion of thinkers contemporary with Socrates, originated circa 600 BCE in Miletus in Ionia (Turkey), a wealthy Greek port town where thinkers encountered Near Eastern innovations in medicine, agriculture, mathematics, and astronomy. This contact

inspired Milesian philosophers to ask new questions about the world. What are the ingredients, composition, and operation of the natural world? Is *phusis* (nature) one thing or many? What is the process of change whereby things come into being, pass away, and are transformed from one thing to another? Eschewing magic, gods, and the personification of nature, philosophers explained existence according to observable principles in nature. Three Milesian material monists—monism puts forth the belief that one fundamental substance is the *archē* (original source) of all existing matter—offered slightly differing interpretations. Thales (fl. 600–545 BCE) theorized water as his *archē*, perhaps from observing the generative nature of moisture (seeds require water to germinate). Anaximander (fl. 580–545 BCE), believing that water was too specific, proposed a substance containing all the opposites, thicker than fire but finer than air, indestructible, indeterminate, intermediate, infinite—to *apeirōn* (the boundless). Anaximander, hypothesizing a mechanism to explain how matter interacts, significantly suggested that material objects are separated from *to apeirōn* through condensation and rarefaction. Anaximander's pupil Anaximenes (fl. 555–535 BCE), who posited air as his *archē* but retained Anaximander's principle of condensation and rarefaction, adapted this paradigm of a unified theory of matter and energy. The monists (rightly) believed matter cannot be created or destroyed, only altered.

Heraclitus of Ephesus (fl. 510–490 BCE) shifted the focus of Greek philosophy from cosmology to epistemology. For Heraclitus, repudiating empiricism, *logos* (reason) is the organizing principle of the cosmos, and fire is either the *archē* or the catalyst effecting change. The principle of Strife maintains equilibrium



Sculpted head of Aristotle, pupil to Plato and tutor to Alexander the Great. New York Public Library.

in sensible matter and enables change in the world. Heraclitus raised a question that would dominate future thinkers. Is change possible? If so, how does change in matter happen? His claim—that wisdom is gained through understanding how *logos* guides the world—characterizes all subsequent philosophy.

Ensuing thinkers developed pluralistic physical systems. Empedocles (fl. 460–430 BCE) suggested a four-element theory (earth, water, air, fire), favored by Aristotle. Change results from the oscillating forces of Love and Strife: when the universe tends to total Love, the elements are completely mixed; when Strife dominates, the elements are completely separated. Democritus (fl. 440–380 BCE) proposed the atomic system, promoted by the Epicureans: the sensible world consists of void (nothingness) and atoms, uncuttable building blocks of nature, potentially infinite in size, shape, and texture. Anaxagoras (fl. 480–430 BCE) posited the radically pluralistic (and stridently rejected) system of seeds, wherein a portion of everything exists in everything, evoking Anaximander's *to apeirōn*.

Although thinkers continued to debate cosmology, focus turned towards ethics and epistemology. The Pythagoreans in southern Italy fostered two distinct schools (fifth century BCE): *mathematicoi* and *acousmaticoi*. The *mathematicoi* (the knowers) advanced a physical system of numerical atomism: all things derive from number, and the properties of number determine the properties of matter, a nascent step towards deductive proof. In contrast, the *acousmaticoi* (the listeners), emphasizing mysticism and authority, were likely influenced by Thracian or Scythian shamanism. The *acousmaticoi* adhered to a communal, ascetic lifestyle, promoting strict ritual purity (especially abstinence from bloodshed), wherein adherents remained free from pollution to enable the soul to rise to its true and god-like state. Xenophanes (c. 520 BCE) was the first Greek to form a concept of a cosmic god (evolving into Plato's Demiurge and Aristotle's Unmoved Mover) and to contemplate the distinction between opinion and knowledge systematically. Satirizing anthropomorphism and polytheism, he wrote, "if cattle or horses or lions had hands and could draw, and could sculpt like men, then the horses would draw their gods like horses, and cattle like cattle; and each they would shape bodies of gods in the likeness, each kind, of their own."

Parmenides (fl. 490–450 BCE), promoting abstraction, categorically denied the value of empiricism. Believing that there exists only *being*, a single, unmovable, unchangeable entity, Parmenides distinguished between reality (The Way of Truth) and appearances (The Way of Seeming). Change is impossible; existence is timeless and static. In contrast, the world of appearances is deceitful, human interpretations of nature are fallacious (as Heraclitus thought), and apparent change in the world is illusory. Significantly, Parmenides, who had studied under Pythagoreans, employed deductive "proofs"—carefully structured arguments leading from "correct" initial assumptions to incontrovertible conclusions—influencing future rational dialogue.

Philosophers responded in various ways to Parmenides's assertions about change. Zeno (c. 490–430 BCE), whom Aristotle called the "Father of Dialectic,"



Jean-Léon Gérôme, *Socrates Seeking Alcibiades in the House of Aspasia* (1861). Oil on canvas.

employed paradoxes to explore Parmenides's claims. In the paradox of Achilles and the tortoise, Zeno suggested that the fleet-footed hero could never overtake the sluggish tortoise since Achilles must first cover half the distance traveled by the tortoise. Since it is impossible for Achilles to traverse an infinite number of points (Zeno assumed that space is infinitely divisible), the tortoise will always remain some distance ahead. Aristotle criticized Zeno's premise as faulty.

Sophists

The sophistic movement of the fifth century BCE represented a new intellectual approach: traveling scholars taught intellectual skills, especially rhetoric and persuasion, for money, hence, as Plato argued, debasing those skills. The Sophist Protagoras (fl. 460–420 BCE), famously claiming that “Man is the Measure of All Things” (quoted without context), promoted an epistemology of relativism—a belief is true provided it appears true to the believer—which Plato refuted.

Plato

In tackling questions of cosmology, ethics, epistemology, and the nature of *phusis*, and in directing attention to rules of reasoning, argumentation, and theory-assessment, Plato (427–348/7 BCE) is the culmination of the Pre-Socratic achievement. Plato studied

under Socrates, who wrote nothing, but firmly shifted philosophy to politics and ethics. Plato is as influential for his thought as for his genre: in his dialogues he never appears as a speaker, but writes as several different characters (Socrates being the most persuasive and influential); the tactic distances Plato from the views of his interlocutors and forces the reader to engage actively with complex and sometimes inconclusive issues instead of passively accepting Plato's authority.

Plato believed that order in the universe was beauty (*ta kalon*, literally “the beautiful”) and that things displaying order are worth studying. Plato also proposed the first systematic teleological account of the cosmos, constructed according to plan by the Demiurge, a benevolent and rational Craftsman who, with the best arrangement in mind, imposes order externally. To answer Parmenides's rejection of change, Plato proposed the Theory of Forms. Incorporeal, insensible, changeless, and knowable, Forms exist eternally and changelessly, in contrast with the changing world of becoming. Objects in the sensible world are merely shadows of idealized Forms, for example, no two tables are ever alike to the smallest detail (knots, warping), and no sensible table will ever replicate the ideal. Sensible tables, nonetheless, partake of the ideal (shape, materials, function). Hence, both change and stability are genuine. The Allegory of the Cave, in *Republic* book 7, illustrates the theory.

The difficulty of ascertaining Plato's authentic ideas (presented ambiguously in the dialogues) gave rise to two major Platonic traditions. His school at Athens, the skeptical Academy, active until the first century BCE, argued against other philosophical views without advancing original views of its own. Later Platonists sought to study and further Plato's ideas systematically.

Aristotle

Plato's most famous student was Aristotle (384–322 BCE), mentor of Alexander the Great (Alexander of Macedon), and a scholar who maintained absolute ascendancy over European science until the seventeenth century. Extant are Aristotle's unpolished lectures delivered at his school in Athens, the Lyceum. Rejecting the mathematization of nature, Aristotle established methods of research and inquiry, favoring empirical observation and deductive argument.

Rejecting Plato's theory of Forms, Aristotle argued that objects could be understood only through knowledge of function and that sensible objects were reducible to four causes: (1) formal—received by a thing (shape); (2) material—the thing underlying a form (for example, marble); (3) efficient—effecting change (for example, a sculptor); (4) final—the purpose served by the change (for example, beautification or patronship). The final cause takes priority over but does not exclude the others: a saw's purpose determines its material (iron) and form (shape). Properties (for example, color, weight, texture) cannot exist independently from their objects, and objects are composites of form (hardness, color) and matter (rock, wool): for example, there are no perfect dogs, just individual dogs, some with droopy ears, others with short tails. Aristotle avoids the Parmenidean problem of change in arguing that change occurs not from non-being to being but from potentiality to actuality: seeds are potential plants, and growth occurs by addition. Change occurs with respect to substance (birth or death), quality (wax softens with

heat), quantity (growth and diminution), place (motion). Change and motion can be traced back to the natures of things: it is the nature of an acorn to become an oak tree.

Hellenistic Philosophy

Under Alexander the Great, a new spirit of internationalism expanded cultural possibilities, especially at centers of learning that attracted students from the entire Greek-speaking world. Philosophical schools flourished in Athens and Alexandria, and writings were formalized into three genres: (1) successions (lineages of teachers and pupils, including major and minor figures); (2) doxographies (systematic accounts of views of different philosophers on certain topics, arranged to demonstrate contradictions or differences between schools); (3) treatises on schools of thought (summaries of a school's main doctrines).

Two schools of thought prevailed: Epicureanism and Stoicism. Both shared the same aims: to secure happiness, and to be free from anxiety and fear. Both taught that irrational fears derive from ignorance of the causes of natural phenomena. Both considered the study of physics and ethics essential in eradicating irrational fears and achieving the *summum bonum* (the highest good), and they agreed that the purpose of philosophy is to obtain peace of mind. The schools disagreed on details of physics and methods of seeking the *summum bonum*.

Epicureanism

Epicurus (fl. 310–270 BCE) reflected the Hellenistic spirit of individualism and self-expression in a culture where there remained few opportunities for political career and government involvement. Epicurus's system of philosophy, ethics, and physics, taught at the "Garden," his school in Athens, was derived from atomism. Augmenting Democritus's atomism, Epicurus asserted that atoms move constantly downward but are occasionally subjected to

A great value of antiquity lies in the fact that its writings are the only ones that modern men still read with exactness. • **Friedrich Nietzsche (1844–1900)**

“swerve,” enabling collisions (resulting in compound objects), hence reconciling conflicts between teleology (fate) and free will. Epicurus believed in a materialistic cosmos strictly guided by the properties and arrangement of atoms, whereby all phenomena could be explained.

Epicureanism has its most eloquent expression in the Latin poet Lucretius (c. 90–55 BCE) whose epic poem *On the Nature of Things* preserves Epicurus’s teachings. Lucretius asserted the materialistic nature of the world. Only atoms and void endure. Atoms and void account for change in the world. Sensible objects (including the human soul) are created from and destroyed back into constituent atoms. Individual atoms can recombine to create any number of sensible objects or living creatures. That atoms exist is provable by observation: wind can be felt; water evaporates; metal and stone erode. All phenomena, including disease and extraordinary natural phenomena (lightning, thunder, earthquakes, rainbows, volcanoes, magnetism), can be explained by the properties of atoms. The greatest good is *ataraxia* (freedom from anxiety), achieved only through study of natural philosophy to counter superstition and fear caused by ignorance. Learning and study cannot eradicate natural inclinations but can rearrange the soul’s atoms so that humans may live in a state of *ataraxia*.

Stoicism

Zeno (c. 334–262 BCE) founded a school in Athens at the *Stoa poikile* (painted porch), which gave the school its name. Stoicism sought to conform private and political existence to an orderly cosmos. Following Aristotelian physics (plenum, mutable and transmutative elements, natural motion), Stoics believed that everything is in contact with a fiery divine soul, and that elements derive from and will return to fire. Change and movement occur through *pneuma* (soul, spirit), binding the cosmos via *tonikē kinēsis* (kinetic tension) which in turn imposes cohesion and equilibrium with simultaneous motion in opposite directions.

The Stoics adapted the ethical system of the Cynics, whose followers interpreted the dictum “live according to Nature” with extreme primitivism. Stoics maintained that emotions are always bad, the only good is virtue, and virtue alone is sufficient for happiness. Virtue includes fulfilling obligations to the state (for example, political life). Consequently this duty-based philosophy flourished among obligation-obsessed Roman intellectuals, including Cicero, Seneca the Younger (c. 4 BCE / 1 CE–65 CE), and the emperor Marcus Aurelius (121–180 CE).

Roman Initiatives

Philosophy largely remained the purview of Greek intellectuals. Until the mid-first century BCE Romans, who expelled philosophers from the city by praetorian edict (in 161 BCE), rejected Greek philosophy as impractical, distracting, and disruptive. Romans eventually found Greek ethics attractive but eschewed speculation and mathematics. Cicero promoted mathematics only for sharpening the wits. Greek philosophy became Romanized with its emphasis on politics, ethics, and duty.

Cicero (106–43 BCE), heavily influenced by the skeptical tendencies of Platonism, made philosophy accessible to a Roman audience. He summarized the major philosophical schools and mined Roman history for examples of appropriate conduct and illustrations of philosophical arguments. Developing a Latin philosophical vocabulary, Cicero invented Latin words (*essentia*, *qualitas*, and *moralis*; essence, quality, and moral in English) to translate Greek concepts. He employed philosophy politically, hoping to defend and revive the Republic through renewed commitment to virtue among the ruling classes, motivated by desire for fame, wealth, and power.

Cicero prominently influenced later philosophers: Augustine (354–430), turned from sin to philosophy and God by Cicero’s (now lost) *Hortensius*; Thomas Hobbes (1588–1649) and Bernard Mandeville (1670–1733), arguing against moral



Cesare Maccari, *Cicero Denounces Catiline* (1882–1888). Fresco. Cicero mined Roman history for examples of appropriate conduct and illustrations of philosophical arguments.

skepticism; David Hume (1711–1776), whose *Dialogues Concerning Natural Religion* was modeled on Cicero's *De natura deorum* (On the Nature of the Gods); and John Locke (1632–1704), whose political philosophy is reflected in the U.S. Declaration of Independence.

Neoplatonism

The final stage in ancient philosophy was with Neoplatonism (a modern term), the dominant philosophical system of the late antique world. It deeply influenced Christianity, Byzantine, and Islamic philosophy, and Renaissance Humanism (with the interest of the fifteenth-century thinkers Giovanni Pico della Mirandola and Marcilio Ficino). Incorporating Aristotelian logic, Stoicism, and mysticism, Plotinus (204–270 CE) aimed simply to elucidate Plato's philosophy and defend Platonism against Peripatetic and Stoic critics. But his interpretations, especially regarding the nature of the soul, evolved into an original scientific philosophy of religion. Investigating the relationship between soul and body, Plotinus posited three underlying, intelligible, and divine substances: the One (identifiable with the Form of the Good of Plato's *Republic* book 6, the ultimate cause of the sensible world); the Intellect; and the Soul, from which everything else transpires. Plotinus identified the human self with the transcendent, intellectual soul (not the embodied soul which enlivens the body). The highest goal of

existence is the soul's return to the One through *henosis* (unity).

His student Porphyry (c. 233–305 CE) published Plotinus's writings and wrote commentaries on them. Porphyry's student Iamblichus (fl. 300–327 CE), incorporating Pythagoreanism, argued that the connected soul pervades the body. Theurgy, hence, is necessary to liberate the soul from the pollution of the body. Later Neoplatonists include Proclus (411–485 CE), who sought to systematize all Greek philosophy, and John Philoponus (490–570 CE), whose commentaries on Aristotle provide continuity between the Greco-Roman, Islamic, and Renaissance traditions.

Despite the emperor Justinian's closure of the Academy in 529 CE, Greek and Roman philosophy endures, as thinkers continue to address questions raised by Greco-Roman philosophers and engage with their answers.

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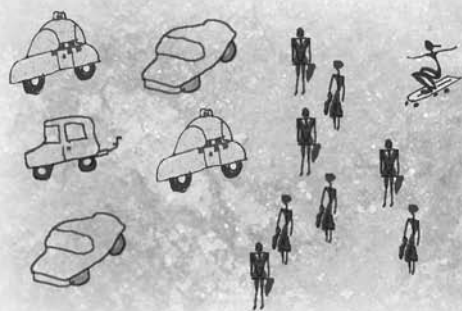
See also Alexander the Great; Aristotle; Cosmology; Greece, Ancient; Plato; Roman Empire; Socrates; Science—Overview

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Philosophy, Modern

Beginning with René Descartes (1596–1650), modern philosophers in the West began to reexamine ancient questions about whether the foundation of knowledge is in the mind or the senses—that is, in reason or experience—sometimes by drawing on scientific, mathematical, and analytic approaches. Despite radically differing opinions, these modern thinkers gave primacy to the rational mind, and especially consciousness, as the starting point for philosophical reflection.

Philosophy is a form of rational inquiry into the nature of reality. Though there is no decisive date that marks the beginning of modern philosophy, René Descartes (1596–1650) is generally considered the first modern philosopher. The fact that philosophers often work on problems raised by much earlier philosophers, however, makes it hard to divide sharply between periods. Because modern philosophers disagree radically on the nature of philosophy, it is also difficult to define what is unique about modern philosophy. Nevertheless, in contrast with ancient and medieval philosophy, one distinguishing feature of modern philosophy is the primacy it gives to the human mind, and especially consciousness, as the starting point for philosophical reflection. Though by no means uncontested, this concern for the subjective primacy of rational inquiry played an important role in helping to articulate the distinctively Western experience of modernity.

From Descartes to Kant

René Descartes was a veteran of the seventeenth-century wars of religion that ravaged Europe, and

his desire to find a secular foundation for knowledge that would escape entanglement in religious disputes had an enduring influence on the shape of modern philosophy. Striving to imitate the precision of mathematics, Descartes proposed to show how the human mind can reliably know things by describing cognition from within. This involved carefully distinguishing between what the mind could know as “clear and distinct,” and the potentially deceptive impressions of the senses. Though himself not a skeptic, Descartes has been accused of encouraging skepticism by thus radically separating mind and body. His own solution to this “Cartesian dualism” was to insist on the reality and benevolence of God as guarantor of clear and distinct knowledge.

Following Descartes, philosophy came to be divided into what historians of philosophy call rationalism and empiricism. Rationalists follow Descartes’s insistence on the unreliability of sense perception, and respond by treating the components of thought (intuitions, ideas, etc.) as primary data for understanding the true nature of reality. They also follow Descartes by holding that the connections between physical and spiritual reality lie, ultimately, in the essence of God, who is characterized less as a personal deity than a logical necessity to explain reality. Leading rationalists include Baruch Spinoza (1632–1677) and Gottfried Wilhelm Leibniz (1646–1716). Empiricists, on the other hand, reject the notion that the mind knows only itself. They stress the immediate encounter with sensory impressions as the proper starting point for philosophical reflection, and warn against the potential of unchecked speculation to muddy the otherwise clear presentation of reality in the senses. Though often seen as an antidote to the skepticism resulting



Pages from *Principia philosophiae* by René Descartes (1596–1650).

Beinecke Rare Books and Manuscript Library, Yale University.

from rationalism, extreme empiricism can also undermine certainty about knowledge. David Hume (1711–1776), for instance, observed that there was nothing in the sensory perception of causal events, like one billiard ball striking and moving another, which explained how the mind perceived such events as necessary.

The Königsberg philosopher Immanuel Kant (1724–1804) proposed to resolve the dilemma Hume raised by establishing the limits of reason, and understanding how within those limits, the mind was able to have certain knowledge. In his *Critique of Pure Reason* (1781), Kant argued that the necessity one experienced when perceiving causality was an effect of the way the mind organized the experience. It was, properly speaking, “synthetic *a priori*” knowledge: synthetic, because it required experience of the event, *a priori*, because the necessity supplied in and by cognition was itself logically prior to any experience. Any attempt to thus radically prioritize either reason or experience in the manner of extreme rationalism or empiricism, was thus doomed to failure. Instead, according to Kant, philosophy must begin with a wholesale “critique” of the conditions for the possibility of any knowledge. This drive to make philosophy both systematic and critical played a major role in shaping the great philosophical systems of the nineteenth century. It was also, in part, what motivated dissenting voices to join in the broadly artistic, but also philosophical, movement known as Romanticism. Drawing on the philosophy of Jean-

Jacques Rousseau (1712–1778), who stressed society’s corrupting influence on the natural goodness of individuals, Romanticism sought to rehabilitate the importance of the natural and nonrational dimensions of human life.

Kant’s critical philosophy was a major achievement, but did not satisfactorily bridge the gap left by Cartesian dualism. Indeed, Kant himself seemed, to many, to have reinforced the problem by steadfastly denying that the phenomena of perception could tell us anything about “things in themselves.” Kant’s critical philosophy thus led to a truncated conception of experience in which, as with the rationalism he claimed to overcome, the mind only really knew itself. What distinguished Kant from Descartes, however, was Kant’s analysis of a “transcendental” realm of categories that, while not part of the empirical world, were also not reducible to human psychology. This transcendental realm was especially important for the evolution of absolute idealism in the nineteenth century.

Great Systems of the Nineteenth Century

Associated with figures like Johann Gottlieb Fichte (1762–1814) and the early work of Friedrich Schelling (1775–1854), absolute idealism went beyond the notion that reality was only knowable through the mind to the proposition that reality was fundamentally identifiable with mind. For Fichte, and subsequently

for Georg Wilhelm Friedrich Hegel (1770–1831), looking for the nature of reality by supposing the activity of the material world on human perception was a dogma that Kant had inherited from the empiricists. The transcendental deduction of categories showed, on the contrary, that reality itself was fundamentally immaterial, or “spiritual.” The task for philosophy therefore was not to understand how thought conformed to the physical world, but to understand how spirit manifested itself as reality. Hegel solved this question by analyzing the course of world history, claiming to show how the unfolding of concrete concepts and forms of thought was nothing but a dialectic through which spirit came to know itself by negating and superseding previous thoughts. According to Hegel, the goal of history to realize World Spirit in self-consciousness expressed as freedom; he devoted his philosophical career to elaborating a comprehensive system devoted to showing this progression in all aspects of world history.

Though discredited in the eyes of philosophers today, Hegel’s attempt to explain systematically the course of world history inspired a generation of philosophical followers. The most famous of these so-called young Hegelians was the philosopher and political economist, Karl Marx (1818–1883). Marx advanced an inversion of Hegelian philosophy that he called “dialectical materialism.” Where Hegel saw the movement of history in terms of a dialectical movement of spirit, Marx held that the dialectic of material conditions was the primary mover of history. This dialectic manifested itself in concrete terms in the class struggle, but was equally at work in forms of thought, like religion and philosophy, that Marx exposed as ideology. Though this led Marx to abandon philosophy in favor of political economy and history, his early philosophical work manifests a deep concern for the underpinnings of human freedom that is revived in the twentieth century as a kind of Marxist humanism. This turn from philosophy to political economy finds an important parallel in the “positivism” of Auguste Comte (1798–1857). Like Hegel, Comte sought to understand systematically the unfolding of world history, but argued that rigorous



Julius L. Sebbers, *Georg Wilhelm Friedrich Hegel* (c. 1828). Hegel sought to understand how spirit manifested itself as reality, not how thought conformed to the physical world.

empirical science and not philosophy was the pinnacle of human knowledge.

Phenomenology

By the end of the nineteenth century, modern philosophy felt decisively overshadowed by the rise of the natural and social sciences alike. The catastrophic destruction of World War I also prompted many to question some of the more pretentious claims of philosophy, and Western civilization as a whole. In this context, Edmund Husserl (1859–1938) sought to rejuvenate philosophy by putting it on a scientific footing. For Husserl, one needed to distinguish precisely between the contents of consciousness and the means by which consciousness grasped these specific contents. By thus “bracketing” the contents of consciousness, one could then isolate the “eidetic essences” by means of which consciousness comprehended the great variety of particulars in experience. Such essences were

Work while you work, play while you play—this is a basic rule of repressive self-discipline. • **Theodor Adorno (1903–1969)**

not, as in Plato, meant to imply the existence of real universals, but served instead as working postulates for discriminating necessary from accidental features of acts of consciousness. Though criticized by some as “psychologism,” apprehending the acts of consciousness with an almost empirical rigor convinced Husserl that he had established the subjective basis for pure logic. Phenomenology exerted a strong appeal both inside and outside of philosophy, and has been influential in areas such as sociology and hermeneutics. One important legacy of phenomenology is the concept of *lifeworld*, which draws attention to the links between science and other formalized modes of thought and the conditions of everyday life.

Existentialism

One of the most influential students of phenomenology was Martin Heidegger (1889–1976). Though his philosophical work is often considered suspect because of his support of the Nazi movement in Germany, Heidegger achieved a substantial reorientation in philosophy by recalling the original Greek concern for the question of being. This original metaphysics cannot and should not be subjected to scientific inquiry, because it precedes it as the basic question about human existence as such. Indeed, for Heidegger, humanity is defined precisely as the being for whom being is a matter of concern, and this led him to stress the decisive importance of death as the end toward which being knows itself to be moving. Based on his refusal to subject the question of being to analysis by mundane scientific tools, the later Heidegger defended the thesis that language and even poetry were better suited to what he called the “task of thinking.” He developed increasingly complex modes of expression as a result, and this linguistic esotericism has influenced the evolution of postmodern philosophy.

Though Heidegger is usually taken to have inaugurated the “existential” turn in philosophy, one should not overlook the strongly existential dimension of earlier thinkers such as Søren Kierkegaard (1813–1855) and Friedrich Nietzsche (1844–1900). A critic of Hegel, Kierkegaard held that key personal decisions in

life, such as love and faith, could never be subsumed philosophically in a system. Throughout his many writings, he drew attention to irresolvable contradictions as a means of heightening consciousness of oneself as the arbiter of existence. Similarly, Nietzsche sought to expose the lifeless herd-mentality of modern existence by means of a relentless critique of middle-class norms. To realize its full potential, humanity had to embrace its fundamentally creative mission, and this meant reversing, or “transvaluing,” values in order to accept the fact that destruction was a necessary part of creation. Although Nietzsche’s writing betrays a distinct pessimism, reflected in his depiction of the “super-man” as the only one able to break through conformity, the will to power represents a philosophical claim about the nature of culture as ideology, not a celebration of egoism at all costs.

Analytic Philosophy

Rooted in earlier traditions of empiricism, analytic philosophy emerged in the twentieth century to become the dominant form of professional philosophy. Sometimes misnamed as “Anglo-American” philosophy, analytic philosophy has important roots in the Vienna Circle and in a number of other German-language thinkers, such as *c* (1848–1925) and Franz Brentano (1838–1917). Its various manifestations also make it impossible to speak of anything more than a shared spirit of philosophical inquiry. The basic orientation of analytic philosophy is the conviction that philosophy is restricted to analyzing the basic truth or falsity of propositions about states of affairs. For analytic philosophers, the mistake of much previous philosophy was to confuse such propositions with the poetic or emotive uses of language. Bertrand Russell (1872–1970), a logician and mathematician, strongly influenced the development of analytic philosophy with his view that reality could be explained according to the atomic structures of perception and the logical inferences binding them together into wholes. Ludwig Wittgenstein (1889–1951) reinforced logical atomism in his earlier work, but shifted in his later philosophy to a repudiation of the view that language



was reducible to propositions. This paralleled some of what Heidegger was saying, and opened analytic philosophy to a better appreciation of the importance of ordinary life as the mainspring of language use.

The search for a rational kernel that might guide human affairs has been at the core of modern philosophy, since at least Descartes. But the presumption that this kernel rests in consciousness has been subject to challenge on a variety of fronts, including: the growing interest in the neural and biological bases for thought, and the unmasking of philosophy as a tool underwriting social order. While not undermining the basis of philosophy as such, these new perspectives have done much to expose the history of philosophy's distinctly Western presuppositions and prejudices.

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See also Descartes, René; Marx, Karl

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Pilgrimage

The word *pilgrimage* is derived from the Latin words *per* (meaning “through”) and *ager* (meaning “field” or “land”). People usually think of pilgrimage as involving a journey—made either alone or in a group—to and from a sacred site. Pilgrims often perform rituals not only at the sacred site itself, but also at the beginning and end of the journey. In addition, pilgrims may visit other holy places during the course of the journey.

Since ancient times people have been engaged in pilgrimage, either alone or in groups, leaving their homes to journey to a sacred place. Motivations for pilgrimage can include a desire for divine healing, penance for a wrong committed, thanks for a prayer answered, fulfillment of a religious injunction, or some combination of these motivations. The fact that pilgrimage occurs, in some form, in so many societies makes studying this phenomenon fascinating but difficult.

Pilgrimage in the Classical World

No single word in Greek or Latin specifically described travel to a holy destination, but festivals brought together people from scattered settlements both to celebrate the gods and to engage in trade. The numerous shrines of the Hellenic (Greek) world illustrated a great variety of possible reasons to travel. The frieze (an architectural ornament in the form of sculptured, horizontal band) of the famous Parthenon in Athens commemorates the Great Panathenaea, an event celebrated every four years and aimed at achieving a union of all Athenians. Epidauros provided a

place for the god Apollo and his son Asklepios to cure the sick. Delphi delivered prophecies through the medium of a priestess. At Olympia the festival of Zeus was celebrated with sporting competitions every four years—an event echoed in the contemporary games, which have taken on global significance in their revived form. Wealthier people in particular had the resources to travel, and pilgrimage also provided one of the few opportunities for women to travel outside their home cities. Roman patterns of pilgrimage were often modeled on Hellenic precedents, with numerous gods celebrated in shrines of greater or lesser size, but with few written doctrines or rules being drawn upon.

Pilgrimage in the World Religions

Pilgrimage is performed in all of the great religions and is usually—unlike its position in the classical world—provided with a justification and model in sacred texts. The degree to which pilgrimage is seen as obligatory varies. Islam is the most prescriptive faith. Every Muslim is required to perform the hajj (pilgrimage to the holy city of Mecca in Saudi Arabia) at least once unless prevented by illness or lack of economic resources. The binding nature of the hajj is combined with other features that distinguish it from other activities. Only Muslims are allowed to enter the holy city; the timing of the pilgrimage is fixed at certain days within the twelfth month of the Muslim year; and pilgrims, dressed in two sheets of unsown cloth or plain dresses, must perform a predetermined sequence of ritual actions, including walking seven times around the Kaaba, the cube-shaped stone building in the court of the Great Mosque.



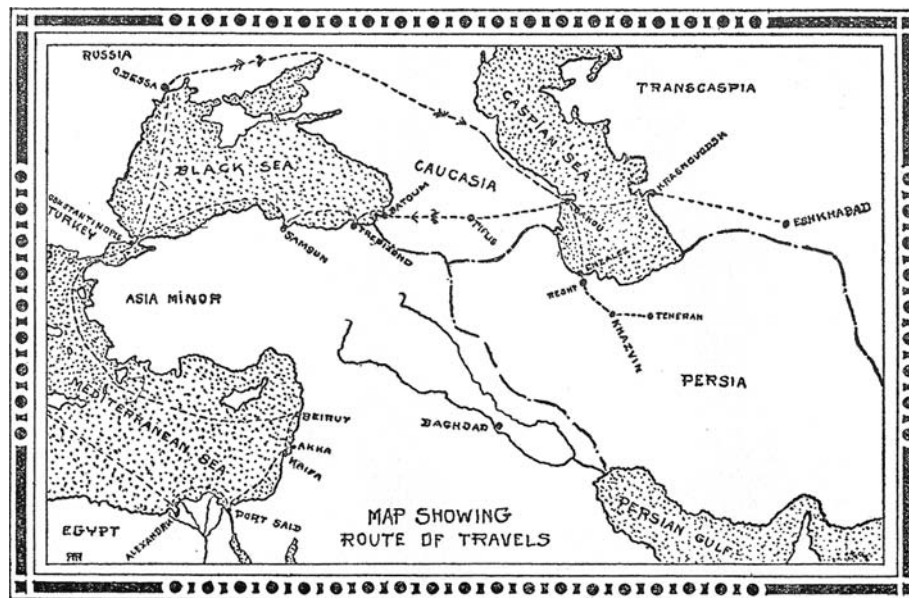
Hindu pilgrims enter the Shri Ranganath Temple in Vrindavan, India. Photo by Klaus Klostermaier.

Just as the practices of the hajj developed out of earlier traditions already extant in the Arabian Peninsula of the seventh century CE, so Islam emerged within a wider sacred landscape already occupied by Judeo-Christian religious assumptions and influences. The Prophet Muhammad (c. 570–c. 632 CE) regarded Jerusalem as sacred, and the seventh-century Dome of the Rock—even today an object of Muslim pilgrimage—was constructed on the site of the former Jewish Temple and resting place of the Ark of the Covenant in Jerusalem. The hajj had some parallels with the *haggim* of Judaism, the ancient pilgrimage feasts involving the convergence of the Israelites on Jerusalem. (The Hebrew term *hag* implies the actions of turning around and dancing.) But such feasts also expressed specific aspects of Jewish history. The oldest feast, Passover, celebrated deliverance from servitude in Egypt. Tabernacles involved the construction of temporary shelters and commemorated the forty years spent by the Jews in the wilderness. Shavuot (Weeks) was a harvest festival that also marked the giving of the Ten Commandments to Moses on Mount Sinai. These gatherings therefore provided occasions for pilgrimage while also recalling different forms of movement: escape from slavery, wandering in the desert before locating the Promised Land, or ascending a mountain. They are still celebrated by members of a faith whose identity remains rooted in the experience

of dispersal, the so-called Diaspora (the settling of scattered colonies of Jews outside Palestine after the Babylonian exile). Even today, two thousand years after the final destruction of the Temple but with the State of Israel restored, Passover is an occasion when many Jews proclaim: “Next year in Jerusalem!”

Christianity echoes Islam and Judaism in its reverence for Jerusalem, both in relation to scripture and in relation to pilgrimage. The landscape of the Holy Land and the holy city have provided potent reminders of Jesus’ life as well as of the location of his future return (just as in Islam Paradise will be transferred to Jerusalem during the Last Days). The early centuries of the church brought the quick emergence of a pious tradition of traveling. During the fourth century CE Helena (c. 255–327 CE), the mother of the Roman emperor Constantine (c. 274–337 CE), toured the Holy Land, adapting the model of traditional Roman imperial progress through a province for her own spiritual as well as political purposes. As the Christian empire developed so did the pilgrimage routes of often highly ascetic travelers, who expected to see the biblical narrative played out in the places visited. A growing monastic tradition was also evident in Palestine and neighboring lands. But with the decline in Muslim tolerance of Christian visitors to Jerusalem from the tenth century onward, European sites became increasingly prominent pilgrimage locations. Rome housed the tombs of St. Peter and St. Paul, and other shrines, such as Santiago de Compostela in northwest Spain, were viewed as symbols of Christian military opposition to Islam, celebrating St. James in his role as a warrior, armed with both a sword and a cross. Some sites even replicated the sacred landscape of the Holy Land, such as Walsingham in Norfolk—known as “England’s Nazareth” because it claimed to have an exact copy of the holy house that Jesus had inhabited as a boy.

The qualities of the landscape have been central to Judeo-Christian pilgrimage traditions, but also—and perhaps especially—to those of south Asia. The Hindu term *tirtha-yatra* means broadly “journey to river fords,” illustrating a devotion to flowing water evident since Vedic (relating to the Hindu sacred



The 1908 travel route of pilgrim Charles Mason Remey, a teacher and defender of the Baha'i Faith.

writings) times (from c. 1500 BCE), and pilgrimage practices often involve taking a purifying dip, as well as visiting holy figures or gaining sight of a deity contained within an image. The *Mahabharata* (c. 300 BCE), a Vedic epic, contains sections describing and noting the religious merit to be gained from visiting numerous *tirthas* (sacred places). Such merit is said to apply to people of all classes and castes and usually involves a temporary renunciation—akin in some ways to Christian asceticism—that rejects bodily comforts and pleasure. As one scholar of Hindu pilgrimage puts it, “The returning pilgrim should be thinner and poorer” (Gold 1988, 263). Other important features of the Hindu pilgrimage landscape include hilltops, caves, and forests, creating a complex sacred geography that encompasses the whole of India. Furthermore, with the economic migration of Hindu populations into the West, features of the sacred Indian landscape have been translated into new parts of the world, so that, for instance, the convergence of two rivers in Ohio has been compared by some Hindus with the confluence of the sacred Indian rivers: the Ganges, Yamuna, and Sarasvati.

On the Indian subcontinent the religions of Jainism and Sikhism maintain pilgrimage traditions that have some similarities with Hindu practices. According to Buddhist tradition, among the last words of Buddha (c. 563–c. 483 BCE) were instructions to his followers to visit places marking the most significant events

of his life. People soon added numerous holy spots to this biographical landscape, within and beyond India. Just as the emperor Constantine reinforced his imperial power by placing pilgrimage churches in the Holy Land, so the emperor Ashoka—the first Buddhist pilgrim of whom we know—used imperial patronage during the third century BCE to create a Buddhist landscape of pilgrimage by improving roads and resting places for travelers. As the religion itself spread, new pilgrimage sites emerged in China, Tibet, and Japan.

Similarities and Differences

Both in the past and in the present pilgrimage practices across the world's religions have appeared to exhibit some striking similarities. Circumambulation of shrines and other sacred objects is evident not only in Islam but also in Hinduism and Buddhism, for instance. Pilgrims also commonly take some material evidence of their journey back home—perhaps a vial of holy water, an image, or a token. However, we should not assume that actions that look similar from the outside have the same meaning to participants from different cultures and religions. Furthermore, pilgrimages have tended to contain within them—even to foster—conflicts between pilgrims supposedly united by the same religion or between ordinary pilgrims and shrine authorities. Thus, the famous Catholic site of Lourdes, situated on one

Life is a pilgrimage. The wise man does not rest by the roadside inns. He marches direct to the illimitable domain of eternal bliss, his ultimate destination. • **Swami Sivananda (1887–1963)**

of the main medieval pilgrimage roads of southern France and commemorating the visions of the Virgin Mary granted to a young girl during the nineteenth century, is enormously popular in the present, attracting millions of visitors a year. Such popularity inevitably creates tensions over the varied motivations of the pious, for instance, between the desire for miraculous healing expressed by the sick who visit the site and the general emphasis on spiritual rather than physical benefits that is promoted by the clergy.

The religious and often political (and even economic) power contained in many pilgrimage sites has often led to acute, even destructive, conflicts. Jerusalem is not the only site of competition between faiths. The pilgrimage center of Ayodhya in Uttar Pradesh, India, remains a site of troubled relations between Hindus and Muslims, resulting not only in violence but also in rivalrous construction and destruction of sacred buildings. Elsewhere in India, the Golden Temple at Amritsar, holiest of shrines for Sikhs, became the center of conflict between religious separatists and the Indian government, leading in 1984 to the storming of the temple by the army and the killing of many people, including pilgrims.

Pilgrimages have also been attacked from within their religious traditions, with critics often denying the value of physical travel or challenging the idea that the divine can be particularly located in a single spot on Earth. The tenth-century Sufi (Muslim mystic) authority Abu Sa'id enjoined his followers not to undertake the hajj on the grounds that they should concentrate on cultivating mystical experiences instead. Within Hinduism some writers have argued that pilgrimage implies too much attachment to the material world. A key aspect of the Protestant Reformation was the iconoclasm that denied the spiritual value of the statues and relics in numerous shrines and that attacked the economic corruption in both the guardianship of sacred sites and the selling of "indulgences"—remissions of punishments for sin that the Catholic Church granted in return for pious acts such as pilgrimage.

Pilgrimage in the Future

Despite some predictions that the world is becoming more secular, pilgrimage remains a flourishing institution. Although it has always been combined with other activities, pilgrimage is increasingly being associated with tourism, so that sacred travel is often undertaken alongside other forms of leisure, and pilgrimage sites have become accustomed to hosting both pilgrims and tourists at the same time. As more people can more easily travel throughout their own countries or even across the globe, pilgrimage seems likely to become an ever more visible part of life in the twenty-first century.

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See also Buddhism; Festivals; Hinduism; Islam; Jainism; Judaism; Missionaries; Muhammad; Protestantism; Roman Catholicism

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Piracy

Piracy on the high seas—the theft of a ship’s cargo, the ship itself, and the violence or kidnapping it involves—has existed since ancient times. In the twenty-first century piracy poses an ever-greater threat, costing commercial shipping enterprises billions, disrupting international trade, and endangering lives.

According to the 1982 United Nations Convention on the Law of the Sea (UNCLOS), piracy is any illegal act “of violence or detention . . . committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed . . . on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft.” This definition is the product of high-level deliberations in an age of nation-states, but it captures the essence of piratical activity throughout history. Because of their mobility, their tendency to operate in places frequented by commercial shipping, and the fact that the theft of a ship’s cargo—and often of the ship itself—disrupts international trade, piracy often has far-reaching implications.

The tendency to romanticize pirates as a class of seagoing Robin Hoods tends to obscure the violent and criminal nature of their actions. Certainly no victim of modern piracy speaks fondly of his or her assailants. It is true, however, that pirates generally create and operate within hierarchies that are relatively flat when compared with those of commercial shippers, privateers, and navies. In the eighteenth century, for instance, the distribution of prize money, for instance, was more equitable than it was among privateers or naval sailors, where the share system favored officers, shareholders or the

government. Likewise, there have always been divergent views of piratical behavior. In the first century BCE, Cicero held that a pirate “is not specified as belonging to the ranks of combatants, but is a foe in all men’s eyes,” (Walsh 2001, 121) a sentiment echoed by the seventeenth-century English jurist Sir Edward Coke, who called pirates the enemy of mankind. A contrary perspective is found in St. Augustine’s *City of God*, which relates a conversation between Alexander the Great (Alexander of Macedon, 356–323 BCE) and a pirate who asks: “How darest thou molest the whole world? But because I do with a little ship only, I am called a thief: thou doing it with a great navy, are called an emperor” (Pennell 2001, 25). Modern practice follows Cicero and Coke, and “enemy of humankind” (*hostis humani generis*) is used today not only to describe pirates but also in reference to people engaged in terrorism, torture, and genocide.

The conditions in which piracy flourishes make the concept of legality difficult to pin down. One classification of maritime predation distinguishes between parasitic, intrinsic, and episodic forms. Of these, only parasitic qualifies as pure piracy conducted without any legal constraints, such as was found in the Caribbean and western Atlantic during the classic age of piracy, from about 1650 to 1725. This was the era of flags emblazoned with a skull and crossed bones, one of many symbols—albeit a popular one—intended to strike fear in the minds of prospective victims. Government efforts to suppress piracy were every bit as ruthless as the pirates themselves. In 1701 Captain William Kidd, a privateer-turned-pirate wanted for crimes committed in the Indian Ocean, was captured in Boston, hanged at



Blackbeard and his pirates celebrated in Charleston, South Carolina, when they blockaded the port and ransomed its inhabitants in 1718.

London's Execution Dock, and displayed at Tilbury Point on the River Thames as a warning to others. Kidd was only one of many early-eighteenth-century pirates who were tried by government authorities anxious to encourage peaceful trade. The ruthless Edward Teach, or Blackbeard, was hunted down and killed in North Carolina in 1718. In Jamaica two years later, Calico Jack Rackam and his consorts Mary Read and Ann Bonny were captured, tried, and sentenced to death. Rackam hanged, but Read and Bonny, both pregnant, were spared; Read died in prison, Bonny's fate is unknown. The tough measures worked, and within a few years piracy was all but eradicated in the western Atlantic.

An early form of episodic piracy is found in the second century BCE, when Cilician pirates from Asia Minor evolved from relatively small groups into a full-fledged navy that fought against Rome in the Mithridatic Wars. Determined to crush the Cilicians, the people endowed Pompey the Great with

the administrative power of the *imperium* for an unprecedented period of three years in 67 BCE. His campaign was swift and decisive, but the lingering effects of his *imperium* are regarded as a milestone in the metamorphosis of Rome from a republic to an empire.

In the fifteenth century, China's Ming dynasty banned overseas trade, putting tens of thousands of seamen out of work. While the state was unable to suppress smuggling at sea, imperial authorities attempted to check the pirates on land. In the ensuing round of reprisals violence became endemic. Many of the pirates—perhaps forty thousand in all—operated out of bases in Japan. This period of piracy ended when the ban on trade was relaxed and other economic reforms were instituted in the 1560s.

Privateering and corsairing are forms of intrinsic or institutionalized piracy. In the early modern period, European navies routinely commissioned merchant



Captain Richard Phillips, right, in April 2009, was rescued after being held captive by pirates off the coast of Somalia. United States Navy.

ships to sail as privateers against enemy commerce. These were issued letters of marque that outlined the scope of their operations and afforded captured privateers legal protection. The degree to which these niceties were observed depended on the strength of the legal authority. During the American Revolution, privateering in the Gulf of Maine degenerated into indiscriminate violence by “privateers” who owed allegiance to neither crown nor colonies.

Corsairing is another example of state-sanctioned “piracy,” as American Federalists called it. The North Africa regencies of Algiers, Tunis, and Tripoli raised money by capturing merchant ships and ransoming their crews, passengers, and cargoes. Many governments found it expedient to pay the regencies for safe conduct passes, but this practice ended in 1816 when European powers decided to take advantage of their overwhelming superiority and the state of peace prevailing at the time to put an end to it. Privateering was formally outlawed by the 1856 Declaration of Paris.

Piracy has by no means been eradicated, and since 2001 there has been growing concern over the potential collaboration of pirates, whose motives are essentially economic, and terrorists with political aims. The trend toward privatizing certain military and security undertakings also suggests that a return

to some form of private naval warfare is a distinct possibility.

Piracy of commercial transport vessels in the waters between the Red Sea and the Indian Ocean, and especially off the coast of Somalia, continue to cost upwards of \$15 billion a year and threaten lives. In April 2009, during a week-long spate of attacks along the Somali coast, Somali pirates captured the MV *Maersk Alabama*, a U.S.-flagged, 17,000-ton cargo ship on its way to Kenya with relief supplies. When the crew managed to take back the ship the pirates kidnapped the captain, Richard Phillips, to a lifeboat. After four days, believing that Phillips’s life was in danger, U.S. Navy SEAL snipers shot and killed the captors; Phillips was rescued and determined to be in good condition.

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See also History, Maritime

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There is more treasure in books than in all the pirate's loot on Treasure Island. • **Walt Disney (1901–1966)**

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Plastics

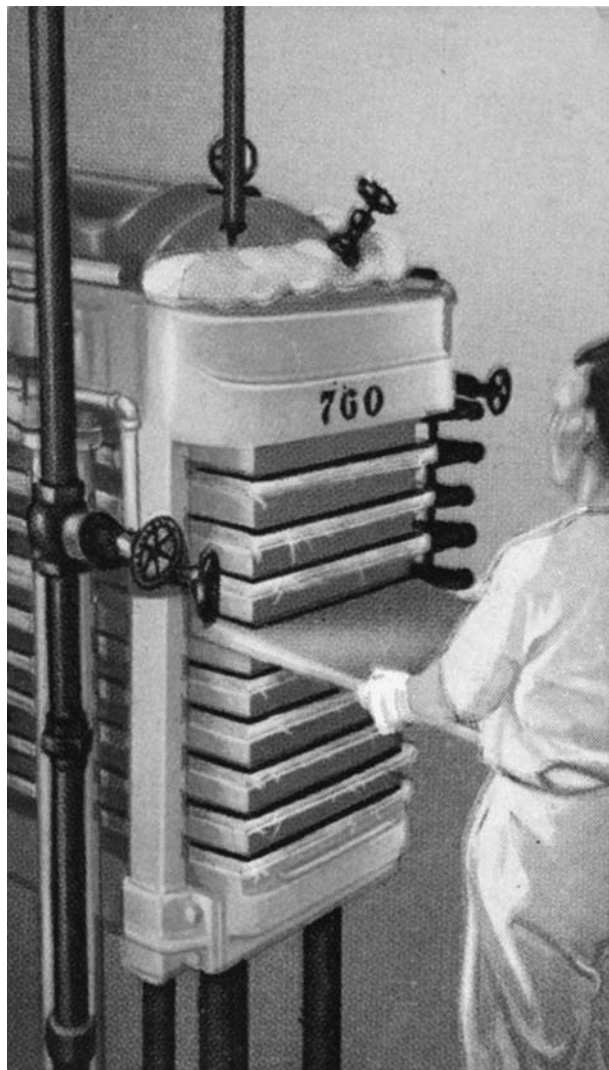
The 1907 invention of Bakelite, the first fully synthetic plastic, ushered in an era of experimentation in plastics manufacturing. By the 1930s molded plastic goods such as clocks and crockery were the rage, but in the 1960s a proliferation of cheaply made items gave plastics a bad name. Despite the public preference for goods made from natural materials, the plastics industry proves to be remarkably resilient in the twenty-first century.

Plastics are everywhere, yet the term *plastics* is not well defined. The adjective *plastic* means pliable (from the Ancient Greek *plassein*, to mold), yet many plastics (notably Bakelite) are rigid. As a group, the metals are more “plastic” than plastics. Natural materials such as wax or horn are pliable but are not thought of as plastics. Rubber is usually considered separately from plastics (as in this encyclopedia) but hard rubber (ebonite) is a plastic. Any attempt at a technical definition usually ends up including adhesives and synthetic fibers, but excluding an important group of plastics such as the silicones. Our use of the term *plastic* usually depends on the object. The rubber duck is actually made from plastic (PVC, or polyvinyl chloride), yet carbon-fiber tennis rackets are usually not regarded as plastic. We all know what plastics are, but it is a culturally determined term, not a technical one.

The Origin of Plastics

For many centuries, objects have been shaped out of natural materials that could be considered similar to modern plastics, including clay (pottery),

glass, and wood (which has a similar structure to synthetic reinforced composites). Wax, horn, and shellac (made from the lac insect) were even closer to our current concept of plastics. Horn is perhaps the closest of these materials to modern plastics. By the eighteenth century, horn was being molded, using pressure and heat, to produce a variety of objects, especially beakers, medallions, snuffboxes and jewelry. Restricting the use of the term *plastics* to synthetic (or at least semisynthetic) materials, the history of modern plastics began with the accidental discovery of nitrocellulose (cellulose dinitrate) by the Swiss chemist Christian Schöbein in 1845. The British chemist and inventor Alexander Parkes experimented with nitrocellulose in the 1850s, and by 1860 he had made molded objects from this material, which he exhibited at the International Exhibition in London two years later. He patented the idea of adding camphor to soften the stiff nitrocellulose in 1864. Variants of the resulting substance, called Parkesine, were developed in London in the 1870s as xylonite by Parkes’s former works manager Daniel Spill and an American, Levi Merriam, and in Newark, New Jersey, as the better-known celluloid by two brothers, John Wesley and Isaiah Smith Hyatt. By the 1890s, celluloid had become an important material, used to make billiard balls (and other items formerly made from ivory), combs, washable collars and shirtfronts, photographic film, and Ping-Pong balls (invented in 1901 and one of few remaining uses of celluloid). In 1892, two British chemists, Charles Cross and Edward John Bevan, introduced a new cellulose-based material, viscose rayon, which could be molded into combs, handles, and ashtrays, but which became



Plastic in a hydraulic press. New York Public Library.

more important as the first commercially successful semisynthetic fiber.

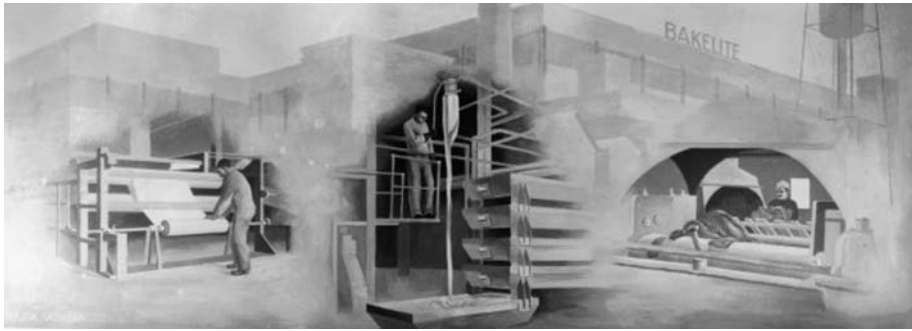
Bakelite and Style

Celluloid had its uses, but it was expensive, difficult to work with, and flammable (it is related chemically to gun cotton). The real breakthrough for plastics had to await the development of the first fully synthetic plastic, Bakelite. The Belgian-American chemist and inventor Leo Baekeland invented Bakelite in 1907 while trying to make a synthetic lacquer from the reaction between two organic chemicals, phenol and formaldehyde. He used a two-stage process: the chemicals reacted to form an intermediate which was then heated in a pressurized mold to make the final product. Bakelite appeared at the right moment,

when the rapidly growing electrical industry was looking for a good robust material for switches and other components that did not conduct electricity. Although it could be used for domestic goods (billiard balls were an early example), its dark color and lack of translucency was a major drawback. These problems were overcome by the amino plastics (made by the reaction between formaldehyde and urea or melamine), which were colorless and translucent. They could be colored to produce very attractive molded household objects including clocks, ashtrays, and crockery. The first amino plastics were developed by the British Cyanide Company (later renamed British Industrial Plastics) in 1924, and the American Cyanamid Company introduced the melamine plastics in 1939. By the 1930s, plastics manufacturers were encouraging industrial designers, such as Norman Bel Geddes, to create new styles which showed off their products to the best advantage. In this period Bakelite and melamine plastics were particularly associated with Art Deco and the new technology of radio sets.

Wartime Expansion

In the 1930s other plastics were being developed which were very different from Bakelite, being both light and easily shaped. They had existed as laboratory curiosities for almost a century (polystyrene had been discovered in 1839), but they had not hitherto been a commercial success. Polyvinyl chloride (PVC), for instance, decomposed on the hot rollers used to turn it into sheets. By the mid-1930s, however, the American corporation Union Carbide and the German firm I.G. Farben had independently succeeded in producing types of PVC which could be turned into flooring, cable covering, and household goods. The German firm of Rohm & Haas was successfully developing polymethyl methacrylate (PMMA, better known as Perspex or Plexiglas) in collaboration with its American counterpart. In 1933 the British chemical firm ICI (Imperial Chemical Industries) had, by chance, discovered polyethylene (Polythene), which showed promise as a light insulator. The industry was initially



Mural depicting Bakelite Plastic headquarters. In the 1930s Bakelite and melamine lent themselves to Art Deco design and the new technology of radio sets. New York Public Library.

held back by the lack of any serious demand for these new materials, but the situation was transformed by World War II. PVC was used as a substitute for rubber and other materials, PMMA was used to make aircraft cockpits, and polyethylene was used in radar sets. Polyurethanes (used in foams, shoe soles, and stretch fabrics) were a German innovation which was developed in the United States in the 1950s.

Plastics Become Common

After the war ended, the plastics industry needed to find new outlets for its products. Polyethylene was converted into washing-up bowls (dishpans), squeeze bottles, and Tupperware dishes. PVC displaced fragile shellac in long-playing records. PMMA was used to make jukeboxes. Plastics were also used extensively in house building, and in toys, for instance, hula hoops and Barbie (who was “born” in 1959). Hula hoops were among the first examples of a new plastic called high-density polyethylene which first appeared in the mid-1950s. This strategy succeeded beyond the industry’s expectations. While the period between 1945 and 1973 was a highly successful one for the plastics industry in terms of technology, production, and profits, the popular image of plastics eventually took a tumble. Whereas Bakelite had been considered high tech and stylish in the 1930s (except by snobs who always insisted that natural products were better), plastics were regarded as cheap and tacky by the mid-1960s. This was a result of poor manufacturing techniques by some of the mom-and-pop operations that had entered the industry, as well as the use of plastics to make cheap items such as fairground gewgaws and novelties for cereal boxes and Cracker Jacks.

Plastics Become Sophisticated

Despite their popular image, plastics were growing in technical sophistication in the 1950s and 1960s. Glass-fiber-reinforced composites enabled the production of light but very strong casings, which are now widely used in the aerospace and transport industries. Teflon had been discovered by accident in 1938, but Du Pont was opposed to its use in cooking utensils, and the first nonstick pans, made without the firm’s approval, did not appear until 1960. In the 1960s there was a growing demand for heat-resistant plastics, partly because of the space program (and the growing popularity of ready meals) and partly because of the withdrawal of asbestos on health grounds.

The plastics industry also devoted considerable effort to developing substitutes for glass, a potentially enormous market. The polycarbonates, a virtually unbreakable, vandal-proof material used for street lighting, public shelters, and safety visors was developed independently by General Electric and the German firm Bayer in the late 1950s. At the other end of the hardness spectrum, soft contact lenses were first made by a Czech chemist, Otto Wichterle, using a chemical relative of PMMA, in 1961. Attempts to make drink containers from plastics were initially unsuccessful, but a Du Pont team headed by Nat Wyeth (a member of the famous family of artists) was able to blow drinks bottles from polyester resin (better known as a synthetic fabric) for Pepsi in 1975.

Crunch Time for Plastics

The plastics industry, which used petroleum as its raw material, was badly affected by the oil crisis of 1973, when the price of oil quadrupled. Not only

I just want to say one word to you—just one word—“plastics.”

• Walter Brook (Mr. McQuire) to Dustin Hoffman (Benjamin Braddock) in *The Graduate* (1967)

did its costs escalate, the demand for its products fell as Western economies faltered. The public image of plastics was already lackluster. The environmental movement, gaining momentum from the anti-Vietnam War protests, was highlighting the highly visible results of discarded plastics waste. Even more alarmingly, there were growing concerns about the safety of the workhorse plastic PVC. In 1972, the monomer (building block) of PVC was discovered to cause a rare form of liver cancer. More recently there have been concerns about the health effects of plasticizers, chemicals used to make PVC flexible. The producers of traditional materials such as wood, metals, and glass were not idle and capitalized on this public disillusionment. Sometimes the users of these materials, for instance furniture manufacturers, made their products more competitive by incorporating plastics into their products where they would be invisible.

The Resilience of Plastic

Nevertheless, the plastics industry proved to be remarkably resilient. By 1992, American production had trebled over two decades. Meanwhile, the use of plastics continues to grow, in window frames, computers, and in our cars. The high-performance plastics of the 1960s are becoming commonplace, and even more sophisticated plastics are being developed. Carbon-fiber-reinforced composites are used in sports equipment. While the public at large

remains attached to natural materials, we use an ever-increasing amount of plastics (even if we tend not to think of them as such).

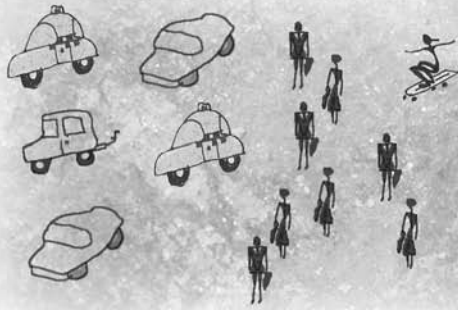
Peter MORRIS

The Science Museum, London

See also Rubber

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Plato

(c. 427–347 BCE)

GREEK PHILOSOPHER AND WRITER

The Greek philosopher Plato (c. 427–347 BCE) is renowned for his *Republic*, which argues against societies dominated by political turmoil and advocates instead the rule of enlightened and philosophically inclined elites (philosopher kings). As the most prolific interpreter of his mentor Socrates, Plato wrote dialogues characterizing Socrates as a shrewd and versatile interrogator.

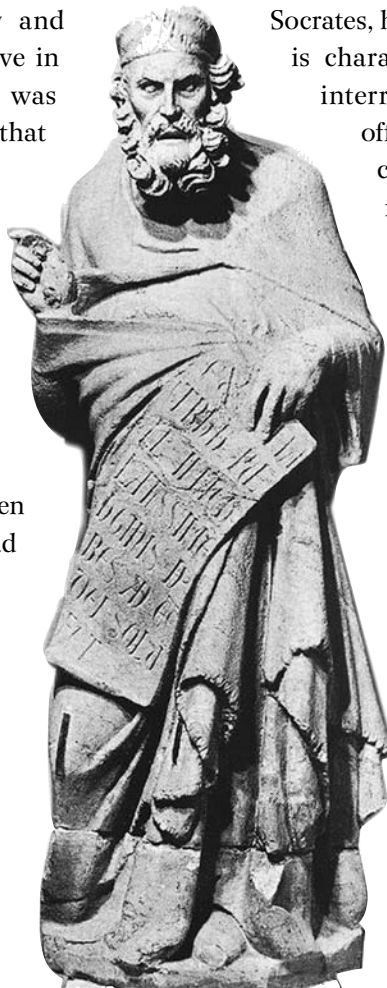
Plato was born into a wealthy and aristocratic family that was active in Athenian politics. His given name was Aristocles: “Plato” was a nickname that he received as a result of his broad shoulders, testimony to his youthful love of wrestling. He first sat in the circle of the philosopher Socrates when he was about twenty and remained devoted to his teacher until Socrates’s execution in 399. Afterward Plato traveled for a time, visiting Cyrene, Egypt, and Sicily. His visit to Sicily ended abruptly when Dionysius I, the tyrant of Syracuse, had him deported.

Upon his return to Athens, Plato followed Socrates in the establishment of a philosophical circle. In effect, Plato removed himself from civic life, neither marrying nor participating in political life. Plato’s circle, however, had a more formal existence than that

of Socrates. It met regularly in the grove dedicated to the hero Hekademos, from which it took its name, the “Academy.” This circle, in essence a school if not a university, continued its existence for more than nine hundred years, ceasing its operations only at the order of Christian Emperor Justinian in 529.

Plato’s foundation of the Academy represents the merest beginnings of his influence on subsequent generations. The most prolific interpreter of Socrates, he wrote dialogues in which his teacher is characterized as a shrewd and versatile interrogator. Plato’s Socrates does not offer teaching so much as cross-examine claims to knowledge, tell stories, and muse aloud. In representing Socrates in this way, Plato, perhaps, sought to be true to the spirit of his teacher, who mistrusted certainties and dogmatism. Socrates’s (and therefore Plato’s) philosophy is represented much more as a process than as a product. Although we do not know with certainty whether the philosophical voice of the dialogues is more Socrates or Plato, we can be certain that the voice is an amalgam of the two. The philosophical style that emerges from the dialogues is, however, styled “Platonism.”

The principal feature of Platonism is its idealism. Plato asserted that perceived reality is merely a shadow of truth. Although concepts and objects exist in true and perfect forms, our perceptions



Giovanni Pisano, *Plato* (c. 1280). Marble statue. Duomo at Siena, Italy.

Laws are partly formed for the sake of good men, in order to instruct them how they may live on friendly terms with one another, and partly for the sake of those who refuse to be instructed, whose spirit cannot be subdued, or softened, or hindered from plunging into evil. • Plato (c. 427–347 BCE)

and understandings of those concepts and objects are limited, and thus any attempt to apprehend or describe them is a partial construction, constantly subject to renegotiation, reinterpretation, and reformulation.

As such, Plato deeply mistrusted ideology. As a young man he had expected to enter politics but had been disillusioned by the narrow regime of the Thirty Tyrants (who included members of his family) and even more so by the restored democracy that had proceeded to execute Socrates. Plato's *Republic*, arguably one of the most important philosophical texts ever written, mounts an argument against societies dominated by political turmoil, advocating instead the rule of enlightened and philosophically inclined elites—the so-called philosopher-kings.

After some years Plato took the opportunity to put this philosophical approach into practice. He was invited back to Syracuse by a former student, Dion, a philosopher and politician. Plato became the informal tutor to Dion's nephew, the young tyrant Dionysius II. Dion and Plato both hoped to establish a rational and philosophically consistent regime, and Dionysius II himself initially also seemed enthusiastic. Court intrigue intervened, however, and Dion was banished. Although Dionysius II courted Plato and sought his approval, Dionysius II did not receive it. Instead, Plato went home to Athens, returning to Syracuse only in response to Dionysius II's repeated invitations. Plato stayed for some time, initially hoping to influence Dionysius II and to secure the return of Dion. However, Plato realized that Dionysius II was not terribly interested either in confronting the questions that Plato led him to or in the welfare of Dion. As a result, Plato determined to return home but secured his passage only with difficulty.

Plato's Sicilian experiences led to the composition of an open letter (Letter Seven), which is the most autobiographical document of his that survives. He remained in Athens for the remainder of his life, and at his death was succeeded as head of the Academy by his nephew, the philosopher Speusippus.

Plato's achievement set the tone for much ancient and modern philosophy. Although he has drawn criticism for his elitist vision of an ideal society, he advanced propositions across the entire philosophical spectrum: from aesthetics to education, from mathematics to metaphysics. All subsequent philosophy has, indeed, been likened to a response to this vast body of work. He has also been vastly influential in an unexpected way: his dialogues, the *Timaeus* and the *Critias*, are the basic ancient primary sources for the legend of the lost city of Atlantis.

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See also Greece, Ancient; Political Thought

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Plows

Even simple plows made of wood represented a great advance in agricultural technology because they could be pulled by large, domesticated animals, increasing harvests. More complex plows made of iron facilitated the development of feudal society and, to some extent, Western civilization. Plows pulled by motorized tractors are still an integral part of the world's commercial farming system.

Plows allowed humans to use the strength of large, domesticated animals—oxen, horses, water buffaloes, donkeys, and even camels—to cultivate more land than they could using their own power. The amount of grain a family could produce in a year increased accordingly, and where sufficient pastureland could be found, farmers in Eurasia and Africa were able to produce more grain than they themselves needed for food and seed. That, in turn, allowed cities and civilizations to arise. Thereafter, subsequent improvements in plowing methods and other agricultural innovations enlarged food supplies still further; using modern tractors less than five percent of the population of the United States now routinely feeds the rest of the country, with extra left over for export.

In pre-Columbian North and South America, however, domesticated animals capable of pulling a plow were lacking, so when Amerindian civilizations arose, food surpluses to feed cities depended on human labor using digging sticks, hoes, and spades to prepare the soil for planting. But even from smaller fields, Amerindian farmers provided a food surplus because their two principal crops—maize and potatoes—yielded far more food per acre than Old

World grains. But the rural surpluses in the Americas were not as elastic as they turned out to be in the Old World, where breeding stronger animals, inventing better harnessing, improving plow design, and selecting better seeds combined to enlarge agricultural productivity across the centuries.

Scratch Plows

Plows were probably first invented in western Asia. Visual images left by the ancient civilizations (c. 3000 BCE) of Mesopotamia and Egypt first show ox-drawn plows, usually with their most vital working part buried in the Earth. Made wholly of wood, early plows are scarce to nonexistent in the archaeological record, so exactly when and where oxen were first hitched by their horns to a digging stick and compelled to drag it through the soil will never be known. Digging sticks had to be reshaped and made heavier before becoming efficient scratch plows, but once that had been done, the practice of plowing spread very widely. Scratch plows appeared in China along with domesticated cattle, wheat, and barley from western Asia about 3000 BCE, and a cave painting in Sweden dating from something like a thousand years later shows a similar plow in that distant part of Europe.

Scratch plows were light enough for a single man to carry on his back, but for a long time a rope tied to a wooden yoke attached to the horns of two oxen was needed to pull one through the soil. Wooden scratch plows were soon made more durable by using stones shaped into plowshares to slice through and break up the soil. Shaped stones were later replaced by thinner and less fragile iron plowshares throughout Eurasia after about 700 BCE. Wherever scratch plows worked



Greeks use a primitive scratch plow pulled by oxen in this drawing copied from a black-figured Nikosthenes cup, sixth century BCE.

the land, cross plowing—first one way, then again at right angles—was the usual way to prepare the soil for the seed, thus squarish field shapes became standard.

Where rain fell only part of the year, for example in northern China, western Asia, and around the Mediterranean, plowing began when the first rains softened the sun-baked soil and lasted only a few weeks, when planting had to start to give grain enough time to grow and ripen while the rainy season lasted. Wheat, barley, and oats grew wild on the hillsides of western Asia, where the large seeds that made them so nourishing for humans gave them a fast start when moisture returned to the land and allowed them to outstrip the growth of rival plants. But when humans intervened and started to grow grain where it did not naturally prevail, weeds were always a problem. This required early farmers to leave cultivated land fallow, often every other year, so summer plowing could uproot weeds before their seeds formed and so assure a good crop of grain the next season.

In semi-arid climates a single family could cultivate about ten acres of grain by using scratch plows, so surplus food for the support of cities, armies, and governments remained comparatively restricted. But first China and then Europe escaped this limitation in two quite different ways.

Chinese Irrigation

China's way was to create irrigated fields for growing rice. That required an enormous effort to level, dike, drain each field, and regulate the flow of streams to supply just the right amount of water to each field for part of the year and then stop the flow and drain the

field when it was time to harvest the crop. Humans wielding hoes and spades reshaped natural slopes and streambeds to create and maintain such irrigation, and human labor did not cease when the fields were securely covered by a few inches of standing water. Rice seeds had to be planted in special seed beds, watered by hand, then transplanted to the flooded fields as soon as the seedlings had grown tall enough to reach above the surface of the water.

When all went well, irrigated rice yielded as much or more food per acre as maize and potatoes did in America. But the immense amount of human labor irrigation required made Chinese yields per person smaller than Europeans eventually attained. Nor did plows disappear from China when so many spades and hoes got to work. Cross plowing irrigated fields before transplanting the sprouted rice remained usual, and the Chinese soon invented an improved form of moldboard plow for that purpose that turned the soil over in a continuous furrow instead of breaking the surface up into loose pieces as scratch plows did. They also improved harnessing so light moldboard plows, pulled by a single animal, became usual in China after about 300 BCE. But human muscle still did the work of making and maintaining dikes and canals, and the carefully leveled irrigated fields were far too small for heavy, large plows like those Europeans resorted to after about 800 CE.

Overall, the Chinese style of wet rice cultivation was very laborious, but it was so productive and dependable that it spread far and wide from the flood plains of the Huang (Yellow) and Yangzi (Chang) rivers where it first became standard. Fields of irrigated rice gradually spread throughout the rest of historical China wherever sufficient water was available.



This illustration is from a Qing-dynasty (1644–1911/12) version of *Gengzhi tu* (Pictures of Tilling and Weaving, first printed in 1210), a series of twenty-three scenes celebrating the development of farming technology in the Song dynasty (960–1179).

In ensuing centuries, Chinese pioneers, fleeing from overcrowded regions, moved across the landscape like a glacier, altering natural contours and drainage systems more radically than any human population had ever done before.

Beyond China's borders, wet rice cultivation also spread to Korea, penetrated the major river valleys of Southeast Asia and eastern India, and also crossed the seas to Japan and Indonesia. Consequently, something like half of humankind today depends on rice for most of its food, and its cultivation demands far more intensive stoop labor than farmers of northwestern Europe ever had to endure.

Moldboard Plows

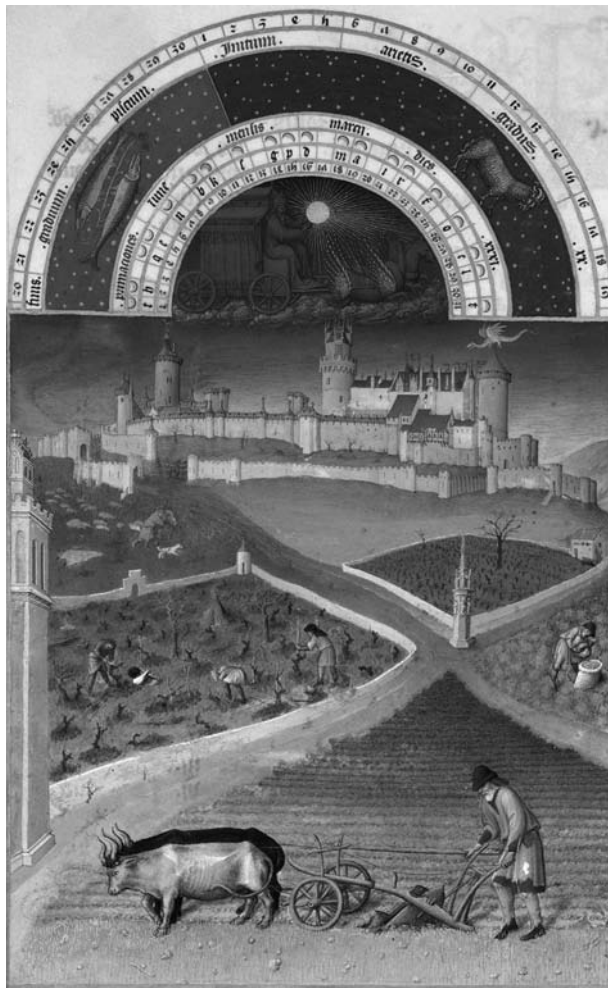
Through classical Greek and Roman times, scratch plows with iron plowshares tilled fields of wheat and barley in western Asia, North Africa, and Mediterranean Europe, but year-round rainfall restricted successful farming in northwestern Europe to unusually well-drained soils. On the flat north European plain, extending from France's Loire Valley to the Urals,

dank forests prevailed, and waterlogged landscapes made grain farming marginal. Cattle raising played a prominent role in the north, and where grain could be made to grow, oats and rye replaced the more nutritious wheat and barley of Mediterranean lands because they ripened more quickly. With only a limited supply of food, human populations in northwestern Europe remained thinly scattered amid the forests and could not support cities.

Heavy moldboard plows changed this situation fundamentally by spreading grain fields across the landscape after about 800 CE. Such plows perhaps existed for a long time before they came into wide use. The Roman author, Pliny the Elder, (d. 79 CE) says in his *Natural History* that Celts used a plow with "ears" somewhere in modern France; they may have been ancestral to the medieval European moldboard plow. But a moldboard plow casts the soil to one side only, and that was essential for its eventual success in making northwestern Europe's waterlogged plains into fertile fields of grain. If Pliny's "ears" scattered the soil on both sides of the plow, no such result would have followed. Of course, he may have been wrong about how many ears the Celtic plows had. But we can still be sure that plows with a single "ear," or moldboard, did not come into common use for centuries.

Hundreds of years later, heavy moldboard plows did exist in northwest Europe, becoming common only after about 900. They had a vertical, knife-like coulter thrust into the soil close behind a pair of wheels, located above and ahead of a horizontal iron share designed to slice the furrow and regulate its depth. Then there came a large wooden moldboard lying crosswise behind the share to turn the furrow and roll it over to one side. Lastly, long handles stuck out behind so plowmen could steer the plow and keep the furrow straight.

Four to eight oxen (or even more) were needed to lift and turn the furrows, so no ordinary family could afford such plows. This must have delayed its spread as did the fact that so many oxen could not be turned around easily; plowmen needed several yards of untitled "headland" at the end of each furrow to lift, turn, and reengage the plow. Consequently, these heavy



"March," from Les Très Riches Heures du Duc de Berry, painted by the Limbourg Brothers between 1413 and 1416. This rustic scene of planting and plowing is set against the Chateau de Lusignan, one of the le duc's favorite residences.

moldboard plows could not operate efficiently within the small, square-shaped fields suitable for scratch plows. They also needed a team of several men to control the oxen up front and prevent them from tangling the harness while others behind struggled to guide the plow on a straight and even course. Several families, in short, had to pool resources, each contributing an ox and one or more men to work the plow.

Draining the Fields

Yet when field shapes were altered to allow animals and men to pool their efforts on the necessary scale, the effect was extraordinary. That was because moldboard plowing had the effect of draining surplus

water from northwest Europe's plains, almost accidentally. By turning furrows one way going and the opposite way when returning all day long, plow teams created a long narrow strip that became what we call an acre, eventually defined in English law as 660 feet (221 meters) long and 66 (22 meters) feet wide. Each time a field was plowed, the moldboard rolled the furrows toward the center of each acre, thus creating a raised "land" with lower "baulks" on either side and draining each "land" quite effectively. When years of plowing raised the lands inconveniently high, furrows could be rolled downward again simply by reversing the plowing pattern.

As they spread, therefore, moldboard plows powered by animals reshaped the north European plain almost as drastically as hoes and spades changed China's landscape. Each day's plowing lay alongside another acre to be plowed the next day, thus creating large open fields around each village. European farming still required human hands to sow and reap, but that was done by separate families. To begin with, newly plowed long acres were assigned to each member of the plow team in turn, so each family would have access to more or less equal amounts of land. But rights to each acre soon became hereditary, and before long different families came to possess different amounts of land, and some villagers became landless and had to work for hire.

Year round rainfall permitted European moldboard plows to keep going most of the year, plowing down weeds in summer on fields left fallow, preparing others for sowing in the fall and in the spring. Working year round, except when sowing, reaping, or hay making (and during the frosty twelve days of Christmas), European plowmen were able to cultivate as much as 30 acres per man, roughly three times as much as seasonally restricted scratch plowing allowed. That assured larger surpluses of grain in most years than scratch plows yielded.

Western Civilization

It is not surprising, therefore, that by about 900 CE moldboard plows started to spread rapidly, and, as



forests were cleared, population and wealth multiplied in northern Europe. This coincided with the end of Viking raids, and it is very probable that the initial establishment of long acres and open fields depended on the disruption of older patterns of rural life in France and the Rhineland by Viking raiders. It is easy to imagine how a handful of survivors, emerging from the forests to find almost everything gone, might be willing to forget about older property lines and pool resources to form plow teams while accepting the orders of military men who offered them protection in return for a share in the harvest. At any rate, the open fields did support a class of armored knights from the beginning, and when they became thick enough on the ground, even a handful of knights could arrive quickly on horseback and repel a Viking ship's crew quite easily. As a result, raids came swiftly to a halt. Thereupon villages surrounded by open fields, together with knights, feudal overlords, and increasingly populous towns soon created a distinctive medieval society and civilization in northwestern Europe.

The heartland of moldboard agriculture lay between the Seine and Elbe rivers and extended eastward toward the limits of German settlement. Scratch plows remained standard in Mediterranean lands. Further east, diminishing rainfall and frozen soil in colder winters made moldboard plows only marginally worthwhile. Most of Scandinavia, Ireland, Wales, and western Scotland remained too cool and moist for grain to ripen in most years. So French, German, and English populations were the main beneficiaries of the open fields and cooperative plowing that created them, and they became the main shapers of what we call European or Western civilization.

Subsequent improvements in plows and agriculture always mattered. The invention of horse collars, for example, permitted horses to supplement and eventually displace slower oxen from European fields after about 1300. New crops, most notably fodder crops—hay, clover, turnips—meant more and stronger animals for plowing and overland transport after about 1600. In the eighteenth century, maize and

potatoes spread across European fields, enlarging the food supply enormously when summer cultivation between the rows of these crops put an end to fallowing. At the same time, Europeans learned from Jesuit missionaries in China how to replace flat, wooden moldboards with curved, iron moldboards, and, in the 1830s, steel plows, fusing plowshare and moldboard into a single piece of metal, began to turn the furrows far more efficiently, thus reducing the force needed to pull the plow. A single man driving a pair of horses could pull such improved plows even when breaking the sod on virgin prairie land in North America and southern Russia.

Industrialization

By then, European settlers had carried their the style of agriculture overseas to the Americas, Australia, New Zealand, and other lands, with whatever modifications local conditions required while the enhanced productivity of European fields sustained an industrial revolution after about 1750 that is still spreading around the world. The principal impact of industrialization on agriculture was the advent of tractors in the 1890s, powered by internal combustion motors. They quickly transformed plowing, planting, and harvesting on a worldwide scale. Enormous plows with multiple shares or disks pulled by giant tractors became capable of cultivating many hundreds of acres in just a few weeks. Such plows, combined with other machines for sowing and harvesting, dwarfed older scales of farming. They swiftly displaced horse power from the fields and provoked widespread rural depopulation in North America, Russia, and a few other lands after the 1920s.

Throughout most of Eurasia and Africa, however, small internal combustion motors attached to various specialized machines began to do some of the work human muscle had performed previously, but, for the most part, public policy and custom preserved something like the traditional scale of farming to the present. Of late, large-scale, tractor-powered plows and other heavy machinery have shown an unexpected vulnerability when fuel prices rose sharply

after 2007. Such price fluctuations surely suggest that present methods of plowing and other agricultural work will change very rapidly in times to come, just as they have been doing around the world for the past century or more.

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See also Agricultural Societies; Domestication—Plant and Animal; Horses

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Political Thought

Political thought reflects and debates about the functioning of the state, or processes within it, that provide a state's structure and impact the public it serves. Traditionally, according to ancient Greek political theory, the term *politics* has been considered the highest realm of human affairs, the art that integrates all other pursuits.

Politics as a sphere of human concern has typically been understood in two ways. In a minimalist definition, politics is the realm of the state, of the institution that in complex societies enjoys a monopoly on the legitimate use of force in the territory it controls. Politics thus revolves around efforts by individuals and groups to gain control over the state, and to exercise the state's ultimate power on behalf of public peace, and some interests rather than others. This minimalist definition, dating back to the German sociologist Max Weber a century ago, tends to hold sway in contemporary political science.

A more substantive, traditional definition has its origins in classical Greek (especially Aristotelian) political theory. That view holds that politics is the highest realm of human affairs, the art that integrates all other pursuits. This means that the state, since it orders society as a whole, also has the ethical purpose of relating the various social functions and kinds of human flourishing to one another, and promoting sound character development among its citizenry. Political thought, more specifically, is normative thinking that goes beyond what politics *is* to what it *should be*. Political thinkers put forth visions of an ideal state, against which one might measure the realities of human self-interest and power-seeking.

World Histories of Political Thought

Various important points of contact lie between political thought and world history. One involves world-historical treatments of how political thought has developed in different settings, and how its unfolding reflects broader influences across space and time. Such treatments can occur on the level of either history of ideas or intellectual history. History of ideas traces the influence of thinkers and modes of thinking upon one another over time, often in isolation from larger social contexts. World histories of ideas might deal with the transmission of doctrines over large expanses of space and time, or with the influence of thinkers in different settings on one another. Intellectual history, by contrast, deals more with the social context and imprinting of ideas. Ways of thinking and the social forces that generate them are probed as layers of social reality, as expressions of or at least responses to larger historical circumstances and processes.

One example of world intellectual history is treatment of the so-called Axial Age, the period of Eurasian history between roughly 800 and 600 BCE. The German philosopher Karl Jaspers coined the term to refer to the common flowering of classical thought that happened during those centuries in the major centers of civilization in the eastern Mediterranean, the Fertile Crescent, India, and China. Whether in religious or philosophical guises, the era saw the emergence of complex "second-order thinking," or what one might call "thought about thought." In contrast to the mythical worldview of earlier cultures, new intellectual elites that had come to power began referring to transcendent sources of truth—God, Natural Law,



Heaven, the Dao, and so on—that existed apart from mere tradition. With this opening of a gulf between the mundane world and a higher order, cultures were reoriented away from imitating the past and toward a critical engagement with the example of pioneering creative personalities: prophets, philosophers, and state founders. In the political realm, the new civilizations began measuring the realities of state and society against ostensibly universal ideals of public virtue and cosmic order. From the standpoint of world history, the Axial Age is a framework for thinking comparatively about intellectual processes that occurred almost entirely independently of one another. The overlap in timing also reflects common world-historical conditions, like the emergence of complex urban societies that could support the kinds of stratification needed for such an intellectual breakthrough.

Notably, the emergence of much of this higher-level thinking, especially on a political plane, involved a kind of exercise in world-historical reflection. Early in the Axial Age, two core areas that generated classical political thought—the eastern Mediterranean and north-central China—were divided into many polities. Leading intellectuals like Plato and Confucius posed questions about politics and human flourishing in a comparative way, using the experience of often radically different political communities as raw material for their reflections. They thought broadly about political diversity and historical evolution, using the Greek city-states and the decay of the Zhou Empire into the warring states as illustrations. This comparative approach gave rise to insights into universal truths about human nature and well-ordered states.

Two main types of sophisticated political thought emerged from the Axial Age, from this new Eurasian experience of complex agrarian societies. One, which we might call *virtuocratic*, reflected the worldview of high-culture intellectuals who were committed to certain orthodoxies of religion or philosophy. Such groups included the Hindu Brahmins, the Confucian literati, the Greco-Roman Stoics, and the priests of the Middle Eastern monotheistic faiths. While their conceptual frameworks differed, they overlapped in seeing society as an arena for the pursuit of virtue and human flourishing. The state had a crucial role to play as the

keystone of a just social order, which placed people in positions suited to their natures. The ideal statesman was a kind of philosopher-king, who held himself to a transcendent standard of ethical truths and cosmic order. The ethical activities of the state unfolded on a plane higher than mere functional performance.

A second stream of political thinking that emerged at about the same time can be called *atomist*. Examples include Legalism in China and Sophism in Greece. From the fact of diversity across communities and eras, atomist political philosophers drew quite the opposite conclusion from their more virtue-minded counterparts. They held that diversity showed there was no objective truth or standard of virtue. Human nature amounted to no more than individual self-interest, the rather pedestrian desire to seek pleasure and safety and avoid suffering. Emptied of any moral content, the atomist vision of the state involved only efficient management, preservation of peace, and practicing hard-headed skills of statecraft. This stream of thought, with its social base in the mercantile and bureaucratic classes, endured until modern times but largely below the surface of respectable political discourse. Thomas Hobbes, the seventeenth-century English political theorist of absolutism, was a more recent voice of atomist statecraft, and paved the way for the more mundane and less virtue-oriented character of modern Western political thought.

All these are examples of how world history can situate the emergence of the major traditions of political thought, inform comparisons across those traditions, and trace long-term continuities and ruptures in thinking about politics.

Political Thought as a Lens for World History

In reverse, political thought can also influence the telling of world history. As a mode of imagining the ideal political community and making sense of large-scale social processes, any system of political thought implies a lens through which its adherents view the past. The term *metanarrative* often describes a story of world history colored by political thought. A metanarrative integrates the happenings of the past

into one simplified tale filled with meaning and with lessons for the present.

Metanarratives often have a religious bent. Religious metanarratives date back to the beginning of the so-called world religions, those universal systems of spiritual insight that emerged from the Axial Age. Since each world religion professes to speak to humanity as a whole, to represent a cosmic order not confined to any one territory or culture, it has had to grapple with the problem of religious diversity. Given its superior access to truth, in other words, how should it think about other world religions? The Hindu approach has typically been to treat religious diversity as merely a variety of paths to the same divine essence. This perhaps avoids the need for a metanarrative about the relative worth of religions, but still integrates doctrinal diversity into one overarching system of meaning. In the social realm, however, premodern Hinduism still saw the hierarchies and ritual practices of the caste system as a superior context for spiritual self-cultivation. Non-Hindus who sought true human flourishing would have to enter the Hindu social order over several generations. In practice, some conquerors and potentates were brought into the Hindu caste system by tracing back fictitious Aryan genealogies for them. The traditional Confucian worldview had some similarities to this system. While the absence of caste purity made entrance to Chinese civilization easier for outsiders, entry was still very much a one-way process of *laihua*, of “coming to be transformed.” As the ideal Confucian social order was the supreme expression of virtue, and the emperor the point of contact between heaven and earth, the Chinese polity was seen as radiating outward and potentially encompassing the *tianxia*, the “world under heaven.” “Barbarians” could improve their standing only by ascending the cultural gradient of Confucianization.

Religious metanarratives were most developed in expansionist missionary religions like Christianity and Islam. Founded against the background of earlier Middle Eastern faiths, and colliding with still other religions as they spread around the world, Christianity and Islam have had sophisticated visions of world history and how religious diversity fits into it. Both are *narrative* religions, that is, religions with a sense of historical

development centered on events of significance to a spiritual community. Both share a metanarrative of human creation, fall, prophecy, covenants, and eventual redemption, all unfolding within world history. And both draw on this metanarrative to make sense of other belief systems. Other religions that preceded them, like Judaism, have been seen as legacies of earlier stages in God’s intervention in the world. Islamic theology has proved quite accommodating in extending this basis for coexistence to all the major world religions. In the medieval period, when Christian theologians first struggled to find points of contact with revived classical thought and with the newly encountered cultures of the Americas, they fell back on Natural Law. Natural Law, while only truly fulfilled with knowledge of Jesus Christ, still could be seen as informing all religions and ways of life. It denoted the innate sense of ethics and the striving toward God that even non-Christian societies and religions reflected. For both Christianity and Islam, these metanarratives tied in with practical political arrangements of tolerance and coexistence. In medieval custom, nonbelievers often enjoyed toleration as residues of life before the true religion, though the grand vision of history implied their eventual absorption once their consciences allowed it. Islamic civilization developed elaborate mechanisms of incorporation, in which non-Muslim minorities enjoyed a good deal of social and political autonomy, resting on the idea of a contract of protection that dated back to the early conquests.

Metanarratives of world history have also served political purposes in modern times. Four in particular deserve mention. The first has been called a “Whiggish” theory of history, after the liberal Whig party of eighteenth-century Britain. The gradual constitutional development of the English monarchy, and the growing power of merchants and others of liberal temper, gave rise to the notion that history had been unfolding toward a built-in goal of liberal enlightenment. This metanarrative was transferred to North America, including the United States after its founding as a “great experiment.” As Whiggish historians would have it, the story of the Anglo-Saxon peoples, both in medieval and early modern English experience and in the triumph of the



colonies, was one of divine favor and ever-expanding liberty. In the twentieth century, this metanarrative gained a broader scope, in western Europe and even beyond. During the Cold War, the Whiggish view of history merged into a “Plato to NATO” metanarrative. This saw the contemporary West as heir to a continuous heritage of human freedom over two millennia, and its defender against world Communism. In the present day, an example of Whiggish history is Francis Fukuyama’s book *The End of History*, which predicts the triumph of capitalism and liberal democracy everywhere in the world, as the political system best suited to human nature.

A second modern metanarrative has been Marxist. As Karl Marx (1818–1883) first argued in the nineteenth century, history is driven by class struggle. When technology advances, the economic possibilities it opens up come into tension with older patterns of social and political organization. Eventually societies rupture in revolutions, and new ruling classes rise to power. Thus the major phases of world history succeed one another: slavery, feudalism, capitalism, and eventually socialism and communism. This focus on economic structures and vast impersonal forces can give quite comprehensive and compelling interpretations of world history. One of the strengths of Marxist thought in the early twentieth century was its ability to encompass and explain everything, or at least profess to do so. But it bears noting also that treating the contours of world history as basically inevitable denies much room for human agency. Everything unfolds in its own good time, so hurrying along history as those of a more inspired temper might wish cannot achieve much. Moreover, the eventual triumph of communism rests more on inevitability than on any absolute moral desirability. According to the Marxist metanarrative, all moral standards are products of their time, of the circumstances and interests that they serve.

A third kind of metanarrative is that which affirms a large-scale political identity, typically of a civilization or a nation-state. This use of world history became especially important in the twentieth century, as non-Western parts of the world began finding their

feet within the modern international system. Certain Indian and Chinese metanarratives of world history illustrate this pattern well. To take their place in the world, large and internally diverse countries like India and China have to develop a coherent sense of self and a claim to preeminence despite the momentary triumph of the West. In Jawaharlal Nehru’s 1944 book *The Discovery of India*, the future prime minister laid out what amounted to a metanarrative of Indian history. All currents, no matter how different on the surface, merged together in a single stream of Indian identity, which eventually flowed into the secular, socialist, internationalist India he envisioned. Likewise, Chinese nationalists reflected in the 1920s on what China could keep and what it must abandon in its march to modernity. Many concluded that the Confucian high culture and other traditions had to go, to ensure the modernization and survival of the Chinese race in a Darwinian world.

Whatever the details of these kinds of national or civilizational metanarratives, they have some features in common. They project back onto the past some forerunner of the cultural identity that is supposed to triumph in modern times. They play down internal diversity for the sake of unity. They play up distinctiveness from other cultural centers so as better to affirm a sense of self in the present, and a pride in self-contained accomplishments. Often, the metanarrative comes forward into the last century or two, as a tale of how outsiders (European imperialists in particular) encroached upon a once glorious community. Despite oppression and humiliation, the indomitable spirit of that community eventually broke through again in the mid-twentieth century, and began a process of self-renewal. Sometimes the metanarrative looks forward to a future national or civilizational redemption as a new power center in the world, restored to its proper place by its own efforts.

Postmodernism and the New World History

Finally, a fourth kind of contemporary metanarrative is loosely postmodern. At first glance, it may seem

odd to talk of such a thing, since postmodernism is suspicious of metanarratives and stresses that all identities and meanings in history are constructed and perpetually in flux. But “world history” as largely practiced in Western academia today is heavily influenced by some aspects of postmodernism, and tells tales of the past through a political lens much as the writers mentioned above do. One prevailing emphasis of contemporary world history has been on encounters among cultures, on hybrid identities and transgressions, and on the mixing and matching of cultural packages. Partly this reflects what inevitably would be a theme in any global history, simply given its scale, and the issue for this discussion is less one of accuracy than of relative emphasis. The emphasis goes as far as it does partly because of skepticism toward rival metanarratives of national unity or civilizational superiority. From the past, world historians of this bent strive above all to extract illustrations of pluralism and to call into question any essential boundaries that others might take for granted. This aim maps loosely onto political sympathies for present marginality and the hybrid identities that liberal globalization is producing. Diasporas and transnational migrants and ethnic minorities and the like have not been fully accommodated by the homogenizing national polities of the nineteenth and twentieth centuries. This new approach to world history provides a perspective that serves two complementary purposes, therefore. On the one hand, it undermines what its practitioners see as dominant narratives of exclusionary national identity, thereby opening space for the excluded. On the other hand, it grounds alternative pluralistic social arrangements in a wider range of historical experience, and in doing so adds legitimacy to certain political perspectives in the present. As with all other metanarratives, what we think of as world history also engages profoundly with political thought.

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See also Aristotle; Confucius; Marx, Karl; Laozi; Locke, John; Marx, Karl; Philosophy, Asian; Philosophy, Greek and Roman; Plato; Postmodernism; Socrates

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Polo, Marco

(1254–1324)

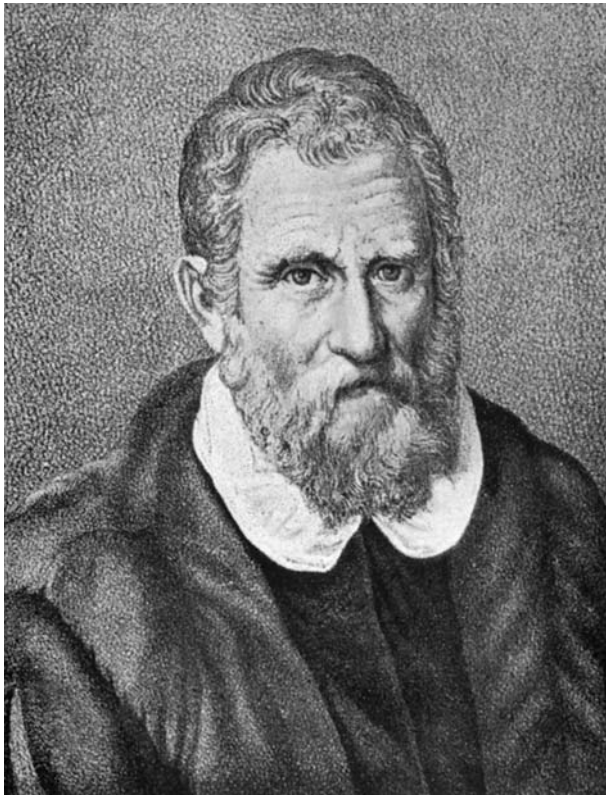
VENETIAN EXPLORER

The legacy of Marco Polo, a Venetian trader who was one of the earliest Europeans to travel to China on the Silk Roads, includes one of the best-known travelogues in history. He did not write *The Travels of Marco Polo* himself, however, but rather dictated it to a fellow prisoner of war who may have embellished (or omitted) some of what he heard.

In 1271, at the age of seventeen, the Venetian Marco Polo (1254–1324) set out with his father, Niccolo, and his uncle Maffeo on a journey to the Mongol Empire of Khubilai Khan. Marco spent almost the next two decades traveling throughout Asia, trading and working as an official within the Khan's administration. After his return to Venice, Marco Polo was captured in 1298 by the Genoese navy while serving as the "Gentleman-Commander" of a Venetian galley during a war between the Italian city-states. While imprisoned in Genoa, Marco recounted his adventures to his cellmate, Rusticello of Pisa, a writer of romance stories, who had served at the court of Edward I of England. Rusticello's account of Polo's trip, titled the *Travels of Marco Polo*, was one of the first depictions of Asia to appear in the West. Translated into many languages, the *Travels* circulated widely throughout Europe in handwritten manuscript form before the appearance of the printing press. Marco Polo's *Travels* influenced European perceptions of Asia from the late medieval period through to the Age of Discovery in the sixteenth and seventeenth centuries. In 1492 Christopher Columbus carried a copy of the book with him on his voyage west across the Atlantic during his attempt to find a new route

to the riches of Marco Polo's Cathay (as anglicized alternative to the name *China*, especially popular in Europe after Polo used it in his book).

In 1260 the merchants Niccolo and Maffeo Polo joined a Venetian trading mission to the city of Bukhara, located on the famed Silk Roads network in modern-day Uzbekistan. From there they joined a Mongolian embassy and traveled to the court of Khubilai Khan at Kanbalu (Beijing). The elder Polos spent the next several years trading in China until they were ordered by the Khan to return to Venice as his emissaries. When they returned home, Nicollo and Maffeo were instructed to gather a letter from the pope, one hundred Christian scholars as well as a flask of oil from the lamp from the Holy Sepulchre in Jerusalem, and then to return to Kanbalu. When the Polo brothers finally arrived back in Europe in 1269, however, they discovered that Pope Clement IV had died the previous year and had yet to be replaced. Unable to secure the required papal letter or ecclesiastic scholars until a new pope was named, Nicollo and Maffeo left Rome and returned to Venice, where they spent two years awaiting the election of a new head of the Church. Unable to wait any longer and fearing that Khubilai would be angered by their lengthy delay, the Polos, this time accompanied by young Marco, set out on a return voyage to the court of the Mongol ruler. After a brief interruption following the eventual election of Pope Gregory X, the Polos, along with a flask of holy oil and a mere two Christian missionaries left the safety of the Mediterranean world in 1271 to begin their journey across Central Asia.



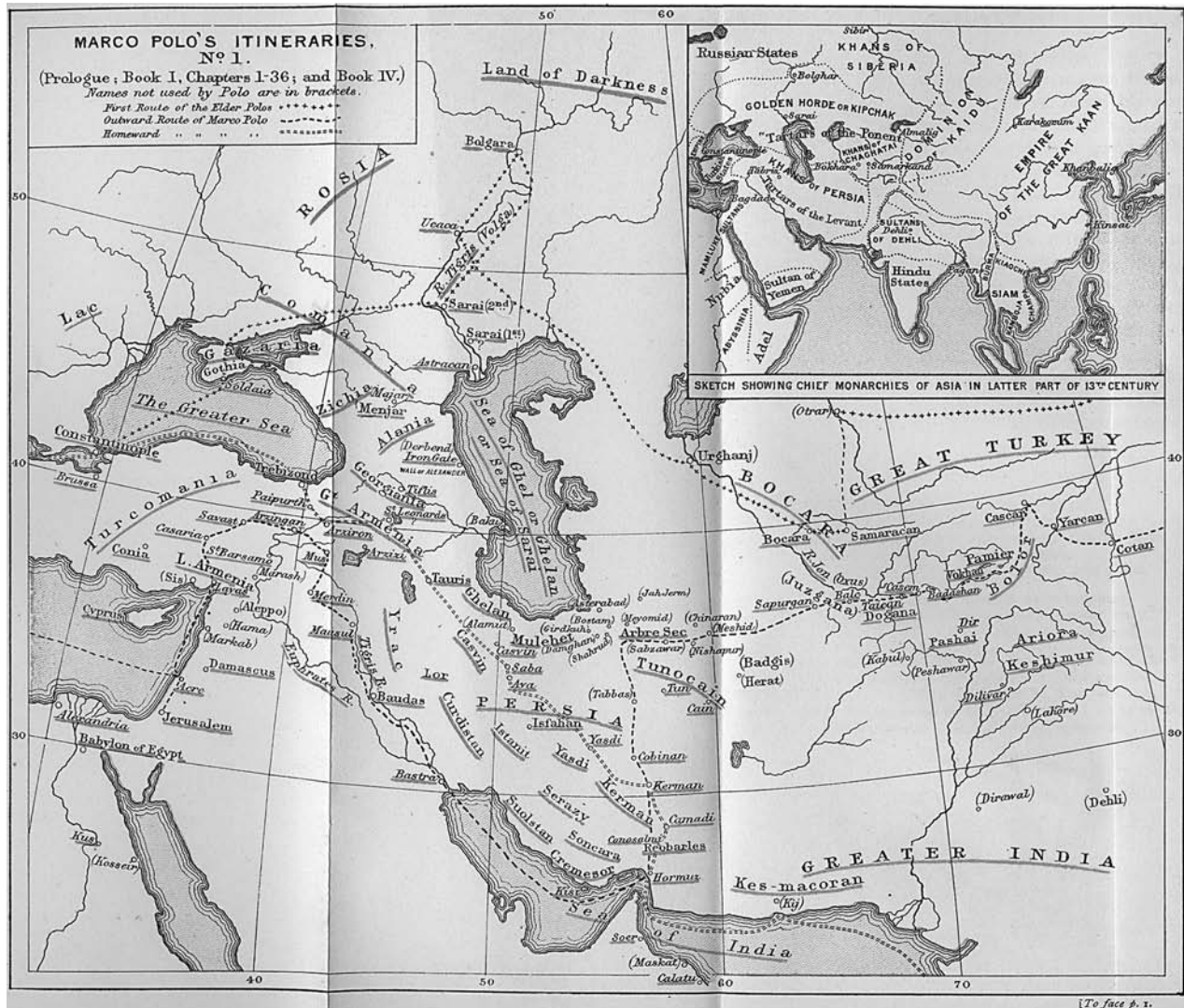
Marco Polo, a portrait based on a painting in the Gallery of Monsignore Badia in Rome. The story of his adventures along the Silk Roads became one of the best-known travelogues of all time.

Although the missionaries abandoned the party in Armenia, the Polos did return to Khubilai's summer palace at Shandu after a difficult journey through Persia, Afghanistan, Turkistan, and eventually Tibet and the western reaches of China. The Khan was impressed by young Marco and over the course of the next twenty years appointed him to several official positions within his government, including the post of governor of the city of Yangzhou between 1282 and 1285. While in China Marco also visited the southern regions of Khubilai's empire along the Burmese border and much of southern China; he also had a lengthy stay in Hangzhou (Kinsai), the former capital of the Southern Song dynasty. During their time in China, the Polos prospered, but by the late 1280s, they were eager to return home and petitioned the Khan for permission to leave. In the *Travels* Marco claimed that Khubilai had become attached to his Venetian advisors and at first refused their request. At last an opportunity

arose that provided the Polos with a reason to serve Khubilai one last time. The Khan of Persia had lost his wife and had requested that another princess from the same Mongol family be sent to marry him. Since the overland route was extremely dangerous, the Polos volunteered to serve as ships pilots and to escort the princess to Persia by sea. Reluctantly, Khubilai agreed and allowed the Polos to depart, asking that they deliver messages of friendship to the pope and the kings of Europe. Departing in 1292 from the port of Xiamen (Amoy), the Polos traveled past the islands of Sumatra, Java, and along the coast of India before reaching Persia two years later. The following year, they finally arrived back in Venice after being away from home for almost twenty years.

In early 1298, just three years after his return to Venice, Marco Polo found himself serving as a "Gentleman-Commander" or advisor aboard a war galley in his city's navy. At this time Venice was engaged in a war with its rival Genoa over trading rights in the eastern Mediterranean. On 7 September 1298, Marco Polo was captured, along with the entire Venetian fleet, by the Genoese navy. He was then imprisoned in a Genoese jail where he spent the next several months regaling his fellow prisoner, Rusticello, with his tales of adventure and the riches of the Khan's empire. Within a year the war between Venice and Genoa was concluded, and Marco Polo returned home a second time.

Back in Venice, Marco married a woman named Donata, with whom he would have three daughters: Fantina, Bellala, and Moreta. Little else is known of his life from this point on, except that he continued to engage in trade and that he presented a French nobleman with a copy of his *Travels* in 1307. Marco's fame as a traveler spread during his lifetime, although not many people believed his accounts of the riches of China, the sophistication of Asian culture and technology, or the size of the Khan's empire. Most Europeans simply could not believe his tales of paper money, burning black rocks (coal), or cities with populations the size of Western nations. So



incredible were the details in the *Travels* that Marco Polo was often referred to as “Marco of the Millions,” in reference to the number of lies he must have been telling.

In a controversial book published in 1996, the historian Frances Wood argues that Marco Polo was indeed lying and that it is doubtful that he traveled anywhere near China. Along with other critics of Polo's account, Wood notes that Marco failed to mention the Great Wall, tea drinking, the Chinese written script, or the bound feet of Chinese gentry women in his tale. Perhaps these omissions, as well as the more fanciful elements in the *Travels*

involving cannibalism and bizarre sexual behavior, can be blamed not on Marco Polo, but on the chronicler of his adventures, Rusticello. In the end, whether or not Marco Polo ever did make it to the Khan's capital or serve as a Mongol official, is not as important as the fact that his *Travels* inspired generations of Europeans to look beyond their borders and to eventually search for routes to the riches he described.

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See also China

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Population and the Environment

Examples throughout history reveal that the simple formula—more people equals more environmental disruption—does not always apply. Nonetheless, in most circumstances, population growth has brought accelerated environmental change and continues to do so. Since the mid-twentieth century, as human population growth approached its maximum rate, the relationship between population growth and the environment has been the subject of popular and scholarly debate.

The relationship between human population and environment, contrary to popular belief, is anything but simple. In the past half-century, as concern over environmental degradation mounted, popular discussion more often than not emphasized the simple, appealing equation: more population equals more environmental degradation. Although this is true in many circumstances, it is by no means invariably so. Scholars have expended great energy trying to tease out the relationship, but with limited success. The question, in both popular and scholarly debate, has been for fifty years and remains to this day a highly political one, with deeply felt principles involved.

History of Human Population

Efforts to count the number of people in a given territory began in ancient times. The first effort to take a census for an entire polity (Tuscany) was made in 1427. Reasonably reliable censuses date from about 1800 and for most of the world from about 1950. So, reconstructing the history of the entire human

population inevitably involves a hefty amount of inference and educated guesswork. Opinions vary, although there is remarkable consensus on the general trajectory. (See table 1.)

Although it is unclear exactly when humans became humans, when they did there were few of them. Living as hunter-gatherers they were constantly on the move. Carrying multiple small children was a great burden, so early humans checked their fertility by prolonged breast-feeding (which reduces a woman's fertility) and probably checked population growth via infanticide and abandonment. In any case, population growth was extremely slow by today's standards, although it should be understood that today's standards are a bizarre anomaly: for most of human

Table 1.
Estimated Global Populations

Date	Population (in millions)
300,000 BCE	1
10,000 BCE	4
1000 BCE	50
1 CE	200
500 CE	200
1000 CE	270
1200 CE	380
1400 CE	370
1600 CE	550
1800 CE	920
1900 CE	1,625
2000 CE	6,000

Source: (Cohen 1995, appendix 2)



Various aspects of farming in ancient Egypt are depicted in the Tomb of Nakht, on the West Bank of Luxor.

history population growth in net terms was close to zero, and that population declined almost as often as it grew.

With the shift to food production and more sedentary ways of life, the chief constraint on population growth, the difficulty of carrying around small children, eased. The origins of agriculture date to about ten thousand years ago, at which time there were 4 million (more cautiously, 2 to 20 million) people on the Earth. Where agriculture first took root, in southwestern Asia and the tropical lowlands of the Americas, population growth accelerated somewhat. Birthrates climbed, and although death rates eventually did as well, they did not keep pace. Death rates eventually climbed because agricultural societies acquired new diseases, most of them transfers from herd animals such as pigs, cattle, and camels, that quickly killed people, especially young children. Crowding helped spread such diseases rapidly and promoted others that flourished where human beings lived amid their own wastes.

Gradually agriculture spread throughout much of the suitable terrain on Earth, and most of the human population lived in agrarian societies in which villages formed the social nucleus. Irrigation, especially in Egypt, southern Asia, and East Asia, allowed more productive farming and still denser populations. By 3500 BCE cities began to emerge, first in Mesopotamia. The efficiency of agriculture is extremely variable, depending on soils, crops, tools, and other factors, but as a general rule it can support ten times the population density that hunting and gathering can. For this and other reasons agricultural societies spread fairly rapidly at the expense of the less populous communities of hunter-gatherers.

In agrarian societies, children from the age of about five could perform useful labor, such as tending chickens or weeding gardens. Without the requirement of constant migration, children were more an economic asset than a liability, and so, except in conditions of land scarcity (and even sometimes in such conditions), people tended to marry young and reproduce prolifically. Fertility (here presented in the form of the crude birthrate) reached levels of perhaps 50 per 1,000 per year (about four times as high as the current birthrate in the United States), although rates of 35–40 per 1,000 were probably more typical. Even so, reproductive exuberance barely kept up with the toll from disease and famine, which every now and then reached catastrophic levels, pruning back the population growth of happier years. This, in broad strokes, was the demographic regime of agrarian society, the majority experience of humankind from at least 3000 BCE until 1800 CE.

During that time population grew much faster than it had during pre-agricultural times, although still slowly in comparison to today's growth rates. And there were times when population declined. On local and regional scales, epidemics and famines produced such catastrophes fairly regularly, normally at least once or twice within every generation. On the global scale there were at least two great catastrophes, each of which probably brought global population decline (although the figures are not reliable enough to say with assurance). The first



Aerial view of Mexico City. Urban sprawl is one direct result of population growth. Photo by ardelfin (www.morguefile.com).

of these was the great pandemic of the fourteenth century known as the Black Death, probably a result of the spread of bubonic plague throughout most of Asia, Europe, northern Africa, and perhaps parts of sub-Saharan Africa. It reduced the population of Europe, Egypt, and southwestern Asia by perhaps one-quarter or one-third and on a global level by perhaps one-seventh or one-tenth. In Europe the population took 150 years to recover from the plague's ravages. The second great catastrophe came when the population of the Americas was exposed to Eurasian and African diseases in the wake of voyages made by Christopher Columbus and other explorers. Estimates of the population loss for the period from 1500 to 1650 range from 50 to 90 percent. Because there are no good data on the size of the pre-Columbian population in the Americas, it is impossible to know how large the global effect of this disaster may have been. It might have lowered total global population, although more likely, because there were far more people in Eurasia and Africa

than in the Americas, the total effect repressed world population growth without forcing it below zero.

Accelerating Growth

During the eighteenth century human population embarked on its current spectacular expansion. In several parts of the world epidemics and famines started to recede, and death rates fell. The reasons behind this remain uncertain, although ecological adjustment among pathogens (agents of disease) and their human hosts was surely part of it, as were improvements in food supply and famine management. In some places birthrates also rose slightly. During the nineteenth century world population almost doubled, and then in the twentieth century it almost quadrupled as death rates tumbled. Better sanitation, vaccines, and antibiotics lowered the toll from disease, and much more productive agriculture increased the food supply sharply. In Europe by the 1890s families responded by consciously limiting the number of

births, a reaction that occurred later but more quickly in most other parts of the world. When and where birthrates shrank, population growth slowed; when and where birthrates remained robust, as in much of Africa, Central America, and parts of southern and southwestern Asia, population growth spurted after 1950. Globally, the growth rate peaked around 1970 at about 2.1 percent per year, and population increased by another billion every 12 to 15 years. By 2009 annual growth had declined to 1.1 percent per year, or about 73 million additional people annually. Demographers now expect the world's population to reach 9 or 10 billion around 2050.

For most of history roughly three-fourths of humanity lived in Eurasia. That remains the case today, but the proportion living in the Americas grew sharply after 1750, and the proportion living in Africa leapt upward after 1950. (See table 2.)

Population Policy

People have voiced concern that humanity is too thick on the ground since at least 1600 BCE. Such concern, however, has been rare until recently. Political authorities, when they gave any consideration at all to population, generally took the view that the more people there were within their borders, the better. All the major religions favored population growth, too. This is not surprising: until the last 250 years survival was so precarious that maximizing births

was usually a sensible insurance policy against disaster. But in the mid- and late-twentieth century a few governments began to see matters differently. India and China, by far the two most populous countries, committed themselves to birth control, and in China's case to stern restrictions that between 1978 and 2009 kept the population 300 million lower than it would otherwise have been (it was 1.33 billion in 2009). Other countries in the twentieth century, especially in Europe, sought to increase their birthrates but to very little effect.

Population and Environment

At all times and places the relationship between population and environment is one of mutual interaction. Environmental conditions affect population's trajectory and population growth (or decline) affects the environment.

Historically, the environmental conditions that most influenced population were climate, disease, and agriculture. Major climate shifts, such as the waxing and waning of ice ages, strongly affected human population by changing the proportion of the Earth that was habitable and by changing the biological productivity of the parts not covered with ice. The onset of the last ice age presumably reduced human population, and its end encouraged population growth. Since the end of the last ice age ten thousand years ago, climate change has played only a small

Table 1.
Regional Populations from 1750 to 2000

	(in millions)					
	1750	1800	1850	1900	1950	2000
Asia	480	602	749	937	1386	3766
Europe	140	187	266	401	576	728
Africa	95	90	95	120	206	840
N. America	1	6	26	81	167	319
South and Central America	11	19	33	63	162	531
Australia and Oceania	2	2	2	6	13	32

Source: McNeill (2000, 271).



The transformation of habitats resulting from logging, deforestation, and land development has put heightened pressure on many species.

role in determining human population size on the global level.

As noted, the human burden of disease became markedly heavier when and where people took up cultivation, especially settled cultivation, especially when domesticated animals were involved. In tropical lands, except at high altitudes, sustaining dense settled populations was difficult because so many more disease organisms flourished in the warmth. The emergence of cities also created lethal disease environments, mainly because people lived cheek by jowl, communicating infections daily, and because few cities adequately disposed of wastes. So, cities generally, perhaps invariably, were black holes for humanity, sustained only by recurrent migration from healthier, rural landscapes. This situation remained in force until the end of the nineteenth century and in many countries until the middle of the twentieth century. Eventually, mainly through scientific sanitation after 1880, cities became even healthier than rural areas, and one of the great historic constraints on population growth, the lethality of city life, was lifted.

Changes in agricultural conditions also helped to regulate human population by affecting the food supply. Irrigation agriculture, as noted, could support more people than could rainfall agriculture. But irrigation often generated salinization (the accumulation of salts, harmful to plant growth), which over centuries could spoil farmland, as in Mesopotamia, where environmental degradation probably played a role in

episodes of depopulation around 1900 BCE, around 1375 BCE, and before 1250 CE. Over centuries, even over decades, soil erosion could also significantly lower the productivity of agricultural land, which, if not otherwise compensated for, could reduce population. Salinization and erosion could easily affect local and regional populations severely, although at the global level their impacts have always been negligible.

A more recent change in agricultural conditions, the Green Revolution, has had impacts at every scale. Since the 1950s agronomists (agricultural scientists dealing with field-crop production and soil management) have bred new strains of most of the major food crops of the world, making them responsive to heavy doses of fertilizer and timely doses of irrigation water, more resistant to crop diseases and pests, and more suited to machine harvesting. As a result, modern chemicalized agriculture doubled and quadrupled crop yields. The global effect as of 2000 was to increase the world's food supply by about one-third, an essential component of the contemporary surge in world population.

Population growth, or decline, also affects the environment. Just how much it does depends on many factors, including rates of growth, existing densities of population, resilience and stability of ecosystems, the technologies available, and just which aspect of the catch-all phrase *the environment* one chooses to measure. The amount of nuclear wastes around the world, for example, has had little to do with population levels or growth rates but everything to do with technology and politics. Conversely, urban sprawl has resulted directly from population growth (although other factors have been involved).

The circumstances under which population growth proved maximally disruptive to environments were probably those in which initial levels of population were either zero or very low, the growth rate vigorous, and the transformative technologies at hand powerful. The history of New Zealand provides an apt illustration. New Zealand was long



isolated from outside influence and had no human population for millions of years—a sanctuary for species from the Cretaceous era. People first arrived around 1300 CE (perhaps as early as 1000), at first probably only a few. But the Maori—New Zealand’s original settlers—found ample resources in seals, mollusks, and large flightless birds (moas), which they hunted. They burned the forest to make better forage for creatures they hunted and to make room for crops. In the course of a few centuries, they drove the moa and a few other species to extinction and reduced the forest cover of New Zealand by about one-third or one-half. Similar dramatic changes followed upon initial human settlement of other isolated islands such as Madagascar (c. 400 CE) and Iceland (c. 870 CE). Presumably the impacts of initial human settlement in the pre-agricultural past were less pronounced, although the occupation of Australia (about sixty thousand years ago) and the Americas (about fifteen thousand years ago) may have brought on—this is the majority view but by no means a consensus view—numerous extinctions of large and mid-sized mammals. Even without much technology beyond spears and fire, humans, when entering landscapes in which species had no prior experience of human ways, proved highly disruptive.

With more powerful technologies at hand, population growth could be even more disruptive. After 1769, and especially after 1840, New Zealand acquired another settler population, primarily from Great Britain. These settlers had metal tools, which the Maori had not had, grazing animals, and eventually steam engines and the entire panoply of industrial machines. In the span of two centuries, New Zealand’s population went from less than 100,000 to about 3 million, almost all of whom used modern technologies. New Zealand lost most of the rest of its forest cover and many more of its indigenous species (mostly birds), and most of the landscape (discounting inhospitable extremes) became pastureland. Population growth alone, of course, was not responsible for this transformation of New Zealand, although it was crucial. Also crucial was the

existence of overseas markets for wool, mutton, and butter, on which New Zealand’s pastoral economy rested.

Population growth has been least disruptive where heavy labor has been required to stabilize an environment. The best examples of this concern soil erosion. Farmers, when working on slopes, inevitably risk rapid soil erosion unless they can construct and maintain terraces. But that is extremely labor intensive. In the Machakos Hills district of Kenya, for example, early in the twentieth century farmers caused high erosion rates by tilling the soil. They did not have enough people to undertake the backbreaking labor of terrace construction. But by the 1960s population growth had changed that. Farmers built and maintained terraces, stabilizing their soils. A reduction in population density in terraced mountain environments can bring accelerated soil erosion because too few people remain to keep the terracing in place. This happened in the twentieth century in the mountain regions of southern Europe when birthrates fell and young people emigrated. The endless terraces of Java or southern China would be difficult to maintain without dense population.

Population decline destabilized other landscapes as well. In eastern Africa, for example, by the nineteenth century people had learned that to keep sleeping sickness at bay they had to burn off the bush (which reduced the habitat for the tsetse fly that carries sleeping sickness). Sleeping sickness killed cattle more easily than people; it was an economic as well as a health problem. But bush control required labor, and when lethal epidemics broke out at the end of the nineteenth century and the beginning of the twentieth, one result was to make it difficult for people to control the vegetation surrounding their villages. Thus a costly ecological change proceeded: more bush, more tsetse fly, more sleeping sickness. This example, like the terraces of southern Europe, is a case in which an environment, already modified by human action and in a more or less stable state, was disrupted by population decline.

Population, when unchecked, increases in a geometrical ratio. • **Thomas Malthus (1766–1834)**

These examples show that a simple formula (more people equals more environmental disruption) does not necessarily apply. Nonetheless, in most circumstances, population growth has brought accelerated environmental change and continues to do so. In the context of the last half-century, when human population growth reached its maximum rate, the role of population has probably been greater than in previous times (with the exception of local- and regional-scale examples such as New Zealand's initial settlement). Cropland has increased by one-third since 1950, a process mainly driven by population growth. The proportion of land occupied by roads and buildings has grown roughly in step with population and chiefly because of population. The transformation of habitats, including deforestation, the extension of cropland, pastureland, and developed land, has put heightened pressure on many species lately, especially in tropical forests. This pressure, one of the signal environmental changes of modern history, has been driven in part by population growth, although it is difficult to specify how large that part might be.

Population growth also has been a factor in the increased pollution loads of modern history. In cases such as water pollution derived from human wastes, it has been a large factor indeed. But in other cases, such as the pollution of the stratospheric ozone layer by chlorofluorocarbons, population growth played only a little role, and technological change (the invention of chlorofluorocarbons) a much larger one. Thus, among types of pollution, as among environmental changes in general, the degree to which population growth can logically be held responsible varies tremendously from case to case.

In the future it is likely that population will decline in importance as a variable in shaping environmental change. This is partly because the extraordinary pulse of population growth of the past century, and especially the past half-century, will sooner or later come to an end. But this is also because technology looms ever larger as a mediator

between people and their environments, and the pace of technological change seems unlikely to slow any time soon. If global population stabilizes after 2050, as many demographers suppose it will, population shifts locally and regionally will still exert pressures of one sort or another. And it remains possible that because there are already so many people on Earth the addition of another 2 or 3 billion will have a much stronger impact than the addition of the last 2 or 3 billion. That is, there may be nonlinear effects with respect to the consequences of population growth, thresholds that, if surpassed, bring major changes. Observers have predicted catastrophic consequences from population growth for millennia but most consistently (and most plausibly) in the last forty years. It has not happened yet. If it does, it will happen within the next fifty years.

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See also Agricultural Societies; Carrying Capacity; Deforestation; Diseases—Overview; Erosion; Green Revolution; Population Growth; Salinization; Tropical Gardening

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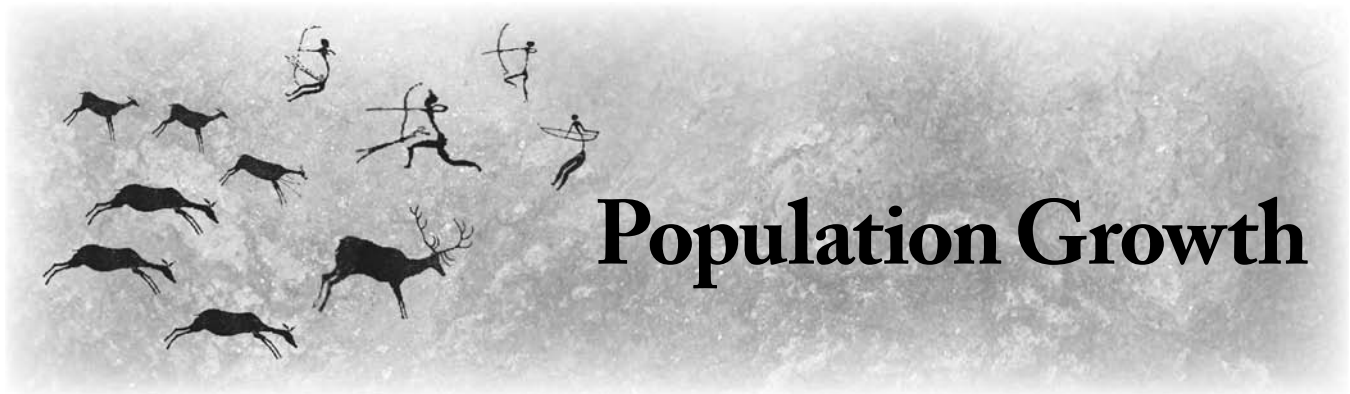
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Population Growth

As a species, humans have shown a unique capacity to adapt to their environments in ways that allow them to utilize resources from their surroundings. Thus, throughout human history, long-term population growth has stimulated change, but the demographic trends have themselves been affected by technological innovations, climatic patterns, the actions of states, and the spread of disease.

When seen over large time scales, population growth is one of the most striking features of human history. One hundred thousand years ago, there may have been just a few tens of thousands of humans on Earth. Today, there are more than 6 billion, and they can be found on all continents on Earth (even on Antarctica). No other large animal has multiplied like this (though domesticated species and fellow travelers from rabbits to sheep, from rats to cockroaches, have multiplied, as it were, in the slipstream of humans). So population growth counts as one of the fundamental distinguishing features of human history. Humans have multiplied in this way because they are more innovative than other animals. As a species, humans have shown a unique capacity to adapt to their environments in novel ways that allow them to extract more energy and resources from their surroundings. The source of this capacity for ecological innovation lies within human culture, in the ability, unique to humans, to share and therefore preserve, store, and accumulate learned information generation by generation. Population increase is a natural consequence of this ability, for the constant sharing and accumulation of knowledge has enabled humans to find new ways of exploiting their

environments, so that, unlike other species, they can move well beyond the environments in which they first evolved. Over time, humans have learned to transform their environments in order to exploit them more effectively. As a result of their unique capacity for innovation, humans have managed to feed, clothe, and house increasing numbers of their own species.

Paleolithic Migration and Early Agriculture

Population increase is apparent even in the Paleolithic (foraging) era, though in this era it mainly took the form of a slow but accelerating capacity to migrate into new environments. Humans probably evolved in the savanna lands of southern and eastern Africa, and for all but the last ten thousand years, we have lived as foragers. But the variety of foraging techniques used by humans clearly increased over time. Archaeological evidence suggests that even 100,000 years ago, humans were exploring new environments—in arid regions, for example, or near seashores or in tropical forests (McBrearty and Brooks 2000, 493–494, 530). Then, from about 100,000 years ago, humans began to migrate out of Africa. They appeared in the very different environments of Australia (from perhaps fifty thousand years ago), ice age Siberia (perhaps thirty thousand years ago), and finally the Americas (from at least thirteen thousand years ago). Though we have no direct evidence, we can be sure that these migrations meant an increase in the total number of humans. This remains true even though each particular community remained small, so that contemporaries could hardly be aware that human numbers were increasing.



An aerial view of Levittown, Pennsylvania, circa 1959. Numerous “Levittowns,” the first American suburbs, sprang up after World War II to accommodate the population surge known as the baby boom.

From about ten thousand years ago, as the last ice age was ending, agricultural communities appeared in different parts of the world. Agriculture quickened population growth. Current estimates suggest that there may have been 5 to 10 million humans ten thousand years ago; 50 million five thousand years ago; and 250 million just one thousand years ago. Agriculture stimulated population growth in many ways. Nomadic foragers have a limited ability to increase production from a given area, so they have powerful reasons to limit the number of children too young to walk or forage on their own, and to limit the numbers trying to feed from a given area. Modern anthropological studies suggest that foragers have many ways of limiting population growth, including prolonged breast feeding and even infanticide. But agriculturalists are normally sedentary, so transporting young children is not such a problem. Furthermore agriculture makes it possible to increase the amount of food produced within a given area, so it is possible to accommodate population increase even without migrating to new lands. Perhaps even more important, for farming households in most pre-modern agricultural communities it was important to have lots of children because this increased the available labor. In a world of high death rates (commonly in pre-modern agricultural societies, up to 20 percent of infants died in their first year, and another 30 percent before their fifth birthday), the best way of maximizing

the number of children surviving to adulthood was to have as many children as possible. Such behavior, and the increased resources available within agrarian societies, ensured that populations would grow much faster than in the Paleolithic era.

As in the Paleolithic era, population growth led to migrations, and as farmers migrated they helped spread agriculture around the world. But migration was not the only option, for farmers, unlike foragers, could also create larger and more densely settled communities. Eventually, “intensification” of this kind led to the emergence of communities large enough and complicated enough to be called cities. Seeing these long-term trends was not always easy at the time, because local population gains could easily be wiped out by famines or epidemics. So, to contemporaries, cycles of growth and decline were more apparent than the long-term trend toward growth. Indeed, these cycles provide the central idea of Thomas Malthus (1766–1834), the founder of modern demographic studies: that population growth would always end up exceeding productive capacity so that periodic population crashes were inevitable.

Industrial and Scientific Innovation

In the last thousand years, population growth has accelerated once again as the global human population has risen from 250 million one thousand years ago, to 950 million two hundred years ago, and about 6.8 billion in 2010. There are many specific causes for population increase in given instances, but once again, the most general explanation for this increase is that increasing rates of innovation have allowed humans to produce the food and resources needed to support rapid population growth. Death rates fell in many parts of the world in the last two centuries, partly because of the spread of new crops and improved knowledge about basic sanitation. In the twentieth century, scientific medicine and the introduction of antibiotics have reduced death rates throughout the world. But despite such advances, populations could not have continued to rise if it had not been for the burst of innovation we associate with the industrial



The entrance to a Chinese apartment on a crowded block, June 2004. Multi-storey apartment complexes replace traditional *hutong* courtyards as China's urban population continues to grow.

revolution, which provided the energy, the resources, and the techniques needed to feed, clothe, and supply the rapidly increasing populations of the modern era. Some of the most important new technologies included improved forms of irrigation, the introduction of artificial fertilizers and pesticides, the use of fossil fuels in agriculture, and the breeding of new and more productive varieties of major food crops such as rice and maize. Equally important was the huge increase in available energy supplies made possible by the fossil fuels revolution.

Today we may be in the middle of a new transition, often referred to as the “demographic transition.” Evidence has been accumulating, in some regions for more than a century or two, that as death rates fall and humans become more affluent, more urbanized, and better educated, they have fewer children. By 2000, there was no net population growth in more than thirty of the world's more affluent countries. This trend seems to mark a return to a regime of systematic population limitation, like that of the Paleolithic era.

Population Growth as a Historical Force

Although population growth has been a consequence of innovation, it has also shaped human history in profound ways. The size and density of populations can have a profound effect on rates of innovation, as well as on the structure of society, the power of states, the spread of disease, the health of commerce, and the availability of labor. The following are some of the major types of change in which population growth plays a significant role.

We have seen already that population growth can stimulate migration by causing localized overpopulation. Such migration, in its turn, has been one of the major causes of the spread of agricultural communities throughout the world. The rough calculations of the political scientist Rein Taagepera suggest that the area of the inhabited Earth within agrarian civilizations (a very rough measure of the area dominated by farming) grew from 0.2 percent some five thousand years ago to about 13 percent two thousand years ago, and perhaps 33 percent just three hundred years ago (Christian 2004, 305). While population growth was often the primary trigger for migrations of farmers into new regions, states often backed such migrations because their own fortunes depended on the size of the tax-paying populations under their control. State-backed migrations of this kind have been particularly spectacular in recent centuries as imperial states such as Russia, China, Spain, and Great Britain backed migrations of farmers into previously unfarmed lands in Siberia, Asia, the Americas, and Australasia.

Population growth has been one of the main drivers of increasing social complexity. There is little evidence for significant increases in the size or complexity of human communities until very late in the Paleolithic era. But human societies began to change significantly as soon as population densities started to rise with the appearance of agriculture. Larger, denser communities could no longer be organized through the informal kinship structures that worked well enough in foraging communities, most of which consisted of just a handful of people. Once hundreds

or even thousands of people began to live together in villages and towns, new types of social coordination became necessary to limit conflict, organize worship, and organize collective activities such as defense, or the maintenance of irrigation systems. Eventually larger communities, supported by more productive technologies, allowed for the beginnings of specialization. No longer was everyone a farmer; so specialists had to buy their food and other necessities through markets, which had to be regulated and protected. Cities required even more sophisticated forms of coordination to manage refuse collection and maintain water quality, and for defense. The earliest states appeared, in part, to take over the new organizational tasks that emerged within dense communities; but their power also reflected the large numbers of people they controlled and taxed. In the last two hundred years, population growth has created new and even more complex human communities, so that modern states have had to acquire new administrative and technological skills to manage, tax, and coordinate the activities of many millions of people. All in all, increasing population density counts as one of the main drivers of social complexity in human history.

Population growth and the human migrations that resulted from it have also been a major cause of ecological degradation in human history. There is increasing evidence that this was true even in the Paleolithic era as communities of foragers developed technologies that had a significant impact on their environments. It seems likely that the arrival of humans led to the extinction of many species of large animals, particularly in Australia, Siberia, and the Americas. In Australia and the Americas, it is possible that 70 to 80 percent of all mammal species over 44 kilograms in weight were driven to extinction after the arrival of humans (Christian 2004, 200). But the slow spread of agrarian communities during the last ten thousand years has had a much more profound impact on the environment. Above all, it led to deforestation as farmers moved into forested zones, clearing trees as they went, at first temporarily and then more permanently. Overpopulation and overfarming occasionally caused regional breakdowns in production and the abrupt decline of entire



Chinese one-child policy propaganda poster from 1986, by Zhou Yuwei. The caption reads, “Carry out family planning, implement basic national policy.”

regions. At the end of the third millennium BCE, the populations of Mesopotamia, which lived mainly from sophisticated forms of irrigation farming, collapsed. The cause was probably over-irrigation leading to salinity, which undermined the productivity of the soil. The sudden decline of Mayan civilization at the end of the eighth century CE may also have been caused by overexploitation of fragile environments, leading to an abrupt decline in the fertility of the land.

Finally, though population growth has been a consequence of the human capacity for constant innovation, it can in its turn stimulate innovation by providing new markets and new incentives to increase productivity, and by increasing the number of people contributing to the pool of new ideas. Ester Boserup (1981), a scholar well known for her theories on economic and agricultural development, was a strong supporter of the view that population growth can stimulate innovation, particularly in agriculture. Yet it is clear that such arguments should not be overstated, for there have been all too many instances (some of which are listed above) when overpopulation did not generate new and more productive technologies, but led to social, economic, and demographic collapse. There seems to be a feedback loop between innovation and population growth. But it is not entirely clear which side of this feedback loop is most powerful, and the answer may vary from place to place. Was population growth a cause or a consequence of change? Theorists and governments have been divided on the issue, sometimes arguing for measures to support

population growth, sometimes seeing overpopulation as a prelude to decline.

The debate has raged most furiously in discussions about the Industrial Revolution. Was population growth a cause or a consequence of innovation? There is no doubt that populations were growing rapidly in the eighteenth century in much of the world, or that population growth stimulated innovation by providing cheap labor and expanding markets for food and other basic necessities. Furthermore, in Britain growing populations increased the demand for fuel, which highlighted the shortage of wood and stimulated increasing use of coal, thereby encouraging the fundamental innovations (above all the steam engine) that led to increased use of fossil fuels. Yet it is also possible to argue that innovations in agriculture industry and commerce in turn led to further population growth. Global population growth was caused in part by the exchange of crops, animal species, and human migrants between Eurasia and the Americas (though the exchange of diseases between the continents caused a sharp decline in populations in the Americas). It has also been suggested that in many areas, both in Europe and elsewhere, the spread of new, commercialized forms of production and employment in rural areas (proto-industrialization) may have enabled young couples to create families at an even younger age, whereas previously they might have had to wait until enough land became available to set up a new household and start producing children. Population growth was also caused in part by an increase in the areas being farmed or exploited in new ways, both within major states and in newly colonized regions, usually with the backing of governments. All these factors—the emergence of global markets, the search for new resources with state backing, and the emergence of more industrialized forms of production in rural areas—may have stimulated population growth in the early modern period. In the nineteenth century, the industrial revolution itself stimulated population growth in new ways. New forms of sanitation reduced mortality rates, and artificial fertilizers increased food supplies. Eventually, modern scientific medicines and the spread of

knowledge about sanitation helped drastically reduce mortality rates around the world.

Such discussions show that, however necessary it may be to separate out factors such as population growth as causes of historical change, it is always somewhat artificial to do so. The very notion of “engines of growth” is little more than a crude way of trying to clarify the relative importance of different causes of change. Throughout human history, long-term population growth has stimulated change; but the long demographic trends have themselves been shaped by technological innovations, climatic patterns, the actions of states, and the spread of disease, in a complex feedback cycle that needs to be analyzed instance by instance.

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See also Agricultural Societies; Biological Exchanges; Birth Control; Carrying Capacity; Columbian Exchange; Engines of History; Globalization—Historical Perspectives; Globalization—Modern Conceptions; Migrations—Overview; Malthus, Thomas; Population and the Environment

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Porcelain was first made in China about 850 CE. The essential ingredient is kaolin, white clay that when fired at an extremely high temperature acquires a glassy surface. Porcelain wares were first exported to Europe during the twelfth century. By 1700 trade in Chinese porcelain was immense, with Ming dynasty wares (characterized by cobalt-blue-painted motifs) highly prized.

Porcelain is a type of ceramic that is white, rock hard, translucent when thin, and resonant when struck. Made from quartz and either kaolin (china clay) or porcelain stone (and later from all three) it is fired at around 1,350°C. The ingredients for porcelain are found in abundance in China but do not exist in West Asia and occur only in isolated deposits in Europe. West Asian potters produced earthenware—made from various clays and fired at 600–1,100°C, while Europeans turned out earthenware and, from the fourteenth century, limited amounts of stoneware, a ceramic produced at 1,100–1,250°C. In contrast, China produced stoneware as early as the Shang period (1766–1045 BCE) and porcelain by the Tang (618–907 CE). During the Song dynasty (960–1279), artisans at Jingdezhen in Jiangxi Province created a superior form of porcelain, made by combining kaolin and porcelain stone.

China had a monopoly on porcelain for a thousand years, until the Meissen manufactory of Augustus II (1670–1733), elector of Saxony and king of Poland, turned out a close facsimile in 1708. Indeed, the success of Chinese porcelain closely tracks that of China's economy and China's international reputation. Triumphant for a millennium, porcelain, Chinese industry, and Chinese prestige all went into steep decline in the last half of the eighteenth century, giving way to

British pottery (which came to overshadow mainland European pottery) and Western imperialism.

Before that historic turnabout, China dominated the international ceramic trade, exporting untold numbers of ceramic vessels to Japan, Southeast Asia, India, western Asia, and eastern Africa. After the Portuguese opened trade with China in the sixteenth century, Europe also became a premier market for porcelain, with perhaps 250 million pieces being imported by 1800. Jingdezhen used mass production techniques to manufacture wares for wide-ranging markets, with a single piece of porcelain passing through the hands of over seventy workers during its manufacture and decoration. Other regions could not compete with the massive Chinese economy, nor could their potters create vessels as lustrous as porcelain. Porcelain surpassed all ceramic ware before it, whether monochromatic whiteware in the Song, or blue-decorated pieces from the Yuan dynasty (1279–1368). In Borneo and Java, local ceramic traditions died out when huge quantities of porcelain were imported. Peoples in the hills of Sumatra and the islands of the Philippines incorporated porcelain into their fertility, divination, and headhunting rituals; they adopted Chinese “dragon jars,” each seen to possess a personality and embody supernatural power, into lineages and passed them down through generations. On the coast of eastern Africa and the littoral of North Africa, porcelain adorned mosques and religious shrines.

In Iran, Iraq, and Egypt in the eleventh century, potters imitated gleaming white porcelain by applying a tin glaze surface to their earthenware. Discontent with the dull result, they used cobalt oxide pigment to paint blue designs on the earthenware. By the fourteenth century, under the influence of Muslim merchants in China and



A pen-and-ink representation of a Chinese porcelain dragon jar decorated with an intricate floral motif.

Mongol rulers in Beijing, potters in Jingdezhen also began producing vessels in blue and white, the ceramic style destined to conquer the world, imprinting them with images of elegance and refinement.

Rulers of Mughal India (1526–1857), Safavid Iran (1501–1722/1736), Mamluk Egypt (1250–1517), and Ottoman Turkey (c. 1300–1922) collected blue-and-white porcelain, while potters in those kingdoms replicated and transformed Chinese designs on their own blue-and-white earthenware. When porcelain reached the West in large quantities after 1600, the same thing happened: the elite amassed blue-and-white porcelain, and potters in Holland, Germany, France, and Italy copied the Chinese ceramics, combining their own traditional motifs with imaginative versions of Chinese pagodas, Buddhist symbols,

and urbane mandarins. At the same time, European princes, influenced by mercantilist doctrine, aimed to staunch the flow of silver bullion to Asia to pay for exotic commodities, including porcelain. In the end, the race to find a formula for porcelain was won by Augustus II, although within a few years, absconding artisans carried the secret to other manufactories.

Still, neither Meissen nor its great competitor, the Sèvres manufactory outside Paris, could compete internationally with Chinese porcelain. That was the achievement of Josiah Wedgwood (1730–1795), the pottery baron of Great Britain. He produced an innovative glazed earthenware, christened “creamware,” that was as durable and thin as porcelain. Equipping his manufactory with steam power and employing mass production methods (modeled on Jingdezhen’s), and being attentive to the latest fashion styles and promotion techniques, Wedgwood aggressively sold his pottery, driving Chinese porcelain from markets around the world. Just as veneration for China in Western intellectual and ruling circles began declining precipitously after 1750, so too Chinese porcelain fell from its age-old pedestal.

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See also Art—East Asian and European Connections

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Portuguese Empire

The Portuguese Empire was the first and longest lasting of all the empires that western Europeans created. For centuries it provided a forum for an unprecedented variety of cross-cultural interaction, and it owes its longevity to its maritime, trade-based structure.

After Portuguese king Afonso III, who reigned from 1248 to 1279, expelled the Muslims from Portugal, the wars against Islam moved overseas when in 1415 an expedition of glory-hungry Portuguese knights captured—and held—Ceuta, now a Spanish enclave in modern Morocco. That expedition marked the beginning of the Portuguese Empire.

The Empire Expands

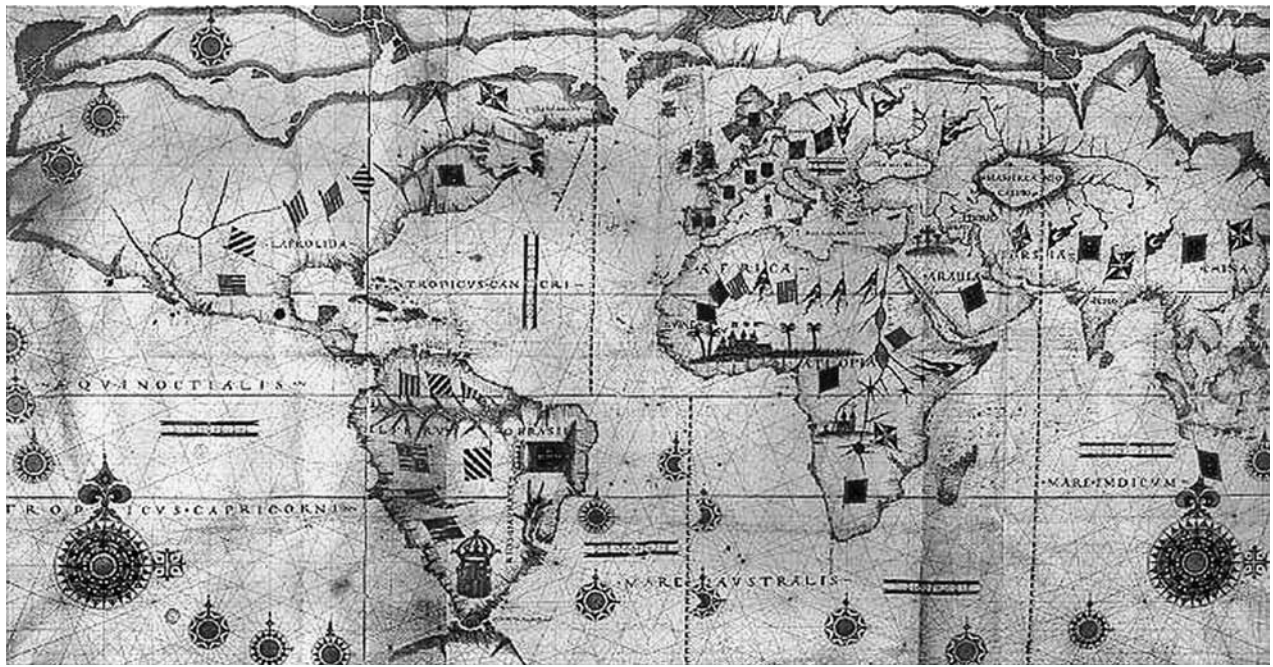
Long-standing royal support of maritime activities had culminated in Portuguese Prince Henry the Navigator's promotion of the exploration of the African coast in the new caravel sailing ships rigged with lateens (characterized by a triangular sail extended by a long spar slung to a low mast), which could sail closer to the wind than ever before. By 1435 West African gold was used to reintroduce a gold currency in Portugal, and bases were established on the Gold Coast at Mina (1482) and Axim (1503). In 1498 the explorer Vasco da Gama discovered an all-sea route to India, around the Cape of Good Hope. Two years later the navigator Pedro Alvares Cabral improved the route, avoiding the calm waters of the Gulf of Guinea by skirting the coast of Brazil, which the Portuguese also claimed from Spain under the terms of the Treaty of Tordesillas (1494).

Commercial and missionary expansion, along with a desire for Guinea gold and an alliance with

Prester John (a legendary Christian king and priest of the Middle Ages) against the Muslims, motivated these explorations. As a member of da Gama's crew explained in Calicut (a city in southern India) to two astonished Spanish-speaking Tunisians, "We have come to seek Christians and spices." Although King Manuel I's (1469–1521) assumption of the title "Lord of the conquest, navigation, and commerce of Ethiopia, India, Arabia, and Persia" reflected ambitions more than realities, the monarchy would keep the title for centuries.

1505–1598: Constructing an Empire

A celebrated veteran of the wars against Islam, Francisco de Almeida (c. 1450–1510) left Lisbon, Portugal, in 1505 to serve as India's first viceroy. He wrested an incomplete dominance of Indian Ocean trade from the Arabs and Muslim Indians by defeating their combined naval forces off Diu in western India in 1509. That year he gave up his office to a Crown-appointed governor, Afonso de Albuquerque (1453–1515). During his tenure Albuquerque conquered Muslim Goa on the western coast of India to serve as the Portuguese capital, and captured the entrepôts (intermediary centers of trade and transshipment) of the strait of Melaka on the Malay Peninsula (1511) and the Strait of Hormuz in the Persian Gulf (1515). Having secured these key straits, the Portuguese expanded their maritime empire with a string of permanent forts along the coasts of eastern Africa, India, and Ceylon, which complemented the sizeable lands acquired along the Zambezi River in Africa and in western India. Portuguese victories came as much from their tenacity and superior firearms as



Atlas attributed to Sebastião Lopes, circa 1565. The flags represent the holdings of different empires at the time.

from native rulers' intramural conflicts and disinclination toward maritime battles that earned them no prestige.

Lacking a relative military advantage in eastern Asia, the Portuguese reached commercial agreements with the local authorities in Bengal and China. Although early relations were troubled, through informal agreements worked out in the 1540s the Portuguese began to lease the Macao Peninsula from the Chinese. Regular trade with Japan began in 1544 and was funneled through Nagasaki after 1569. Ships were required to pay tolls at Portuguese ports. This system gave the Portuguese dominance of the spice trade, the principal source of the empire's wealth. At century's end the Estado da Índia (State of India) stretched from Japan to the Cape of Good Hope. Importation of peppers and other spices, as well as silks and porcelains, affected a trade deficit that was balanced with gold bullion and the profit from the "country trade" between Asian lands. Although Brazilian sugar became the first profitable crop export from the Americas, commerce overshadowed agriculture. Amidst the daunting expenses of empire, colonies still had to import foodstuffs along with manufactured goods.

A typical Portuguese vessel sailing to Goa might carry one or two women for every hundred men, and

a Goanese population of mixed heritage soon developed. Albuquerque, in fact, married his men to the local widows created by his invasion. The Portuguese suffered from a labor shortage throughout Asia, and on their merchant vessels a captain and a dozen soldiers (as young as six years old) might be the only Europeans among a crew of African and Asian slaves.

To discharge the universal responsibility that it claimed for non-Christians, the papacy delegated a variety of Church patronage rights to the Portuguese crown. Thus, the Inquisition (a Church tribunal) remained under royal authority, and all missionaries were required to obtain royal approval and to depart from Lisbon. Jealous of its prerogatives, the Crown blocked the development of an overland route to Asia under the protection of the Habsburg ruling house of Europe and icily suggested that unauthorized missionaries be rerouted to Greenland. The mass destruction of Hindu temples in Goa in the 1540s gave away to the policy of denouncing conversion by force even while introducing legal restrictions on non-Christian religions.

When Henry the Cardinal-King (1512–1580) died, his nephew Philip II of Spain pursued an inheritance claim to the Portuguese crown, which he solidified through bribery and an invasion. Philip's successors



The statue of Christ atop Corcovado, 710 meters above the city of Rio de Janeiro, commemorates the 100th anniversary of Brazil's independence from Portugal in 1922.

did not honor his promises to respect traditional liberties, and Portugal would regain independence in 1640. Although the administration of each domain remained distinct, the territories of the joint crown of Portugal and Spain became the first empire upon which the sun never set.

1598–1663: Portuguese–Dutch World War

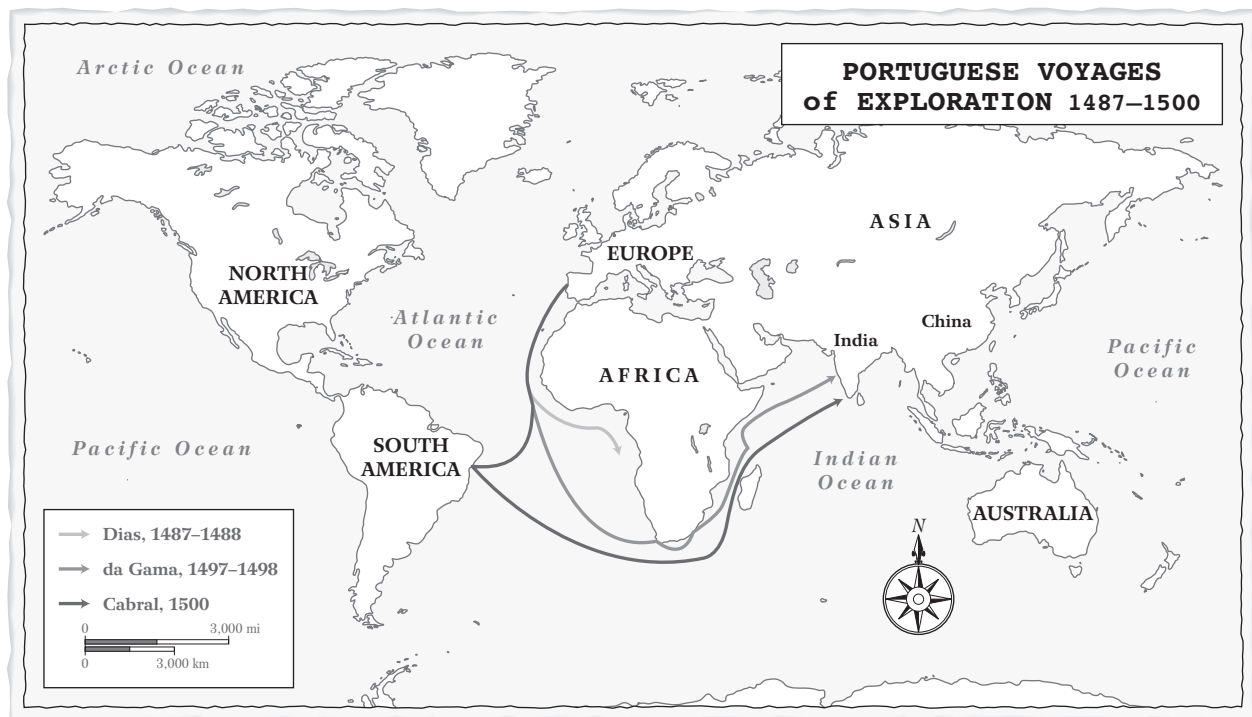
Battling for independence from Spain, the Dutch came into conflict with the Portuguese through the Spanish-Portuguese union. Although traditionally trading partners with Portugal, the Dutch challenged Portuguese dominance of the spice trade by seeking spices at their Asian sources. From the Dutch attack on Príncipe and São Tomé on the western coast of Africa (1598) to their capture of Portuguese settlements on the Malabar coast of India (1663), the Protestant Dutch and the Catholic Portuguese fought a global war for global trade, not only over the European commerce, but also over the slave trade in Africa, the sugar trade in Brazil, and the spice trade in southeastern Asia. Superior resources and leadership positions awarded for experience rather than social status gave the advantage to the Dutch, although the Portuguese were acclimated to tropical warfare and generally enjoyed greater support from indigenous peoples—a

result in part of Portuguese marriage patterns and the efforts of Catholic missionaries. Even in areas occupied by the Dutch, such as Brazilian Pernambuco from 1630 to 1654, use of creolized (hybrids of mixed Portuguese and indigenous languages) Portuguese languages endured. Hormuz was seized in 1622 by Shah Abbas of the Safavid dynasty of Persia in cooperation with the British East India Company. Melaka, the other vital port in the Portuguese system, fell to the Dutch in 1641 after a long blockade.

1663–1822: Divergences

Dutch victories in Asia shifted the focus of the Portuguese Empire to Brazil, originally little more than a way station for the fleet to Goa. The world's richest known gold deposits were discovered in Brazil in 1695, causing a gold rush and a shift of population from the coastal areas. During the eighteenth century gold would displace sugar as the core of Brazil's economy.

After 1755 equally important changes came from reforms introduced by the Portuguese king's prime minister, the Marquês de Pombal. Pombal formed two chartered companies with monopolies on Brazilian trade. He closed Brazilian ports to foreign ships in order to wean the ports from commercial dependency on Britain. A legal equality was announced



for whites and indigenous peoples, and in 1763 the Brazilian capital was transferred to Rio de Janeiro. In his pursuit of centralized power Pombal butted heads with the Society of Jesus (whose opposition was perhaps more imagined than real), and in 1759 he had the Jesuits deported from Portuguese territories. For similar reasons universities and printing presses were severely restricted.

1822–1999: Independences and Power Shifts

In Brazil heavy taxes and increasingly rigid controls over the gold and diamond industries, designed to favor the interest of Portugal over Brazil, provokes a series of conspiracies among social elites who had acquired Enlightenment-influenced ideals based on rationalism while studying in Europe. These conspiracies rarely flared into rebellion because of fears that revolt would lead to a slave insurrection.

The French emperor Napoleon's 1807 invasion of Portugal prompted the prince regent Dom John (from 1816, King John IV) to flee to Brazil under the protection of the British Navy. This transfer of the court marked the first time in world history that a colony housed the government of the mother country, and the Crown favored Brazil with decrees abolishing mercantilist

prohibitions on manufacturing and opening its ports to all nations—a move welcomed by the market-hungry British. When an 1815 decree designated the empire the “United Kingdom of Portugal, Brazil, and the Algarves,” Brazil enjoyed a status equal with Portugal.

The colonists' enthusiasm for a resident monarch cooled as cheap British machine-made goods flooded Brazil's handicraft market and as the nobles and bureaucrats who accompanied the court brought new competition for jobs. The spark for independence, however, came from Lisbon, when in 1820 liberal revolutionists demanded the return of the king to Lisbon. He appointed his son Pedro regent and returned to Portugal. Seeking a return to a subordinate Brazil tied to Portugal by a commercial monopoly, the revolutionists demanded that Pedro also return. Pedro refused and, acting on his father's parting advice, declared the independence of Brazil on 7 September 1822. Thus, a liberal revolution in Portugal triggered a Brazilian revolution more conservative and less bloody than other independence movements in the Spanish colonies at the time.

The Enduring Afro-Asian Empire

Brazilian independence shifted the heart of the Portuguese Empire to Africa, with smaller possessions



remaining in western India, East Timor, and Macao. A new policy favored African colonial expansion, which would threaten an alliance with Britain that dated back to 1372. In 1886 Portugal obtained French and German recognition for its claims to a trans-African colony extending from Angola to Mozambique, but British rival claims led to an ultimatum issued by the British to the Portuguese in 1890. Caught between proimperial public opinion and the threats of the British Navy, the ultimatum crisis toppled the Lisbon government. Subsequent agreements with Britain (1891, 1899) recognized existing Portuguese colonies, which covered almost one-tenth of Africa. Throughout their African colonies the Portuguese suffered casualties in campaigns against the Germans during World War I. During the 1920s the League of Nations denounced the forced labor practices that had replaced slavery in Portuguese colonies by the turn of the century.

As minister of colonies, António de Oliveira Salazar (1889–1970) in 1930 announced the Colonial Act, which reemphasized the colonial tradition by centralizing administration and unifying the imperial economy against foreign capital. In 1951 Salazar attempted to deflect anti-imperialist criticism by reorganizing the colonies into the “overseas provinces” of a “single and indivisible” state. The regime increasingly directed investment and white emigration from Portugal to the African colonies, thus worsening racial tensions.

Decolonization

After winning independence from the British in 1947, India began pressing claims against Portuguese enclaves on the subcontinent. Portuguese authorities violently responded to nonviolent resisters crossing into Goa from India in 1955, and diplomatic relations were severed. Indian troops seized Goa, Diu, and Daman in 1962.

Salazar’s enduring opposition to decolonization sparked renewed independence movements, troop reinforcements, and expensive wars in Africa beginning in 1961. General António de Spínola, a veteran of these wars, promoted negotiated self-government as

an alternative to continued violence in his 1974 book, *Portugal and the Future*. A 1975 military coup involving General de Spínola followed in Portugal, bringing independence to Portuguese Guinea. All other Portuguese colonies in Africa became independent the next year. The Portuguese withdrew from Angola without formally transferring power to any of the liberation movements that had been active in the country, and a long and increasingly internationalized civil war began. Nearly 1 million people fled to Portugal from the former African colonies, adding a refugee crisis to the already volatile domestic situation.

On 28 November 1975, East Timor declared its independence but was overrun by Indonesia nine days later.

The last of the Portuguese overseas provinces, Macao had lost its economic role to Hong Kong after 1842 and had declared its independence from China in 1849. Its neutrality during World War II made it attractive to European as well as Chinese refugees, who came in even greater numbers after the Communist takeover of China in 1949. Not until 1984, under pressure from the Portuguese governor, did the majority Chinese population obtain the right to vote. Only in 1987 did China agree to assume rule of Macao: following the pattern established by Hong Kong two years earlier, Macao returned to Chinese rule in 1999 under an agreement preserving local autonomy for fifty years.

As the first and longest lasting of the European empires, the Portuguese Empire is notable for its longevity and for its maritime, trade-based structure. Today Portuguese Creole languages continue to be spoken in Africa, Asia, and the Americas. Founded in 1996, the Comunidade dos Países de Língua Portuguesa (CPLP) unites eight Portuguese-speaking countries to promote the language and to facilitate the cross-border circulation of their citizens.

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See also da Gama, Vasco; Henry the Navigator; History, Maritime

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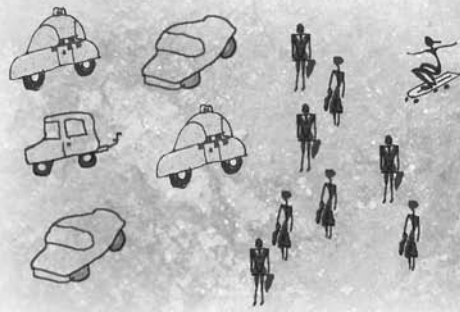
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chat

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Postcolonial Analysis

Postcolonial analysis is a mode of inquiry into the nature and aftereffects of European colonial rule in different parts of the world, from the Americas to India and Africa. It has emerged since World War II as one of the most dynamic if not controversial modes of inquiry to be articulated in the humanities.

Much thought in postcolonial analysis is of recent origin, having developed during the past century out of the confluence of traditions that are strongly anticolonial, highly theoretical, and interdisciplinary in their orientations. Drawing from an eclectic range of theorists (Homi Bhabha, Jacques Derrida, Frantz Fanon, Michel Foucault, Mohandas K. Gandhi, Antonio Gramsci, Edward Said, and Gayatri Spivak) and intellectual traditions (feminism, Marxism, postmodernism, and psychoanalysis), postcolonial theory has opened new fields of inquiry across diverse disciplines that have reframed the phenomena of European colonialism and its legacies. It continues to critique social inequality and structures of power around the globe, supporting the resistance of subordinated peoples to dominant traditions. Postcolonial analysis tends to be self-consciously critical as it attempts to fashion new forms of cultural and political activity.

Canonical in the development of postcolonial analysis has been the work of Edward Said, whose book *Orientalism* (1978) discussed the ways in which European representations of the “Orient” were responsible for producing enduring stereotypes that have persisted to this day. More recently, postcolonial historians have also been deeply concerned with recording the lives and voices of subaltern (disempowered) peoples.

Drawing from a range of theories spread across disciplines, these subaltern historians have generated a renewed interest in questions of power, inequality, and human agency. But this mode of inquiry has its share of critics. While some have critiqued the possibility of ever writing subaltern histories, others dismiss these postcolonial writers as migrant “Third World” intellectuals enjoying the benefits of a restructured capitalist global economy. Still others criticize postcolonial theorists for their use of incomprehensible language and excessive indulgence in intellectual gymnastics.

Postcolonial Analysis and World History

Postcolonial writings examine a range of topics that interests world historians, such as colonial encounters, diasporic (scattering) and immigrant experiences, and modern capitalism and its discourses of development. In such writings postcolonial analysts tend to unpack long-held views of scholars to reveal the nuances that are inherent in any historical phenomena but that are often ignored by others. For instance, postcolonial writings have contributed significantly to broadening our understanding of long-studied phenomena such as European colonialism. Colonizer-colonized interactions are no longer seen as colliding worlds but rather as complex, hybrid, and sometimes contradictory flows that shape both the colonizer and the colonized. Postcolonial writers have been careful to take into account the role of class, gender, race, sexuality, ethnicity, and nationality in explaining historical processes. Writers have given critical attention also to how Europe’s intellectual legacies (eighteenth-century Enlightenment thought



British and Indian officers of Fane's Horse, a cavalry serving in China during the Second Opium War. From *The Illustrated London News*, 1860.

based on rationalism, science, the modern state, and colonial knowledge) have shaped our world, engendering dangerous stereotypes, misrepresentations, and inequalities. Writers have given special attention to questions of religious conversion, Western science and education, travel writing, literature, and nationalism.

Postcolonial analysis is a valuable addition to the repertoire of approaches being used by world historians to conceptualize global flows, processes, and connections across time. It has provided world historians with a repertoire of tools for analysis drawn from feminist studies, literary criticism, Marxism, philosophy, and psychoanalysis. Postcolonial analysts study global phenomena such as imperialism, colonialism, decolonization, capitalism, world systems, nationalism, and migration not only in terms of neatly bounded nations, culture regions, civilizations, time periods, and abstract processes but also in terms of complex flows that embrace a wide range of actors across societies and time periods. The advent of subaltern studies approaches has impressed on world historians the need to critique structures of power and social inequalities and to recognize the presence of disempowered and subordinated groups (women, indigenous peoples, peasants, tribals, low castes,

gays and lesbians) throughout the history of the world. Recent postcolonial writers have taken a philosophical turn in their attempt to critique the very discipline of history—especially its intellectual debts to Western thought. These writers seek to include alternative understandings of the world that do not conform to the standards of Western reason or modern disciplinary conventions.

Implications

Yet this focus on complexity and agency in the study of historical processes has not always transitioned neatly to the study of large-scale processes. Perhaps what distinguishes postcolonial analysis from other forms of writing in world history is its reluctance to produce grand theories or analyze large-scale processes and instead to focus more on specific texts and historical situations concerned with the politics of identity formation and the agency of human beings. With many of its creators themselves migrants to the “First World,” it is not surprising that postcolonial analyses are particularly interested in the dynamics by which social identities based on class, caste, gender, nationality, ethnicity, race, and sexuality are informed and unsettled by global phenomena such as capitalism, colonialism, migration, and international politics. Postcolonial writers frequently engage in self-criticism, or auto-critique, and so postcolonial narratives can seem to break up no sooner than they take shape.

Nevertheless, postcolonial analysis has contributed significantly to the study of world history by cautioning against the development of simplistic macro (large-scale, general) frameworks and categories that usually end up losing sight of the variety of historical actors and the nuances that make up global processes. World history practiced in this vein becomes theoretically sophisticated, thematically focused, and self-critical, its dominant narratives and grand theories constantly breaking down to reveal the world full of differences, contradictions, and variations. Although we cannot yet see the full impact of these trends in world history, postcolonial analysis continues to offer

*History must be written of, by and
for the survivors.* • **Anonymous**

one of the most exciting frameworks for cultural study and will invigorate the study of world history for some time to come.

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See also Colonialism; Decolonization; Orientalism

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Postmodernism

Postmodernism can be more easily described by concepts it resists or denies—universal truths, ideas, activities, narratives, and definitions, as well as notions of rationality, authority, progress, clarity, and objectivity—than by a theory its proponents hold in common. The most radical postmodernists see world histories as being no more than rhetorical constructions fashioned from Western concepts of space and time.

In *The Postmodern Condition* (1984), the philosopher Jean-François Lyotard (1924–1998) described postmodernism as “incredulity towards metanarratives” (Lyotard 1984, xxiv). While not aimed specifically at world historians, this observation—like many others by postmodern thinkers—has serious implications for the field of world history.

Origins and the Problem of Definition

Trying to define postmodernism is rather like trying to get a uniform and cohesive set of demands from globalization protestors. The adjective *postmodern* is applied to a varied assortment of nineteenth- and twentieth-century thinkers, including Friedrich Nietzsche (1844–1900), Martin Heidegger (1889–1976), Theodor Adorno (1903–1969), Walter Benjamin (1892–1940), Max Horkheimer (1895–1973), Jacques Lacan (1901–1981), Roland Barthes (1915–1980), Gilles Deleuze (1925–1995), Michel Foucault (1926–1984), Hayden White (b. 1928), Jean Baudrillard (1929–2007), Jacques Derrida (1930–2004), Félix Guattari (1930–1992), Luce Irigaray (b. c.1932), Fredric Jameson (b. 1934), and Julia Kristeva (b. 1941). It is difficult to identify overlaps in these thinkers’ ideas,

let alone any clear program or agenda. This is because they are resistant to, and incredulous of, universal truths, ideas, activities, narratives, and definitions as well as notions of rationality, authority, progress, clarity, and objectivity. Postmodernism thus entails a questioning of the grounds and forms of knowledge claims, including those made in histories and world histories. Postmodernism shares affinities with, but is not synonymous with, poststructuralism. Poststructuralism challenges the view that linguistic structures such as signifiers (sounds or scriptive symbols or words) are stable and reflective of the mind and reality.

Postmodernism is known to most historians through the strong reactions it provokes in those opposed to it. The historians Gertrude Himmelfarb and Arthur Marwick see postmodernism as incompatible with historical study; Keith Windschuttle has connected it with the “killing” of history, and Geoffrey Elton has concluded that it is the “intellectual equivalent of crack” (1991, 41). While extreme, these comments reveal an understanding of the extent to which postmodern claims undermine many of the methods and ideas that give shape to historical research and writing. To postmodern theorists such as Keith Jenkins, notions of truth and objectivity and indeed the very activity of writing history are comforters that need to be dispensed with. Others have struck a more conciliatory chord, suggesting, as Beverley Southgate has, that history be reconstructed to “incorporate rather than repudiate postmodernist ideas and ideals” (Southgate 2003, 29).

World History and Postmodernism

Postmodernism unmasks world histories as constructions—not descriptions—of the world by

Postmodernism is modernism with the optimism taken out. • **Robert Hewison (b. 1943)**

and for particular groups. They are “grand,” “master,” or “meta” narratives that legitimate certain ideals and gloss over conflicting views and discontinuities. Traditionally that has meant the adoption of a Eurocentric position: that is, events and spaces are named, organized, and judged in line with European ideas and ideals. Framed thus, world histories convey the message that European civilization is the epitome of a modern civilization, that European culture offers a model that other cultures should and will aspire to emulate. In questioning the privileging of a single view of the past—whether Eurocentric or any other “centric” view—postmodernists argue that all we are left with are multiple and often contradictory perspectives. That endpoint appears to be incompatible with the project of researching and writing world history, as that project demands the selection, arrangement, and synthesis of historical experiences.

Adding to the challenge posed by postmodernism, poststructuralism questions whether world histories may be linked back to authors or even to a real historical world. As writers are shaped by the system of language they are born into, world histories should not be studied for their creators’ intentions but for traces of that system through the examination of other texts (intertextuality). Opinion is divided about what texts will be considered relevant in studies of intertextuality: some writers focus on contemporary works from the same genre, whereas others cast their studies much wider, crossing spatial, temporal and genre boundaries. In the wake of the death of the author, as the literary critic Roland Barthes calls it, comes the birth of the reader, who writes and rewrites meaning. This deconstruction is extended even further in the writings of the philosopher Jacques Derrida, who denies that even readers can be a source of meaning and who characterizes the search for meaning as movement in a closed maze of mirrors. In Derrida’s view, signifiers do not refer to phenomena outside of a system of language: They only refer to other signifiers in an endless chain of signification.

Responses to Postmodernism

Given the radical implications of postmodernism for the field of world history, it is surprising that few writers have addressed the topic. Nor is it clear that postmodernism has been the major stimulus for the reduced scope of new world histories and the currently lively discussion on Eurocentrism. The rise of gender history and postcolonial and world systems studies, as well as concerns about the practicalities of world history education may also be credited for these developments.

Writings on postmodernism and world history focus mainly on metanarratives that dissolve the roles of nations and historical agents. Addressing the latter, for instance, the psychologist Lewis Wurgaft has described the writing of national and world histories as a form of psychological projection intended to ensure “narcissistic equilibrium” (Pomper, Elphick, and Vann 1998, 195). The historian Stephen Greenblatt has called for the creation of world histories in which cultural difference and homogenization oscillate and deny one another mastery. Kerwin Lee Klein (2000, 275), also a historian, has taken a more critical stance, suggesting that Lyotard’s distinction between “master” and “small” narratives “carries over the venerable antinomy of people with and without history,” which postmodernism tries to escape. Jerry Bentley, who edits the *Journal of World History* (and is one of the editors of this encyclopedia), has also been critical of postmodernism, arguing that the reduction of history to discrete micronarratives has led to a neglect of cross-cultural interaction. In response, he has posited a large-scale empirical narrative from which themes like population growth are inducted, not imposed. But Arif Dirlik, a historian whose research focuses on China, argues that Bentley’s inducted empirical themes are fashioned out of Western concepts of space and time—as seen, for instance, in the naming and division of the continents—even in the most inclusive new world histories. To Dirlik’s view, world histories are rhetorical constructions, and world historians have yet to grasp that due recognition of differences “may

mean the end of history as we know it" (Stuchtey and Fuchs 2003, 133).

The opinion of postmodernist writers on what will (or should) occur after this death of history varies, and most do not say anything at all on the subject. This is because dictating an "after" is much the same as presenting an endpoint, the concept of which is too universalist for postmodernism. Some may see humans engaged in emancipatory aporia (living lives of radical undecidability, unrestrained by moral, and historiographical norms), whereas others see us engaged in conversations unrestrained by purpose and endpoint.

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See also Modernity; Periodization; World History, Writing of

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Potato, Sweet

Sweet potato grows in a wide range of environments, but it is a very important food crop in parts of the tropics and subtropics. The edible tuber, rich in vitamins A and C, is the most important part of the plant, but the leaves are eaten in some places. It is a highly productive crop and returns a large amount of food energy for the labor expended in growing it.

Sweet potato is the seventh most important food crop in the world, after maize, rice, wheat, potato, cassava, and barley. The tubers, a significant source of food energy, are rich in vitamins A and C. Sweet potato is culturally important in societies as diverse as Japan, southern United States, and New Guinea. Large quantities are fed to pigs in many countries. Sweet potato grows in a wide range of environments: from sea level up to 2,800 meters (near the equator); from about 40° north to 38° south (in New Zealand); under a wide range of soil moisture conditions; in locations with a mean annual rainfall from 750 to over 5,000 millimeters; and on a wide range of soil types. In the western Pacific, long-term cultivation of sweet potato at the same site often results in a change in vegetation from forest to a mix of woody regrowth and grass, or even to grasslands. Soil fertility is also reduced by long-term continuous cultivation. In low intensity agricultural systems—where the cropping period is short and the fallow period long—these changes do not occur.

Sweet potato was domesticated thousands of years ago in tropical America, in either Central America or western South America. Polynesian voyagers took it from its South American homeland to

the Pacific Islands about one thousand years ago. It became an important food at the extremities of Polynesia in Easter Island, Hawaii, and New Zealand before the era of European exploration. Christopher Columbus brought it back to Europe from the Americas in early 1493. Portuguese travelers then took it to Africa, India, and to Southeast Asia in the sixteenth century. It was spread from eastern Indonesia (Maluku) into New Guinea by local travelers.

Sweet potato arrived in the New Guinea highlands about 300 years ago. The new crop had a major impact there, allowing greater human populations (and pig populations, too, because humans fed their pigs great quantities of sweet potato) in high-altitude locations (2,200–2,800 meters), as well as probably resulting in a revolution in economic and social organization.

World production is now dominated by China where some 85 percent of tubers are grown. Another 10 percent of world production occurs in Papua New Guinea (PNG), Uganda, Nigeria, Indonesia, Vietnam, and Japan. Sweet potato is a significant food in three regions where consumption by people and pigs is high. These regions are the western Pacific (Solomon Islands, Papua New Guinea, and Papua [Indonesian New Guinea]); southern China; and eastern Africa (Rwanda, Burundi, Uganda, and Tanzania). It was also a significant food item in parts of eastern Asia until forty or fifty years ago, particularly in Taiwan and Japan. But consumption has decreased in eastern Asia and sweet potato is associated with poverty and harsh wartime conditions there.



Sweet potatoes sprouting. Photo by June Oka (www.morguefile.com).

In the western Pacific, the quantity produced per person has expanded greatly over the past sixty years. It is the main staple food in the Solomon Islands, parts of lowland Papua New Guinea, and all of the New Guinea highlands (both in PNG and Papua). In PNG, sweet potato now provides 63 percent of food energy from locally grown foods, compared with 45 percent some fifty years ago. The expansion of sweet potato, and other new crops from the Americas, has facilitated intensified land use in the western Pacific and has allowed two generations of a rapidly increasing population to be fed with minimal disruption.

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See also Biological Exchanges; Columbian Exchange; Domestication, Plant and Animal; Food

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Potatoes

First domesticated about 8,000 years ago in the Andes, potatoes rank fourth among twenty-first-century food crops—after rice, wheat, and maize. The potato has sustained whole populations in times of war, provided the “fuel” to energize the workforce behind the Industrial Revolution, and played a small yet significant part in the transformation of Chinese society and economy since the 1980s.

The potato (*Solanum tuberosum*) first figured in human history as the principal food of the people living high in the Andes of South America. Thousands of wild varieties of potatoes grow today throughout the Andes from Columbia in the north to Chile and Argentina in the south, but the place they were first domesticated about 8,000 years ago was almost certainly around the shores of Lake Titicaca located between Peru and Bolivia, some 12,500 feet (3,812 meters) above sea level.

At that elevation temperatures remain cool even under a tropical sun and at night freezing temperatures are common throughout the year. But narrow fields bordered by ditches filled with sun-warmed water from Lake Titicaca raised air temperatures sufficiently to keep potato plants from freezing at night. Resulting harvests could be stored for years by freezing them at night before soaking them in water and then drying them in the sun to make what the Spaniards later called *chuno*.

From the Andes to Europe—and Beyond

Chuno was what fed the laborers who built the cities and roads of the Inca Empire and its predecessors, and

when a handful of Spaniards conquered Peru in 1532, fresh potatoes and *chuno* continued to support the thousands of indigenous laborers they conscripted to work on their estates and in silver and mercury mines. The silver mine at Potosi (modern Bolivia) produced so much silver between 1545, when it was opened, and 1650, when the richest lode was exhausted, that a flood of silver inflated prices throughout Europe and Asia. Everywhere people were sure that wicked greed was responsible for the rapidly rising prices that disrupted market relationships and made wages lag behind the cost of food. Resulting suffering embittered Protestant–Catholic conflict in Europe, Sunni–Shi’a struggles among Muslims, and provoked Buddhist rebellions in China. Without potatoes to feed Peruvian miners, such an unprecedented quantity of silver could not have raised prices so rapidly. This was the first time that potatoes played a world-transforming role in human affairs.

But it was not the last, for as potatoes spread to other parts of the Earth they enlarged local food supplies and provoked population growth that disrupted older social relationships as much or more than price inflation had done. Sometimes, as in Ireland, potato-eating populations became desperately poor and vulnerable to crop failures; growing populations elsewhere, supported only in part by potatoes, provided manpower for factories and mines and helped to launch what historians call the Industrial Revolution, first in Europe, then around the world.

Exactly when and how potatoes first got to Europe is unrecorded. But since Spanish ships along the Pacific coast could not at first provision themselves with familiar European foods, locally available potatoes and other substitutes had to be used to feed sailors on



Jules Bastien-Lepage, *October: Gathering Potatoes* (1879). National Gallery of Victoria, Melbourne.

their return voyages to Spain. Soon after the conquest, it is certain that some of them found leftover potatoes worth carrying ashore as curiosities and for planting, both in the Azores and in Spain. The first written records from the Canary Islands date from 1567, and records kept by a hospital for the poor in Seville, Spain, show the purchase of a few pounds of potatoes in that year and of larger quantities in later years. We cannot be sure, however, whether these entries referred to *Solanum tuberosum* or to sweet potatoes. Complete certainty begins only after two potatoes

reached a botanist named Carolus Clusius in 1588; when he finally published his *Rariorum plantarum historia* (Antwerp, 1601) he reported that the potatoes he described in precise detail were already common in Germany and Italy. Earlier, in 1597, an English botanist named John Gerard published a woodcut of the new plant, saying erroneously that it had come from Virginia. Since the plants described by Clusius and Gerard had differently colored flowers they must have been separately introduced into Europe by anonymous sailors, who knows how much earlier.



Most of Spain was too dry for potatoes to grow without irrigation, but in the northwest Basque country rainfall sufficed to assure a good crop. By 1600 or before Basque fishermen had come to depend on the new food; these fisherman introduced potatoes to western Ireland, where they were accustomed to stop for rest and refreshment on their way to and from the Grand Banks off Newfoundland in North America.

Potatoes took hold in Ireland only half a century later when Oliver Cromwell's armies conquered and banished Irish Catholics to the westernmost province of Connaught (1662), while parceling out the rest of the country to Protestant English landowners. In crowded Connaught the fact that an acre of potatoes could feed a family for a year, if supplemented by milk from a single cow, made survival possible for the banished Irish. But since English laborers refused to accept a potato diet, throughout the next century or so the English landlords in the rest of Ireland found it cheaper to employ Catholic Irishmen than to provide the bread Englishmen demanded. Hence the rural population became Catholic once again, living almost wholly on potatoes, and deeply alienated from their Protestant landlords and employers.

Different circumstances governed the spread of potatoes on the European continent. Initial prejudice against a food so different from grain was widespread; but wherever marching soldiers confiscated grain from peasants, as was customary, prejudice against potatoes quickly faded away, since simply by leaving the tubers in the ground and digging only enough for day-to-day consumption, a family could survive even after all their grain had been seized and carried away.

Potatoes in Wartime

During the Eighty Years' War in Europe (1568–1648), Holland and Belgium became the major battleground between 1576 and 1648. There Spanish soldiers fought against the Protestant Dutch; after the Spanish Armada met defeat in 1588, the only way Spanish armies could reach that theater of war was by sailing to northern Italy and then marching over the Alps and

down the Rhine River valley. This so-called Spanish Road was where European peasants first began to raise potatoes in their private gardens as a life-saving insurance against recurrent grain seizures by Spanish soldiers on their way to war.

Seed potatoes (potato tubers grown for their buds, which are used to start new plants), and knowledge how to plant and cultivate them, presumably spread from village to village and from person to person leaving no written record. Subsequent wars waged by the French king Louis XIV (1643–1715) in the Rhinelands probably spread potatoes still more widely for the same reason and in the same unrecorded fashion.

But as long as potatoes were confined to gardens traditional methods of open field cultivation kept them marginal to European agriculture as a whole, however important they became for those who used them to escape starvation. Only after 1740 did potatoes move into European open fields, and we happen to know exactly how that occurred. During the War of the Austrian Succession (1740–1748) youthful Frederick (later the Great) of Prussia noticed that even prolonged campaigning in the Rhinelands, where Spanish soldiers once had trod, did not reduce local peasants to starvation, and he quickly discovered why. He decided that Prussian peasants needed the same cushion against military ravages; after becoming king of Prussia in 1740 he ordered local officials to find seed potatoes and show peasants how to grow them, no longer just in gardens but in fallow fields.

For centuries in northern Europe, half to one-third of all cultivated land had been left fallow and plowed in summer to kill weeds before their seeds had formed. This was the only way grain could outgrow weeds and yield a satisfactory harvest the following year. Potatoes also had to be hoed to keep back weeds. That meant they could provide an abundant supply of excellent food while weeds were kept under control at the same time, with absolutely no diminution of grain supplies, but at the cost of a lot of extra work. Extra food, however, made it easy to feed more than all the people needed to hoe potato fields, and as Frederick himself soon found

Without the potato, the balance of European power might never have tilted north. • Michael Pollan (b. 1955)

out, the crop also assured their survival in wartime as never before.

During the Seven Years' War (1756–1763) French, Austrian, and Russian armies invaded Prussia year after year and seized grain as usual wherever they could find it. But by then, despite initial local reluctance and occasional resistance to Frederick's orders, enough potatoes were growing in Prussian fields to feed everyone, thereby keeping the Prussian rural population and army safely in existence until a new ruler in Russia changed sides, the French withdrew, and Austria reluctantly decided to make peace with Frederick, who thus suddenly emerged victorious against seemingly overwhelming odds.

During the war the invading armies soon noticed how potatoes helped Prussians to survive. Other European governments quickly decided that they too needed potatoes as a resource against wartime famine. Accordingly, wherever moisture was sufficient for potatoes to flourish—that is, across the north European plain from the Loire River in France to the Urals, and beyond into Siberia—they soon began to take over fallow fields on a massive scale.

Since an acre of potatoes produced up to four times as many calories as an acre of grain, European food resources started to rise rapidly; population shot upward, as did manpower for the Industrial Revolution that raised European wealth and power so high after the invention of the steam-powered engine. The age of worldwide European ascendancy that lasted until 1914 and faded away only after 1950 thus depended in important ways on the potato. This was the second and even more important manifestation of the plant's impact on world affairs.

Impact on Populations

Since the Seven Years' war, potato acreage in Europe has expanded in time of war down to and including World War II. Elsewhere in the world, where cool and moist climates allowed them to flourish, potatoes have often played the same role of enlarging food supplies and provoking rapid population growth, though the special advantages Europeans

gained by planting fallow fields to potatoes were seldom equaled. The poverty and vulnerability of Irish potato eaters before the famine of 1845–1847 has also been approached in places like the interior of Papua New Guinea, where agricultural practices are now believed to have developed independently of other cultures (and where domestication of yams, taro and bananas dates to about 7000–6500 BCE). Farming communities in Papua accepted potatoes eagerly, only to suffer disaster when potato blight invaded their fields in 2003.

New Zealand is another place where the arrival of potatoes changed the course of events. The Maori inhabitants of that country depended mostly on sweet potatoes when Europeans first discovered it, although the climate is too cool for sweet potatoes to do well, especially in the south. But *Solanum tuberosum*, introduced in the 1770s by European sailors, thrived, and Maori farmers quickly accepted them. Nourished by potatoes even better than before, they were able to withstand exposure to all the new diseases Europeans subsequently brought with them far better than other newly discovered peoples, and are now a thriving part of society in contemporary New Zealand.

Potatoes remain of little importance in hot climates like those that prevail in Africa, India, and the Muslim lands of western Asia and southern China. In north China they remained a marginal supplement to millet and rice until after 1987, when the government gave up on collective farming and allowed peasant farmers to plant and sell whatever they wished. Potatoes then found a surprising niche in the new China after McDonalds and Kentucky Fried Chicken started selling French fries in 1992 to eager city buyers. To get the uniform quality they required these American firms at first had to import their potatoes, but from the beginning they sought suitable potatoes in China. Two other American companies that specialized in supplying potatoes to American grocery stores set to work teaching Chinese farmers how to best cultivate the new potato crop.

The wind-blown loess soils of the Huang (Yellow) River valley and Inner Mongolia, when suitably

irrigated, turned out to be ideal for raising potatoes. Chinese farmers were apt pupils, once provided with disease-resistant varieties for seed, suitable fertilizers and irrigation equipment. A crop research institute in Yunnan swiftly developed varieties specially attuned to Chinese conditions and made technical advice available to farmers far and wide, so their potatoes soon became as good or better than those produced elsewhere. The area of Chinese potato fields doubled between 1982 and 2002; yields rose by 80 percent, and China became the largest producer of potatoes in the world. They were able to supply McDonalds and Kentucky Fried Chicken with all they needed, and to deliver fresh potatoes to other Chinese buyers while also exporting potatoes to Macao, Taiwan, and even to distant Europe, where their disease-free tubers were valued as seed potatoes and consumed in fancy restaurants whose owners were prepared to pay the extra cost of transportation to get the very best. Potatoes, in short, played a small yet significant part in the startling transformation of Chinese society and economy we have witnessed since the 1980s.

Overall, potatoes in the twenty-first century rank fourth worldwide among food crops—behind rice,

wheat, and maize—no small accomplishment for a tuber once confined to the high Andes.

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See also Agricultural Societies; Biological Exchanges; Colombian Exchange; Diseases—Plant; Domestication, Plant and Animal; Food; Potato, Sweet

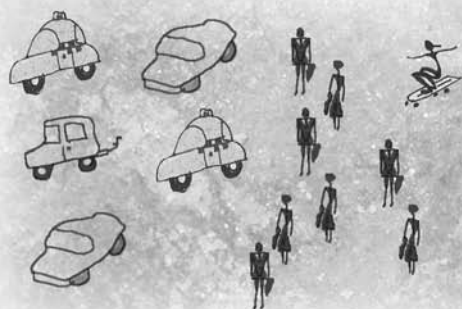
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Printing

Although printing techniques using movable type existed to duplicate writing as early as the eleventh century, Gutenberg's invention of the letterpress in the mid-fifteenth century was the catalyst fostering the widespread dissemination of knowledge and information. In the digital age of cold press (electronic) printing, and with the proliferation of copy machines and computer printers, texts continue to be replicated at an astonishing rate.

Printing is a term with many meanings. It may refer to the stamping of coins or the placing of patterns on textiles. Learning to print may mean shaping letters without using cursive script. This article deals with printing as a process for duplicating writing, and focuses on the developments that ensued after the invention of letterpress printing by the German inventor Johannes Gutenberg (c. 1390–1468) in mid-fifteenth-century Western Europe.

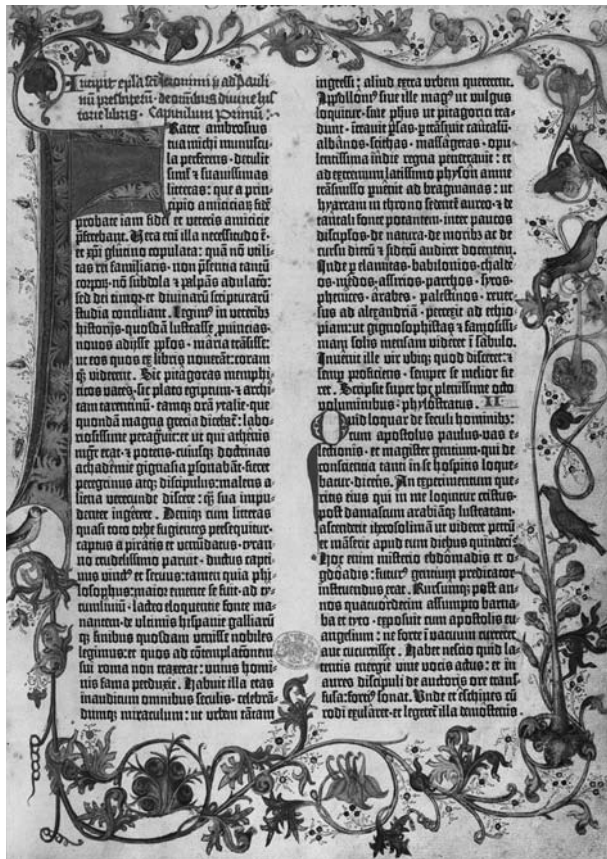
Printing Techniques—East and West

In the context of world history, Gutenberg was a late-comer. The Chinese had been using woodblocks to duplicate writing at least since the seventh century. From the eleventh century on, they were printing some texts using movable types. (After being fixed to a metal plate, the types, made of wood or ceramic, were rubbed by hand on paper.) In thirteenth-century Korea, types made of bronze were developed; later on, a special alphabet was devised to facilitate their use. Despite occasional use of these alternative techniques, printing by means of woodblocks remained the dominant Asian form.

In the West, the replication of hand-drawn images by woodcut and metal engraving is called xylography. It was in use (for making playing cards, among other objects) before Gutenberg's invention. Thereafter it served as a replacement for hand illumination and worked in tandem with letterpress printing (or typography). The latter entailed the use of a wooden handpress, oil-based ink, and types made of lead, tin, and antimony. After the mid-fifteenth century, typography, not xylography, was the dominant method for duplicating texts in the West.

Most distinctive about printing in the West was not so much the new method of duplicating texts but rather the rapidity with which it was adopted in diverse locales and the way the output of printed materials, once underway, was continuously augmented. As is often the case, learning the details about a new technique tells us little about the uses to which it will be put. No doubt the difference between the uneven development of printing in Asia and the continuous exploitation of printing in the West had something to do with the difference between ideographic and alphabetic systems of writing. But many other variables have to be considered.

In some non-Asian societies where alphabets were used, printers were forbidden to apply their craft to sacred texts. In the vast empire governed by the Ottoman Turks, prohibitions against printing not only the Qur'an, but any text in Arabic script remained in effect for hundreds of years (Robinson 1993, 229–251). In Eastern Christendom, religious printing was sanctioned and, indeed, sponsored by the church. Yet in contrast to Western developments, Russian printers started almost a century after Gutenberg and thereafter maintained a very sluggish pace (Marker 1985).



A printed page from one of the British Library's copies of the Gutenberg Bible (c. 1455) reproduces the traditional hand-copied, "illuminated manuscript" style mastered by medieval monks.

Only within Western Europe was the wooden handpress so energetically exploited by so many freewheeling entrepreneurs that some forty thousand editions of books (not to mention edicts, flysheets, broadsides, and the like) had been issued in the first forty years.

The Proliferation of Printing Shops

According to the historian Denys Hay (1967, xxii), printing spread with phenomenal speed; "by the 1490s each of the major states had one important publishing centre and some had several." To understand how this happened, the role of the few major states seems less significant than the role played by many minor ones. Most histories of printing follow the convention of organizing developments around the rise of the major nation-states. (This is notably the case with the multivolumed national book histories that have recently appeared and are still being issued.)

National histories work well enough for nineteenth-century developments, but they distort the geography of the book when applied to the earlier more cosmopolitan age of the handpress. The major centers of book production down through the eighteenth century were *not* congruent with the major political capitals such as Paris, Berlin, Vienna, Rome, Madrid, and London. They were, rather, great commercial centers such as Venice, Antwerp, and Amsterdam. This pattern persisted until the Napoleonic era. "From 1690 to 1790, the works of the most famous French writers were read throughout Europe in editions published outside France" (Febvre and Martin 1976, 196).

Indeed, nation building worked at cross purposes with the rapid expansion of early modern printing industries. The rise of a few large, well-consolidated, dynastic states was less helpful than the presence in late medieval Europe of numerous small political units: bishoprics, communes, free cities, and other assorted quasi-independent states. Right down through the eighteenth century, rulers of small principalities continued to invite printers to set up shop within their realms and thus provide revenues and publicity—that is, to fill town coffers and to satisfy civic pride. The numerous place-names that illustrate the spread of printing across fifteenth-century Europe indicate the eagerness of petty rulers and town councils to get their town's name in print at least once. Many printing offices in small Italian city-states issued only one or two editions before dropping out of the picture. The clustering of printing houses in Venice is reminiscent of Silicon Valley—not least because many of these startups (like recent "dot-coms"), rapidly went bankrupt and closed down (Lowry 1979, 18). The absence of any powerful central authority, whether provided by emperor or pope (in contrast once again to China and Korea or to the Ottoman Empire or Muscovy), provided opportunities for printers, as it did for other merchants and early capitalists, to play one power against another while extending far-flung trade networks from the shelter provided by fortified walled towns.

As the mention of trade networks suggests, when setting the stage for the rapid spread of printing shops, economic developments have to be coupled

with political ones. Late medieval particularism had to be combined with early modern capitalism in order to produce favorable conditions for rapid expansion. The late medieval merchants who were engaged in a wholesale cloth trade had developed extensive networks and sophisticated systems of financing. Textile manufacture was linked to rag-paper production. The output of new paper mills had preceded Gutenberg's invention and had benefited the retail trade in manuscript books. After Gutenberg, book production became a wholesale enterprise. Increased output was spurred by competition among printers and booksellers who curried favor with officials in order to win the privilege of issuing primers, prayer books, edicts, and other works for which there was a steady demand. Problems posed by unregulated competition led to new laws governing copyright, patenting, and intellectual property.

Although the increased output of books was the most dramatic result of the new duplicating process, the profit margin of most early printers hinged largely on their success with "job printing"—that is, with production of nonbook materials such as advertisements, almanacs, calendars, handbills, horoscopes, proclamations, and the like. Of special significance for the subsequent development of science was the increased output of visual aids such as maps, charts, tables, and graphs. Engraved copies of detailed pictures that were especially difficult to reproduce in quantity by hand aided studies in such fields as anatomy, botany, and zoology. Early printers often had instruments as well as books for sale and advertised both on title pages that contained the location of their shops. Although hand copying persisted and indeed thrived after the introduction of printing, it did so within a changed literary environment. Handwriting itself was taught with reference to printed manuals; copyists imitated the title pages, the punctuation, and the pagination of printed books.

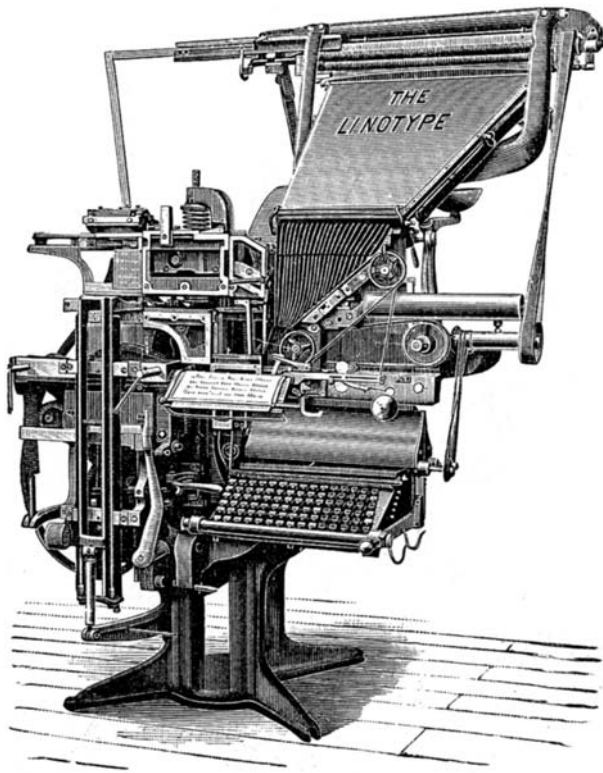
Printing and Patrons

Among the cultural and intellectual factors that contributed to the rapid growth of Western printing industries,

Italian humanism is often singled out. Book-hunting literati and their patrons played an important role in recovering and replicating many classical texts that had almost been lost. Thanks to the Greek refugees who worked in the Venetian printing shop of Aldus Manutius (1449–1515), what remained of the corpus of Greek drama was secured from further loss.

The most significant patron of the early printer, however, was the Roman Catholic Church, which had long commanded the largest supply of scribal labor. One of the very first printed products to be issued was an edition of "indulgences." These printed forms, offering purchasers partial forgiveness for their sins, were issued to help raise money for the crusade against the Turks. The printing of anti-Turkish handbills and flysheets also kept job printers busy. The Church also welcomed printing because it offered help with standardizing liturgies and educating young priests. Its patronage is suggested by the location of the first presses in Italy: a monastery in Subiaco and the papal city of Rome. Prohibitions against printing the Qur'an had no counterpart in Western Christendom. Indeed, a future pope admired a copy of the Gutenberg Bible.

The drive to tap new markets encouraged popularization, translations from Latin into the vernaculars, and a general democratization of learning and letters. By the 1500s, these trends were posing new problems for churchmen and statesmen alike. The Roman Catholic Church was divided over whether or not to authorize vernacular translations of Bibles and prayer books. After the Lutheran revolt (1517) decisions were made at the Council of Trent (1546) to authorize only the Latin Vulgate version of the Bible. From then on, lay bible reading was encouraged in Protestant regions and discouraged in regions that remained loyal to Rome. Both Catholics and Protestants used print for proselytizing and propaganda, but only Protestants hailed printing as a providential invention that enabled them to break free of papal rule. Both Catholic and Protestant officials censored the output of printers. But whereas a single *Index of Prohibited Books* provided guidance to all Catholic officials and booksellers, Protestant censorship was



The linotype, a major advance of the nineteenth century in printing equipment, which made setting type easier and quicker.

decentralized, taking various forms in different city-states and princely realms.

In all regions, learning to read paved the way for learning by reading. Autodidacts were urged to master various arts by means of numerous “how-to” texts. Authors, artists, and craftsmen—in collaboration with printers and publishers—used self-portraits, title pages, and paratextual materials to advertise their products and themselves. Individual initiative was rewarded; the drive for fame went into high gear. But the preservative powers of print made it increasingly difficult for successive generations to win notice from posterity. An ever more strenuous effort was required to cope with “the burden of the past” (Bate 1970).

From Scarcity to Abundance

The centuries of hand copying had been characterized by an economy of scarcity. The large collections of texts gathered in the Alexandrian Library and in some later centers of learning were exceptional and relatively short-lived. The retrieval, copying and

recopying of surviving texts took precedence over the production of new ones. The acquisition of literacy was confined to restricted groups of churchmen and lay professionals. Oral interchange predominated. (As noted below, this has led some authorities to contrast print not with handwriting but with speech.)

Printing introduced an economy of abundance. The hand-copied books that continued to be issued for several centuries simply added to a growing supply. The literary diets of Latin-reading professional groups were enriched by access to many more books than had been available before. More abundantly stocked bookshelves increased opportunities to compare previously authoritative classical texts with each other and with more recent work. Academic activities were reoriented from preserving ancient wisdom to registering new findings and venturing into uncharted fields. The expansive character of print culture grew more pronounced during the sixteenth and seventeenth centuries. Multivolumed reference works required constant updating; bibliographies grew thicker and more specialized. Librarians, in particular, were increasingly at a loss as to how to classify and shelve an ever-growing number of books. Merely keeping track of all the new titles became burdensome to bibliographers. Concern about information overload was experienced by each generation in turn.

In the late seventeenth century, the pace of output had increased sufficiently that booksellers began to issue reviews of new works at regular intervals, thus inaugurating the learned periodical press. Even before then, keeping readers informed about financial transactions, sensational crimes, and important battles had become a profitable business conducted by publishers of corantos (broadsides), gazettes, and newsletters. Satires on journalism were familiar to London playgoers who attended Ben Jonson’s *Staple of News* (1623). As the title suggests, news was already regarded as yet another commodity to be bought and sold.

Communications: Print versus Voice

The constant increase in books and other reading matter represents the diachronic aspects of print



culture. There were also synchronic aspects. Unlike hand-copied works, printed copies were issued not consecutively but simultaneously. The receipt of the same work by diverse readers within the same interval encouraged better coordination of diverse activities. The output of the handpress fell short of achieving the degree of standardization that marks modern editions. Yet early modern readers were able to argue, in both scholarly tomes and polemical pamphlets, about identical passages on identically numbered pages. The distribution of printed copies was relatively slow before the development of modern transport systems. Nevertheless, the age of the wooden handpress saw a marked improvement in the capacity of scattered observers to check the path of a comet against diverse predictions and to send in new findings and corrections to the editors of atlases and other reference works. Coordination took on political significance when opponents of a given regime were able to distribute pamphlets and mobilize protests in different parts of a given realm. “We made the thirteen clocks strike as one,” commented the U.S. revolutionary Benjamin Franklin.

With the output of pamphlets, journals, and newspapers, the conduct of political affairs became more difficult to contain within traditional structures. Merely by contributing letters to the editor, ordinary citizens were newly empowered to participate in public debates. Writers, who were offended by a miscarriage of justice, increasingly began to appeal over the heads of duly constituted authorities to a reading public at large. In 1775, Malesherbes (the director of the French book trade) observed, “in an enlightened century . . . each citizen can speak to the entire nation by way of print . . . men of letters are, in the midst of a dispersed public, what the orators of Greece and Rome had been in the midst of a people assembled” (Malesherbes 1989, 92).

The transmission of messages via print rather than voice points to a facet of print culture that provoked much debate. It centered on the contrast between reading and hearing. To the French Enlightenment *philosophes*, impressed by advances in the mathematical sciences, the use of print held the promise of

introducing rationality into political affairs. Whereas speech was ephemeral, they argued, a printed account lent itself to rereading and careful consideration. By means of rhetorical devices, orators could persuade their audiences to perform ill-considered acts. Legislators were less likely to be “carried away” by a treatise than by a speaker and were more likely to think calmly and carefully before taking action.

The same “distancing” effect of print that the French *philosophes* viewed as beneficial, others found objectionable. The Romantic movement of the early nineteenth century entailed a reaction against the sort of abstract thinking that had characterized revolutionary efforts to redesign the complex social structures of France under the old regime (the period before the 1789 Revolution) in accordance with a single blueprint. Political romanticism took the form of lamenting the way “the age of chivalry” had succumbed to that of “economists and calculators” (Burke 1790). Oral traditions, supposedly uncontaminated by print, were valued for preserving the true spirit of a given “folk” or people. Readers were urged by Romantic poets such as Wordsworth to abandon book learning: “close up those barren leaves!” Objections to the purported distancing effects of print persisted among critics and media analysts in the twentieth century. “Through the habit of using print and paper,” wrote Lewis Mumford (1934, 136–137) “thought lost something of its flowing organic character and became abstract, categorical, stereotyped, content with purely verbal formulations and solutions.” Marshall McLuhan (1962, 36–37) took a similar position by in his depiction of “Typographic Man.”

Both the proponents and opponents of the ostensibly impersonal, abstract character of print tended to overlook its coexistence with a human presence and a human voice. One thinks immediately of parents reading to children. But any text that appears in print lends itself to being read aloud. During the early modern era, printed broadsides and news reports were especially likely to have been transmitted by word of mouth to listeners gathered around a few literate townsmen. Even now, public readings or lectures are delivered to hearing publics by the authors

of printed bestsellers. (During recent decades, of course, print and voice have come together in the form of “audiobooks.”)

Print culture did not supersede oral culture but did have an effect upon it. Printed ballads decorated the walls of rural cottages. As was true of handwriting, the speech arts, far from languishing, flourished in a more regulated form. Instruction in elocution and in holding debates figured among the many “how-to” books that printers kept in stock. There were exceptional preachers (such as the Marian exiles or the Huguenot refugees) who, when deprived of their pulpits and sent into exile, turned to printing as their only recourse. But most preachers (like Savonarola and Luther) made full use of both pulpit and press.

Other considerations cast doubt on the “distancing effect” of print. Whatever the effects of printed cartoons and caricatures, they cannot be described as distancing. Similarly the figure of a distant ruler became less distant when printed (or photographed) portraits could be cut out of newspapers and enshrined in peasant huts (as was done in Czarist Russia.) Even with regard to “bare” texts, a skillful writer (whether distant or dead) could (and still can) move unknown readers “to tears” or incite them to take action. The presumably “impersonal” quality of newsprint, not the rabble-rousing on the soapbox, got credit for generating hysteria and war fever by American opponents of the Spanish–American War (1898) and British opponents of the Second Boer War (1899–1902).

Industrialization and Digitization

The basic features of Western print culture remained more or less the same after the industrialization of paper-making and printing processes in the early nineteenth century. Subsequent technological innovations, which led to the eventual replacement of “hot type” (set type) by cold (computerized offset printing) in the twentieth century only helped to increase output and to exacerbate concern about overload.

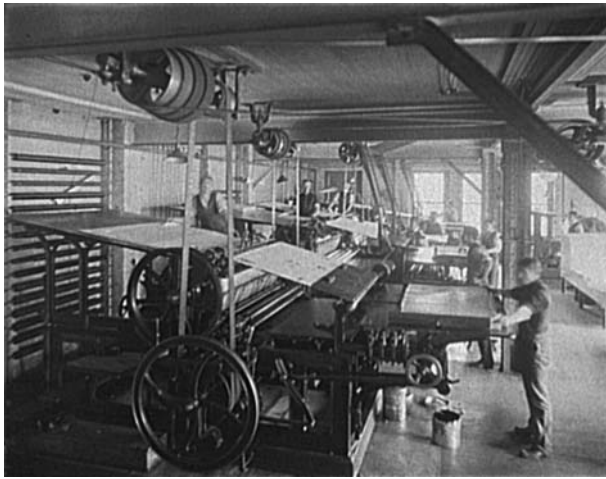
The most noteworthy nineteenth-century development was the increasingly important role played by

the newspaper press. The two key dates are 1814, when the London *Times* was turned off an iron rotary press powered by steam, and 1836, when Emile Girardin inaugurated *La Presse*. (This paper doubled its circulation and halved its costs, compared to previous Paris newspapers, and gave the French term “La presse” its special journalistic significance.)

Especially after the advent of wire services that made use of the telegraph, the daily delivery of newspapers would restructure the way readers experienced the flow of time. According to the scholar Benedict Anderson (1999), the reception of the same news at more or less the same time every day gave rise to a sense of collective participation in an unfolding national narrative that had no counterpart in earlier times.

By the 1830s, the British newspaper press was already being described as a “fourth estate” of the realm and was being assigned great influence over the public mind. Such an idea appealed to press barons and editors. “Books have had their day. Theatres have had their day. Religion has had its day. Nothing prevents the newspaper from being made the greatest organ of social life,” announced the U.S. publisher James Gordon Bennett in 1835 (Mott 1940, 232–233). What pleased newspaper editors was a matter of concern to others who worried that the popularity of the newspaper came at the expense of less ephemeral reading matter. The British philosopher, economist and moral theorist, John Stuart Mill (1806–1873) was concerned that people were no longer taking their opinions from books. “Their thinking is done for them by men much like themselves through the newspapers” (*On Liberty*, 1859, 66). After the century’s end, the historian Oswald Spengler would assert that “the newspaper had completely expelled the book from the mental life of the people.” As had Thomas Carlyle and Louis Blanc, Spengler believed that the age of the book had ended. It was “flanked on either hand by that of the sermon and that of the newspaper” (Spengler 1928, II, 461, 463).

In twentieth-century America, however, the age of the sermon was given a new lease on life thanks to the



Press at the Richmond & Backus Company (now the Detroit Publishing Company), Detroit, Michigan, circa 1902.

advent of the so-called electronic church. Electronic media, such as radio, film, and television, represented what the historian Walter Ong (1971, 285, 296) called a “secondary orality.” Despite expectations that the new media would drive out the old, the so-called paperback revolution of the 1950s and 1960s led to increased book sales. Moreover, filmed and televised versions of popular novels by Charles Dickens, Jane Austen, and others, far from outmoding printed copies, spurred the issue of new editions. So did celebrity recommendations on television.

With the advent of the digital era, the movement of texts onto screens has persuaded many observers that the end is finally at hand. Enthusiasts dismiss “dead-tree editions” as hopelessly out of date, and book-lovers write elegies to Gutenberg (Birkerts 1994). Oddly enough, in view of nineteenth-century predictions, the book seems to be less endangered by online publication than is the newspaper. The machinery and transport systems required to get daily newspapers into print and at the doorsteps of subscribers are costly and cumbersome compared to the swift and easy delivery of texts onto screens. But although online publication does pose a threat to many daily papers and is already reducing advertising revenues, it continues to facilitate the browsing and the purchasing of printed books.

The virtual bookstores that display titles on screens do so not to encourage further recourse to computers but rather to facilitate the sales of real books shelved

in brick-and-mortar structures. Furthermore, thanks to the photocopiers that are placed in libraries and shops, and the printers that accompany most home computers, texts are being replicated at a rate that defies calculation. The output of the printed word in this new age of cold type and mixed media has at least one thing in common with the output of the wooden handpress. Not a scarcity of texts but an overabundance still seems to be a chief cause for concern.

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See also Communication Media; Dictionaries and Encyclopedias; Libraries; Mass Media; Paper

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Progress

Progress (Latin: *progressus*) originally meant moving across country to a chosen destination. Progress toward individual betterment was a derivative meaning that entered English with John Bunyan's *Pilgrim's Progress* (1678). The idea that society as a whole might progress was slower to emerge, taking shape during the Industrial Revolution. Technological "progress" has, of course, exhibited destructive capabilities that prompt the question: change is everywhere, but is it really for the better?

Ever since 1492, when Europeans first began to sail across the oceans, advances of geographical and mathematical knowledge accumulated rapidly. Scientific progress became obvious by 1687, when Isaac Newton published mathematically formulated laws of motion, making eclipses as well as more ordinary movements of sun, moon, planets—and even cannonballs—predictable. Writers like the French scientist, Bernard de Fontenelle (1657–1757) concluded that progress of knowledge was real and might be expected to continue indefinitely into the future, but unchanging laws of nature meant that human society as a whole would remain much as before.

As long as most people lived just about the same way their parents and grandparents had done, any other opinion would have seemed absurd. But beginning about 1750 a cluster of changes began in Great Britain and western Europe that historians later called the Industrial Revolution. The central feature of that revolution was expanding the output of useful goods by using inanimate forms of power—first falling water, then coal and steam, and then electricity—to

drive large, often complicated machines. As a flood of useful things began to come from such machines, human lives in western Europe began to change unmistakably, and sometimes for the better, as cheaper manufactured goods became available.

Engines of Change

But at first the biggest improvement for most people was not industrial at all. Rather, food supplies increased enormously in Europe due to the rapid spread of potato cultivation after 1763, when all the principal governments of the continent set out to imitate the Prussians who, fifteen years before, had pioneered official efforts to persuade peasants to plant their fallow fields with potatoes. Potatoes meant more work, since they had to be hoed in summer to remove weeds. But as long as enough hands could be found for that task, potatoes multiplied the amount of food European fields could produce without diminishing the grain harvest in the slightest. This, together with use of turnips and other fodder crops as a parallel alternative to fallowing, radically diminished age-old risks of famine and provoked two centuries of population growth for humans and for their domesticated animals. That in turn assured a supply of people, horses and cattle for intensified cultivation in the European countryside, and soon provoked a surge of migrants looking for wage work in burgeoning industrial towns.

Economic expansion thus became self-sustaining; and as new styles of farming and new forms of industry spread, the daily experience of almost everyone in western Europe began to change in obvious ways. These novelties soon began to affect the entire world



This Maoist Chinese proverb says, "Greater, faster, better, more economical."

as well. Not all changes were for the better. Living conditions in crowded industrial cities were often horrible, and alternating patterns of boom and bust meant insecurity for all and inflicted severe suffering on unemployed wage earners. But new possibilities and cheaper goods were just as real. Think, for example, of what it meant for ordinary persons—especially those with small babies to swaddle and keep more or less clean—when, as the utopian socialist Robert Owen tells us in his autobiography (*The Life of Robert Owen Written by Himself*, 1920), in 1858 the cost of cotton cloth in England had shrunk to one seventieth of what it had been sixty years before when he started work as a teenager. During that same life span, steam railways, introduced in 1825, drastically cheapened and speeded up overland transport for goods and people; and after 1837 electric telegraphs allowed instant communication, at first only for a few, later for nearly anyone with an urgent message to send.

As significant novelties multiplied, it became obvious that human lives and the whole structure of society was changing as never before. Ever since a cascade of new technologies, new products and new experiences has continued, and even accelerated, spreading from an initial focus in Great Britain and adjacent parts of Europe quite literally around the Earth.

As always, new possibilities brought new risks and damaged or destroyed old ways of life. Most of the time, most people welcomed enlarged possibilities and liked to have access to cheaper machine-made goods. Yet costs were real too. Everywhere artisans found they could not compete with machine-made products; and old-fashioned agrarian empires found that they had to allow European goods, merchants,

missionaries and soldiers to intrude on their territories more or less at will. The flood of new products soon affected even the most remote hunters and foragers whose ways of life were upset by encounters with such items as iron tools and, not least, handguns.

But looked at from the center of disturbance, the rapid growth of wealth, population and political power that Britain, France, Germany, and the United States all experienced between 1800 and 1914 seemed a thoroughly good thing to almost everyone. Accordingly, the idea that human society was destined to progress in desirable directions soon took hold among these peoples. An early champion of that idea was a French nobleman, the Marquis de Condorcet (1743–1794), who wrote *Sketch for an Historical Picture of the Progress of the Human Mind* in the year of his death. His confidence in human progress toward perfection remains surprising, considering the fact that he was in prison and about to have his head cut off by the French revolutionary government when he wrote his sketch.

In the next century, as desirable novelties multiplied, the idea of progress took firm hold among Europeans. In Germany, the philosopher Georg Wilhelm Friedrich Hegel (1770–1831) made progress a universal principle of reality, moving from thesis to antithesis and then to synthesis, which immediately became a new thesis to keep the process going. Karl Marx (1818–1883) claimed to have stood Hegel on his head by proving that class struggle toward equality and freedom under Communism was the path of the future. Before that, in France another nobleman, Count Henri de Saint Simon (1760–1825), founded a different socialist movement aimed at hastening progress towards a similarly free and equal future. One of his younger associates, Auguste Comte (1798–1857), founded what became the academic discipline of sociology with parallel aims. Meanwhile in England the philosopher and economist, John Stuart Mill (1806–1873), and the historian Henry Thomas Buckle (1821–1862) explored a more open-ended liberal version of progress in their articles and books.



Skyscrapers spring up in Tianjin, China—a sure sign of progress for this former port city, many in China believe, where reminders of foreign occupation during the Second Opium War (1856–1860) and after are still evident in the architecture of churches and villas built in that era. Philip Baguet Collection.

In 1851, the reality of material progress was spectacularly demonstrated when Prince Albert, Queen Victoria's husband, organized a very successful Great Exhibition in the Crystal Palace, London. Beneath a specially constructed iron and glass structure, exhibitors from far and wide displayed a vast array of new machines and products for public admiration and instruction. Thereafter, similar world's fairs became quadrennial events, achieving a new peak of success in 1893, when Chicago hosted the World's Columbian Exposition. That fair celebrated four hundred years of progress since Columbus's discovery of America, and met with altogether unusual success. A still new trans-continental railroad net made it possible for more than twenty-one million persons to attend the fair; and at night, when incandescent electric bulbs lit up plaster-covered temporary buildings, the dazzling

whiteness seemed like a preview of heaven to many of the fair's visitors. Progress never seemed so certain and so obvious, before or since.

The success of the Columbian Exposition depended partly, too, on the fact that the idea of progress had enlarged its scope and persuasiveness after 1867, when Charles Darwin published *The Origin of Species*. Darwin argued that plants and animals had evolved through geological time thanks to a process of natural selection; and in another book, *The Descent of Man* (1871), he specifically discussed human evolution from ape-like ancestors. This challenged the biblical story of creation head on and provoked intense and prolonged controversy. Accordingly, one of the innovative features of the Columbian Exposition was a World Parliament of Religions where spokesmen for each of the world's principal faiths had a chance to come before an American public,

Life can only be understood backwards; but it must be lived forwards. • Søren Kierkegaard (1813–1855)

looking for shared principles and in some instances, even exploring the plausibility of religious progress through time.

There had always been doubters who discounted the desirability of all the tumultuous changes that beset nineteenth-century societies; and in the course of the twentieth century, doubts about human progress multiplied. The long stalemate of trench warfare in World War I (1914–1918) made the military side of technological progress, of which their nineteenth-century predecessors had been so proud, seem anything but desirable to millions of European and American soldiers; and the postwar boom, followed by the Great Depression (1929–1938) and World War II (1939–1945) broadened and deepened that skepticism. Renewed economic growth after 1950 was counterbalanced by fears of sudden atomic annihilation and by uneasy awareness that rapid population growth in Africa and Asia was widening the gap between the rich and poor peoples of the Earth.

By the beginning of the twenty-first century, though nearly all the world's politicians still promised to accomplish all sorts of good things if elected to office, most writers and commentators on public affairs took a much gloomier view of the future. Emphatic rejection of the nineteenth-century faith in progress became general. That was partly because continuing improvements in human comfort and diet as experienced by people in the world's wealthiest countries, like air conditioning in summer, and fresh fruit and vegetables in supermarkets all year round, swiftly came to be taken for granted, while innumerable medical breakthroughs, like antibiotics and heart surgery, had the immediate effect of prolonging life and thereby multiplying the pains and debilities of old age.

Destructive capabilities of biological, chemical, and nuclear weapons also multiplied; while gaps between rich and poor, rivalries among ethnic and religious groups, and the decay of local communities seemed only to increase. All too obviously, change was everywhere, but was it really for the better? Did happiness increase with longer life and more things to own and look after? Or did accumulating material goods merely get in the way of leading a good life?

These are valid reproaches against rosy nineteenth-century predictions of moral and political progress. But material progress remains undeniable. No one can doubt that increasing knowledge and skills have enlarged human command of energy flows at a very rapid rate since 1750, and have done so more slowly throughout history. The resulting increase in human capabilities, both for good and for ill, is clearly cumulative, and constitutes a kind of progress that deserves to be recognized as such.

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See also Engines of History; Industrial Revolution; Modernity; Technology—Overview

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Protestantism

Protestantism, which thrives in numerous denominations and usually adapts to the cultures of the congregants to whom it has spread since the sixteenth century, uses the Bible as its authority and stresses the grace of God. Religious demographers estimate the number of Protestant Christians worldwide to increase from 370 million in the early twenty-first century to half a billion by 2025.

Protestantism represents a form of Christianity that spread in five hundred years from northwest Europe to every continent. This global version of the faith derives from a cluster of movements within Western or Catholic Christianity in the early sixteenth century and thrives in the form of thousands of independent church bodies. Rejecting the authority of the pope, Protestants almost universally profess that the Bible—that is, the Hebrew Scriptures and the New Testament—is the authoritative source and norm of their teaching. Through the centuries, Protestantism quite naturally took on the culture of whatever new environments its churches spread to. Thus Lutherans in Namibia differ in many respects from those in Norway, yet both stress the grace of God and are critical of any teaching that they associate with the historic Catholic teaching that insisted on human endeavors to impress and please God.

Global Protestantism Today

Early in the twenty-first century, religious demographers estimate that about 370 million people are Protestant. Often associated with Protestantism but insisting on its Catholic character is Anglicanism, the heritage of

the Church of England, which numbers 82 million adherents; a third group, informally labeled Independents, numbers 415 million. Taken together, after 2000 these non-Roman Catholic varieties of Christianity, all of which derived from the sixteenth-century Reformation, have over 800 million followers. (By comparison, there are an estimated 101 million Roman Catholics and 217 million Eastern Orthodox adherents.) Demographers estimate that by 2025 the Protestant numbers will grow from 370 million to almost half a billion, a sign that Protestantism is not confined to the period of early prosperity from the sixteenth through the nineteenth century, but faces a prosperous yet at the same time an ambiguous future. While these are necessarily imprecise numbers, the totals suggest the enormous historical importance of this movement.

The momentum of Protestantism, however, has dramatically shifted. While much of its base remains in northwest Europe, the point of its origin, the membership there is often nominal. In some Scandinavian nations, for instance, over 90 percent of the population will be listed as Protestant because most children are baptized by the Lutherans, yet church participation is very low. Meanwhile, in sub-Saharan Africa, where several thousand new members are added every twenty-four hours, Protestants, especially in forms called “Pentecostal” or “charismatic,” as they expand, are known for their vital and even exuberant patterns of worship and are among the chief deliverers of health care and works of mercy.

Protestant Origins in Western Europe

While Protestantism did not receive its name until 1529, historians of Protestantism characteristically

date its rise from sporadic pioneering reform movements in England under John Wycliffe (1320–1384), William Tyndale (1494?–1536), and others. They and their followers combined efforts to translate the Bible into English and then to use biblical teachings, as they interpreted them, to criticize the Catholic Church. The Czech reformer Jan Hus (1372–1415), a critic of Catholic practices who died for his faith, endeavored to break the hold of the hierarchy and to teach lay people to base their views of divine grace on the Bible.

While the English reformers and the Hussites were put out of the Catholic Church or put to death, many other reform movements which tested the Roman church of the day, denouncing it as legalistic, corrupt, and inefficient as a deliverer of the message of divine grace, remained within the Church. Typical among this group were humanists like Desiderius Erasmus (1467?–1536) of the Netherlands, a man who satirized the papacy and monasticism with a wit and savagery unmatched by most of his Protestant-leaning contemporaries. However, Erasmus and other humanists in the universities of England and throughout the Holy Roman Empire on the continent could not envision carrying their reform to the point of a break with the papacy.

Breaks that led to permanent breaches began to occur in the second decade of the sixteenth century. Most visible and best-remembered among them were the university-based reforms at Wittenberg in Saxony. A cluster of monks and professors led by Martin Luther (1483–1546) set out to attack the Church's modes of dealing with people who sought salvation and attempted to live a moral life. Luther and his followers saw the Papacy as repressive, self-centered, and corrupt, and declared their intent to recast Church teachings from within Catholicism. However, they became so upsetting to both the Church and the Holy Roman Empire that Rome took action—usually, as in the case of Luther, it excommunicated them as heretics. Many other critics left voluntarily.

The map of early Protestantism indicates that a great number and variety of sites developed quickly. In England, a controversy between the Pope and King Henry VIII led to a sundering of ties and the birth of the Anglican Church. In Switzerland, reformers such as Huldreich Zwingli (1484–1531) and John Calvin (1509–1564) complemented or competed with Luther and the Germans and with Scandinavian leaders, while more radical reformers spread through Switzerland and the Lowlands. By mid-century essential changes in allegiances had occurred and Protestantism had reached its early geographical limits. However, Mediterranean Catholics on the Iberian Peninsula, in France, and in the Italian states were unmoved, as were Eastern Europeans, whose Catholic churches abutted Orthodox churches in Russia, Poland, and Greece.

The Inner and Outer Expressions

The early Protestants, who acquired their name almost accidentally from the act of some princes who “protested” imperial and Catholic action at the Diet of Speyer in 1529, were more frequently referred to with a more congenial and positive term, *evangelical*. Although five centuries later that name appears to characterize only conservative Protestantism, in the beginning it simply implied that those who professed it were devoted to the *evangel*, the message of the New Testament gospels. They were not to be confined by Roman Catholic Church law and did not define themselves as legalistic followers of Jesus and the church. Instead, they professed to take the risk of governing the church and inspiring individual members' lives with the message of grace as mediated only by the Christian gospels and voiced in the acts of preaching and prayer.

The inner expression of Protestantism arose from the way some Christians gave expression to this evangel, how they worshiped and lived. The outer expression refers to the ways in which Protestants in various societies and cultures



related to governments and economic and social powers.

The Gospel and the Inner Life of Protestants

Once the hold of the papacy and the Catholic hierarchy was tested and broken, the people called Protestant set to work to give voice and form to personal and church life in ways that would distance them from Rome and yet keep them within the Christian tradition, a tradition that they were soon to claim as belonging more rightfully to them than to the members of what they considered a corrupt Catholic church. Many Protestant leaders, especially the Anglicans and the Lutherans, continued to think of themselves as representing a kind of Catholicism without a pope, and they affirmed all that they could from the life of the existing Church. Yet their criticism of its forms was often searching, radical, and even savage. In fact, for many, the pope became not a faulty follower of Christ but the Antichrist.

Although they were unwilling to be defined only negatively vis-à-vis the Roman hierarchy and church or canon law, Protestants had difficulty defining themselves positively. The genus had to include everyone from Anabaptists, ancestors to latter-day Mennonites

and radical Baptists, to church bodies that worshiped in very formal ways, including the use of incense and what radicals considered reintroducing the trappings that belonged in Rome, not in evangelicalism. The genus also had to include Protestants who supported the religious establishment, who did not sever the ties between religion and regime, separate “church and state,” or cease taxing the whole citizenry for church support. At the same time, in the same cluster, were Protestants—again, the Anabaptists and Baptists led the way—who wanted religious life in their churches to be independent of political organizations and leadership; they advocated very simple forms of worship that demonstrated their distance from Rome.

Authority and Grace

Despite these diversities and the outlooks and actions of many charismatic reformers who started independent movements, some broadly defined motifs can be used to characterize most Protestants. First, most of them did and still do give highest priority to the canonical scriptures, which they share with Catholics. Most Protestants, however, want to downgrade Catholic affirmations of church tradition and papal interpretations of the Bible. They may affirm that the Christian faith had been expressed through the ages



wherever Catholics were baptized or where they observed the Lord's Supper ("the Mass") as a second sacrament, where the gospel of Jesus Christ was read, and where it served as the basis of preaching and teaching to summon people to faith and the living of a godly life. The Protestant rejection of so much tradition and its refusal to turn to other authority, led Protestants to put a major, sometimes unique, stress on divine revelation in Scripture (on the interpretation of which the various groups disagreed with each other). One frequent statement of this motif was the authority of *sola scriptura* (scripture alone).

Second, while Protestants differed from each other in interpreting the scripture, most found in the writings of Paul and classic teachers such as Augustine an accent on divine grace. In this case, the distinctive elements were *sola gratia* (grace alone) and *sola fide* (faith alone)—people were saved from sin and from eternal punishment by the graceful and generous action of God, especially through the death and resurrection of Jesus Christ, in whom they had faith. Catholics, of course, also acknowledged divine initiatives, but in the eyes of Protestants their emphasis on the need to please God through personal merit or works made them subject to Rome, which stipulated exactly how they should acquire merits and which works were beneficial to those who would be saved.

Continuing to baptize and to celebrate the Lord's Supper or Holy Communion, the sacred meal that memorialized Jesus and, most said, was a means of imparting grace among believers, the majority of evangelical Protestants simplified worship. Preaching, singing hymns, and saying prayers became the main features.

Authority and Public Life

Protestants, whose early breakthroughs were often connected with particular nationalist or territorial movements and strivings by political rulers, knew that they had to find ways to promote civil life and instill obedience among populations. Few were ready to go so far as to repudiate existing earthly authority, be it that of emperors, monarchs, princes, or

magistrates. Indeed, many of the latter converted to Protestantism and gave protective cover to reformers who were allied with them and who promoted their cause. By 1555 at the Peace of Augsburg, all but the radical reformist Protestant leaders had signed on to a concept that they took for granted: *cuius regio, eius religio* (whoever determined the government of a region stipulated what religion should be favored or have a monopoly).

That halfway stage of reform led many Protestant leaders to adopt a servile attitude to their government, and many clergy became lower-grade civil servants. Dependent upon the government for funds, they were often uncritical of rulers, and Protestant radicals charged that they were replacing the tyranny of the pope with the tyranny of princes. Yet from the beginning, early Protestant witnesses to the value of conscience and of relative autonomy in respect to spiritual choices produced a widespread restlessness that by the middle of the seventeenth century had led to edicts and settlements of toleration in England and elsewhere.

A century later, these protesting impulses and liberated consciences served many Protestants as they teamed up with political thinkers, revolutionaries, and statesmen, to draw a line of distinction between the sphere of religion and the civil authorities—to use the terms of American constitutionalist James Madison—or the separation of church and state, Thomas Jefferson's term. Such distinguishing and separation became marks of Protestant life in the United States after 1787, and were important instruments in determining Protestant church life when its missionaries founded churches in Asia and Africa, where no form of Christianity became more than a small minority presence.

Not all the external life of Protestant Christians had to do with government and politics. There was also an accent on personal ethics, based on the gospel in ideal circumstances, though many evangelical churches developed laws and nurtured legalistic ethics. As religion and regimes became more independent of each other, the ethic of "faith made active in love" inspired Protestants during and after the

eighteenth century to invent many forms of voluntary associational life. Their churches formed groups where leaders and followers could promote charity and reform. The legacy of these inventions in the late eighteenth century, especially in Anglo-America, is evident wherever the Protestants took their efforts to convert people, even on continents where Protestants were never more than a minority presence.

Protestant Phases of Development

The first generations of Protestantism were what sociologist Emile Durkheim called “effervescences,” bubblings-up, hard-to-discipline eruptions, usually marked by the language and life of an outstanding leader. By the second generation such movements, in order to sustain themselves and give an accounting of their ways, saw the rise of definers. Thus in the Church of England, Richard Hooker (1554–1600) brought legal expertise to the drafting of the *Laws of Ecclesiastical Polity*. John Calvin, arriving on the scene slightly later on the scene of reform than Luther or Zwingli, was himself a principled systematic theologian and defined the Calvinist or Reformed wing of Protestantism with his *Institutes of the Christian Religion*. Martin Luther, a man of contradictions who favored paradoxical language, gave place to university systematicians in the seventeenth century, giants of dogmatic expression like Johann Gerhard. The impulse among the second-generation leaders was to reintroduce more legalistic norms and in some cases to adopt the scholastic approach to faith which their predecessors had criticized. This meant that they offered philosophical defenses of the verbal inspiration of the Bible or reasoned apologies for the existence of God and the workings of grace.

Such defining legalism and scholasticism, especially where Protestants were linked with and dependent upon civil authorities, could follow a predictable means toward an unsurprising end. That is, they often appeared to degenerate into desiccated or fossilized forms, inert, incapable of keeping the evangelical spark alive. Such kinds of settlement bred restlessness. Thus, in a third long generation or short century of

Protestant life, inspired leaders and movements from within devoted themselves anew to the inner life of the individual prayerful soul, the piety of believers, and the reform of worship. These eighteenth and early nineteenth century movements, concurrently in the *reveil* in French-speaking lands, the *Glaubenserweckung* among German speakers, and the “awakening,” “revivalist” or “pietist” movements in the British Isles and the American colonies or young United States, brought forth fresh accents.

Now the concentration was on the personal experience of God acting through the Holy Spirit to lead individuals from indifference or apathy to fervent faith. The converts, once “awakened” or “revived,” were to turn to their reprobate or spiritually lifeless and wicked neighbors and convert them. Then they were to form small groups, often within the established church, as was the case with Jonathan Edwards or George Whitefield, the towering figures in colonial America at mid-century, or with John Wesley, who eventually moved out of the Church of England to form Methodism. In general, these awakened movements matched and fed the democratic spirit of the times and empowered lay people to engage in works of reform and missionary endeavor.

In the nineteenth century, the age of colonialism, such awakened Protestants, moved by the sense that they were advancing the millennium (for Christ’s return to Earth) or promoting human progress through conversion and reform, boarded ships from the British Isles, western European nations, and the United States, and took their gospel to the Middle East, Asia, and the Pacific Island world, sometimes but with less success in Catholic Latin America, and finally to Africa. Most of these evangelical missionary movements date from the 1790s in England and after the 1810s in the United States.

Gifted college graduates, ambitious entrepreneurs, and sacrifice-minded men and women accompanied their message of salvation with efforts to educate and then provide physical benefits for the populations they reached. It is easy to connect their moves with colonial and imperial impulses, but without the entrepreneurs and conquerors they could probably

Wherever the battle rages, there the loyalty of the soldier is proved and to be steady on all the battlefield besides is mere flight and disgrace if he flinches at that one point. • **Martin Luther (1483–1546)**

not have moved as efficiently as they did. Yet they paid a high price, because anti-colonialism eventually made it necessary for them to distance themselves from many of the Euro-American missionary endeavors—in sub-Saharan Africa, for example. They developed what they thought of as autochthonous Protestant churches—that is, churches rooted in the cultural soil of their new country.

At the beginning of the twentieth century, a new expression of Protestantism called Pentecostalism broke forth. Pentecostals claimed that their charismatic form of Christianity was as old as the biblical prophets and the New Testament. They believed they were reviving gifts of early Christianity, which had long fallen into disuse. They “spoke in tongues,” for example; they prophesied and claimed miraculous healings. Pentecostalism quickly became a dominant form among Protestant late-arrivals in Latin America and sub-Saharan Africa. Some demographers claimed that over 570 million Protestants, Anglicans, Independents, and sometimes even Roman Catholics were Pentecostal. Having become the dominant form in the emerging world, Pentecostalism seemed ready to become the most prominent form of global Protestantism as the European churches declined in numbers and significance.

One Millennium Ends, Another Begins

Through centuries, Protestantism developed many schools of theology, not least impressively in the twentieth century, long after many cultural observers had expected such fresh flowerings in a secular world. These schools reflected the dominant philosophies of the day, as their ancestral versions had done during periods characterized, for example, by idealism and the Enlightenment. In the same way existentialism, language analysis, phenomenology, and other philosophies inspired Protestant thinkers, usually in university settings, to rework biblical and historic evangelical motifs to meet new challenges. These included coming to terms with whatever industrialization, urbanism, globalization, and humanistic

crises brought to people’s lives. Far from fading, as it seemed to be doing in its own heartland, Protestantism in the early twenty-first century represents a confusing, explosive, adaptive force in secular and religiously pluralistic settings. Hard-line reactive Protestant fundamentalists resist adaptations, but their leaders manifest an ability to engage in invention on the ever-changing front of Protestantism.

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See also Luther, Martin; Missionaries; Pentecostalism; Religious Fundamentalism

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Qin Shi Huangdi

(c. 259–210 BCE)

CHINESE EMPEROR AND FOUNDER OF THE QIN DYNASTY

Qin Shi Huangdi, founder of the short-lived Qin dynasty (221–206 BCE), unified China after years of internal strife and warfare. Although he was a tyrannical leader, he established standards of currency, weights, measures, and even the width of roads and cart axels. Under his rule the written script was purged of regional variations, easing communications and reinforcing cultural unity, at least for the literate elite.

The unifier of China after several centuries of internecine warfare, Qin Shi Huangdi established the principle of centralized rule, with court-appointed officials governing throughout his realm. But his dynasty, for which he created the new title “Huangdi” (literally, First Supreme Sovereign), or emperor, barely outlived its founder, collapsing under the onslaught of popular rebellions just four years after his death.

In traditional Chinese historiography, Qin Shi Huangdi was remembered as an extreme tyrant whose cruelty and megalomania caused the rapid collapse of the dynasty for which he had designated himself founding (shi) emperor in what was to be an unending line of descent. The popular suffering accompanying the forcible unification of China was probably real enough, but the adoption of Confucianism by the succeeding Han dynasty (206 BCE–220 CE) as the official state philosophy probably was responsible for Qin Shi Huangdi’s becoming a lasting symbol of oppression. Late in his reign Qin Shi Huangdi had tried to eradicate dissenting opinions by banning all traditions and schools of thought except the Legalist teachings that had been adopted by his home state of Qin a century earlier. This proscription hit Confucian

scholars hardest, and it was for his great crime of allegedly burning the books and burying the scholars (alive, of course) that the First Emperor was chiefly remembered in later China’s Confucianized historical memory.

With the rise of modern Chinese nationalism, Qin Shi Huangdi has acquired a more positive image as a political unifier and nation builder. Mao Zedong (1893–1976) went further, seeing him as the kind of great leader who pushed the wheel of history forward by ruthlessly exterminating traditional or reactionary forces. In Mao’s last years, during the later stages of the Cultural Revolution (1966–1976), there was a nationwide campaign to glorify Qin Shi Huangdi as historically progressive and to denigrate Confucius as reactionary. That campaign ended, however, with the death of Mao. Qin Shi Huangdi remains a rather ambiguous symbol in modern China, seen on the one hand as a great national unifier and on the other as a tyrant and despot.

Appraising his real achievements is not easy. Significantly, critics and admirers in China focus more on his role as a political centralizer than as a military conqueror, although his armies crushed all the remaining independent Chinese states and pushed China’s boundaries to present-day Vietnam in the south and beyond the present Great Wall (which his laborers began to build by connecting and extending existing fortifications) in the north. Important in his role as a centralizer was the junxian system with which he administered his vast empire. Formerly hereditary fiefdoms held by not-always-obedient retainers were replaced by commanderies and districts administered by officials serving at the emperor’s pleasure. While execrating his name and policies,



The soldiers of Qin Shi Huangdi's terracotta army had hollow torsos, solid legs for stability, and molded heads with hand-carved, distinctive facial features to reflect the multicultural backgrounds of the emperor's troops. Photo by Yixuan Shuke.

the Han dynasty that followed basically accepted this system, which became the norm for later Chinese imperial government.

The Han also continued many of Qin Shi Huangdi's other unification policies, such as standardization of currency, weights, measures, and even the width of roads and cart axels. In cultural matters, the Qin suppression of various philosophies and traditions was dropped, although the Han's designation of Confucianism as the state orthodoxy also dampened the vigorous philosophical disputations that had characterized the latter years of the pre-Qin Zhou period (1045–256 BCE). One other Qin standardization was of enormous historical significance: the written script was purged of regional variations, thus facilitating communications and reinforcing cultural unity, at least for the literate elite.

The most notable discontinuity from Qin to Han was the repudiation of the School of Law (*fajia*) that Qin Shi Huangdi had made the sole philosophy, or political doctrine, of his empire. Usually called Legalism in the West, the School of Law demanded universal law codes, enforced by harsh punishments, which would abolish all the old feudal distinctions

of rank and privilege, thus leveling society under the all-powerful ruler. As explained by its most articulate spokesman, the political philosopher Han Feizi (d. 233 BCE), this would not only maximize power for the state and the ruler, but also benefit the common people by ensuring peace and good order. There was little attention paid to law as a restraint on the absolute power of the ruler.

Upon the death of Qin Shi Huangdi, palace intrigues led to the accession of a younger son lacking his father's shrewdness and prodigious capacity for work. The strictly centralized system, in fact, required an exceptional ruler, and lacking traditional legitimacy or popular support, it rapidly collapsed. In the West, the most lasting legacy of the short-lived Qin dynasty is its name: Qin—which in Wade-Giles romanization is Ch'in and thus pronounced in English "chin"—is the origin of the English name China.

In China, lurid stories about the rise and fall of Qin Shi Huangdi and his empire continue to captivate the popular imagination, as shown in the 2001 movie (released in North America with English subtitles) *The Emperor and the Assassin*, directed by Chen Kaige. Much of this lore is based on the account

The reason why China suffers bitterly from endless wars is because of the existence of feudal lords and kings. • **Qin Shi Huangdi (c. 259–210 BCE)**

by the official Han dynasty historian, Sima Qian (c. 145–c. 86 BCE), which was not only written over a century later but also reflects pro-Han, pro-Confucian sentiments. The historical Qin Shi Huangdi may or may not have been as cruel, paranoid, and arrogant as he is depicted. But one indisputable piece of physical evidence attests to the grandiosity of his ambitions. In the 1970s construction workers near the modern city of Xi'an discovered enormous underground chambers with thousands of life-sized statues of soldiers and horses. This terracotta army, left to guard the First Emperor forever, has become a national monument and first-class tourist attraction. The emperor waits nearby, his tomb encased in an artificial mountain. When it is excavated, Qin Shi Huangdi will probably achieve even more historical celebrity—or notoriety.

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See also China

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Quinine

Quinine, the great antimalarial medicine, was the first disease-specific treatment in the Western medical arsenal. Unlike earlier medicines that only masked or relieved the symptoms, quinine was capable of bringing about either a temporary or permanent cure, depending on the type of malarial infection.

Quinine, the first Western medicine to be targeted at a specific disease, was widely employed in western Europe and North America for generations before the germ theory of disease. In the nineteenth century it was the principal line of defense against the major public health threat of malaria in the United States and parts of Europe.

In 1820 the French chemists Pierre-Joseph Pelletier and Jean-Bienaimé Caventou isolated two alkaloids from the bark of the cinchona tree. They named the white crystal *quinine* and the brown liquid *cinchonine*. These and other successful laboratory experiments by Pelletier and Caventou mark the beginning of modern alkaloidal chemistry.

In the course of the 1820s, chemical manufacturing firms sprang up in the U.S., the Netherlands, Great Britain, France, and Prussia to produce quinine and cinchonine. Cinchonine became known as the “poor man’s quinine”; it sold at a fraction of the price of quinine and became part of patent medicine formulations. Quinine gained an international reputation as the effective cure for malaria, and the high demand for it yielded robust profits. Many of today’s major international pharmaceutical corporations have roots in the quinine industry.

Most early consumers were in the U.S. and in western Europe, where malaria was one of the principal

public health problems of the nineteenth century. Through the course of European colonial expansion and experience with the disease environment on the African coasts, malaria eventually came to be understood as a global disease. Quinine was extremely portable, and from the middle of the nineteenth century onward it was regularly taken as a prophylaxis, allowing European explorers, missionaries, and troops to carry out their activities in areas where malaria was endemic. In India, the British learned to take their quinine dissolved in water, with gin added, thereby creating the gin and tonic. Some authors have assigned a primary significance to the role of quinine in the European conquest of the tropics, but recent scholarship suggests that a variety of other public health practices, such as mosquito screening and latrine digging, were at least as important in reducing the rates of sickness and death in the tropics.

Beginning in the early twentieth century, quinine was employed in mass public health campaigns, known as quininization, designed to reduce drastically the toll of malaria through universal chemical therapy. This policy was first adopted in Italy, with considerable success. But the expense of the policy, in combination with the fact that quinine could not prevent relapses of all forms of malaria, led to a return to individual therapy and a focus on environmental interventions to destroy the anopheles mosquito, which carries malaria, and its habitat.

Quinine proved its importance to the military during the early twentieth century. Quinine could be crucial to keeping troops fit to fight, and reducing the enemy’s access to the drug could produce military victory. During World War I, the Allied powers cut off the supply of quinine to the Germans and thereby

Quinine was one of the medicinal poisons; one of the strongest of these. Four grammes could make one deaf and giddy and short-winded; it acted like atropine on the visual organs...it was as intoxicating as alcohol; workers in quinine factories had inflamed eyes and swollen lips and suffered from affections of the skin. • **Thomas Mann (1875–1955), *The Magic Mountain***



This illustration of a bottle of quinine tincture, and the plant it derives from, originally graced the back of cigarette box. New York Public Library.

produced great suffering along the Eastern Front. The Germans undertook an emergency scientific research program to find a synthetic substitute, but did not succeed until the 1920s.

Following World War I, the League of Nations Malaria Commission attempted to survey the global status of malarial infections and to estimate the amount of quinine that would be necessary to intervene effectively. The estimated quantity was in excess of the world's supply, and the initiative to treat the world's populations chemotherapeutically was dropped. This early survey and the problems encountered with mass chemotherapy, however, anticipated both the creation of the World Health Organization and the later problems of the global HIV pandemic.

The world's market supply of quinine during the 1920s and 1930s came to be controlled by an Amsterdam-based cartel known as the Kina Bureau, which succeeded in assuring a reliable supply of quinine at prices that allowed growers to avoid excessive competition. This system was shattered by the Japanese conquest in 1942 of the Dutch East Indies, where extensive cinchona cultivation was practiced. The Japanese captured the cinchona plantations that had produced most of the raw material for quinine production. Allied casualties mounted rapidly in the

Pacific theatre of the war, and a major scientific research program was launched in the U.S. to find a synthetic substitute.

Since World War II, synthetic antimalarial drugs have largely replaced quinine. Today, quinine remains a highly effective antimalarial drug, and in cases of synthetic drug-resistant malaria, it is the drug of last resort.

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See also Cinchona; Malaria

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Race and Racism

Racism can be described as an extreme form of ethnocentrism (i.e., seeing one's language, customs, ways of thinking, and material culture as preferable). But instead of using cultural factors to mark differences that can be overcome if some are willing and able to adopt beliefs and customs of others, racial boundaries depend on perceptions of *physical* distinctions between human body types, which are seen to be expressions of innate, *biological* divergence.

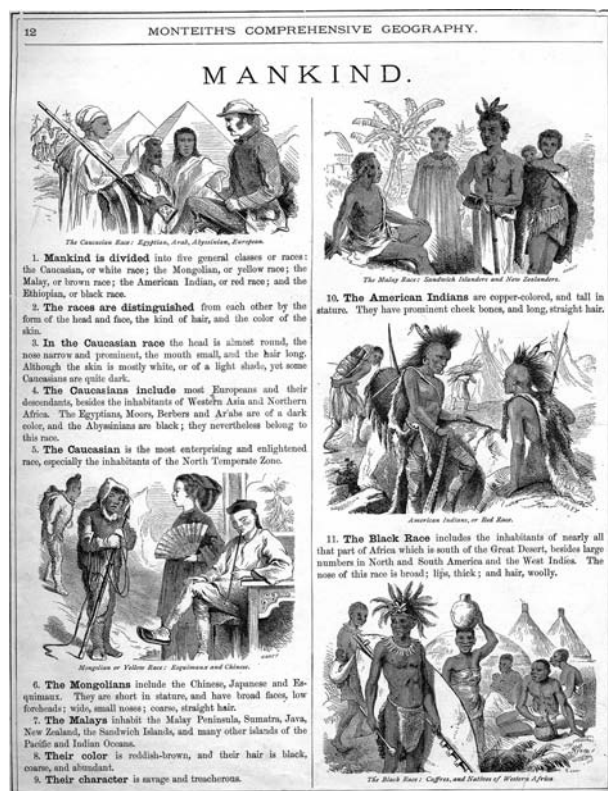
A number of historians have argued that racial divisions and racist attitudes were already present in societies such as Greece and Vedic India in ancient times. In any meaningful usage, however, these ways of conceptualizing and responding to differences between human groups originated in an age of global expansion and cross-cultural interaction in the fifteenth and sixteenth centuries CE. This era saw the first sustained contacts between the Eastern and Western hemispheres as well as greatly intensified regional and intracontinental interactions among societies across the world. Like all of the other peoples involved in cross-cultural contacts in these centuries, the Europeans who traveled overseas to trade, explore, and proselytize were highly ethnocentric, that is inclined to see their languages, customs, ways of thinking, and material culture as preferable—if not superior—to those of the diverse societies they encountered in Africa, Asia, and the Americas. This very human propensity to emphasize *cultural* differences was much in evidence in ancient times among peoples such as the Greeks, who distinguished themselves from the “barbarians” because the latter could not speak Greek, or the Chinese, who viewed such

nomadic, pastoral peoples as the Turks and Mongols as uncouth and inferior because they lived in regions with too little rainfall to support the sedentary agriculture and sophisticated urban lifestyles that the Chinese deemed essential for civilization.

Racism can be seen as an extreme form of this ethnocentrism, which for a number of reasons explored below developed for the first time in the early modern era of expansion, and—at least in this time period—only among peoples of European descent. Rather than cultural markers of difference, which are malleable and can be overcome if some groups are willing and able to adopt the beliefs and customs of others, racial boundaries are based on perceptions of somatic or *physical* distinctions between human body types, which are seen to be expressions of innate, *biological* divergence. Although the physical attributes stressed by those who construct or adhere to beliefs in the racial distinctiveness of human groups have varied considerably by time period and the society in which they are nurtured, racist thinking has almost always encompassed convictions that some peoples are inherently superior or inferior to others and presumed—at least implicitly—that this state of inequality arises from innate and immutable differences in intelligence.

The Genesis of Race and Racism

Whether based on a sense of religious or material superiority, European ethnocentrism in the fifteenth and sixteenth centuries CE was blinkered and self-congratulatory, but it was usually not racist in any meaningful sense of the term. Until the late seventeenth century, humanity was seldom divided into



This page from an 1878 geography text sets forth a classification of races that remained popular well into the twentieth century.

clearly demarcated categories by European travelers or writers, and when attempts were made to distinguish human types, the criteria were invariably vague and inconsistent. Physical differences between peoples encountered overseas were, of course, frequently described in considerable detail. But even in reports of contacts between the fairest-skinned northern Europeans and the darkest peoples of the rain forest regions of Africa or coastal South Asia, differences in skin pigmentation or hair texture are often noted in a matter-of-fact way. Contrary to the arguments of a number of Western scholars, which themselves may be expressive of ethnocentric preferences, European travelers did not necessarily admire light-skinned peoples more than “tawny” or “black” ones. In fact, numerous explorers explicitly commented on the beauty or well-proportioned bodies of both males and females of peoples described as dark-skinned. For example, François Bernier, one of the most famous French travelers of the late seventeenth century, was one of the first writers to attempt to classify the different types of humans he had encountered in his peregrinations.

He had, however, very little to say about the basic human types that he proposed in a rather desultory way, and was a good deal more interested in ranking the peoples he had encountered according to which had the most beautiful women, which included at the top of his list relatively dark-skinned Egyptians and Africans. In a number of accounts by other Western observers, peoples described as tawny or black are ranked above their lighter-skinned neighbors in terms of their intelligence and the level of cultural development they have achieved. And few Europeans who traveled overseas made any attempt to link facial features or hair quality to more general assessments of a people’s aptitudes or intelligence. Like differences in culture, physical variations were usually linked to environmental influences rather than seen as innate products of reproduction and biological inheritance.

The Atlantic Plantation System, Slavery, and Racism

It is still not clear exactly when attitudes and responses that were genuinely racist first emerged. But decades of careful research on the Atlantic slave trade and slave societies throughout the Americas have thoroughly documented the connection between chattel slavery as it developed in the centuries of European expansion into the Atlantic world and the emergence of increasingly elaborate arguments for the inherent and immutable differences between peoples sold into bondage for the slave plantations of the New World and the Europeans who shipped them across the Atlantic and profited from their enforced servitude. Even though we cannot determine precisely when and why the belief in extreme differences between Europeans and Africans was first articulated, by the seventeenth century it was widely held by the Portuguese, Dutch, English, and other nationals deeply involved in the slave trade. And there can be little question that the socioeconomic conditions under which the Atlantic slave trade was conducted directly affected the widespread acceptance of arguments for the Africans’ innate, or racial, inferiority, and in some circles

One ever feels his twoness—an American, a Negro; two souls, two thoughts, two unreconciled strivings; two warring ideas in one dark body, whose dogged strength alone keeps it from being torn asunder. • W. E. B. Du Bois (1868–1963)

the conviction that they were a separate species from the rest of humankind.

Early, inchoate racist sentiments were to some degree elicited by extreme differences in skin color and other obvious (but not genetically significant) variations in physical appearance between both those who sold slaves and those actually reduced to slave status. But cultural differences were in most cases far more critical in shaping European attitudes toward different peoples and societies. These ranged from the Africans' alleged paganism—which was said to revolve around the “worship” of what the Europeans misguidedly lumped together as “fetishes”—to European disparagement of what they judged to be low levels of material development, based on everything from the coastal peoples' lack of impressive stone structures (including forts), large cities, powerful rulers, and strong states, to their indifference to semi- or complete nudity. These assessments were, of course, problematic in a number of ways. To a significant degree, for example, they were shaped by the fact that the slave traders concentrated their activities in coastal areas, where, due to environmental conditions and human choice, political power was in fact less centralized than in much of Europe, and building materials and modes of dress were well suited to hot and humid ecosystems rather than the colder temperate conditions in the lands from which the Europeans set forth. The few European explorers who traveled inland throughout the vast savanna lands of the Sudanic belt (the desert and semi-arid zone between the North African Maghrib and the rainforest regions of West Africa) before the nineteenth century encountered impressive cities—such as Jenne and Timbuktu (Tombouctou)—as well as states and armies often larger than those in Europe, extensive trading networks, monumental architecture, and Islam, a monotheistic religion that had emerged from the Judeo-Christian tradition, and thus—despite intense Christian-Muslim rivalry—one Europeans could relate to their own. Because so much of what the Europeans found in the interior of Africa matched their ethnocentric expectations regarding human achievement and worth, the African peoples of the

Sudanic zone were generally given more favorable treatment in Western writings. Until well into the nineteenth century, Europeans usually dissociated the peoples of the Sudanic zone from the racist strictures often directed against the peoples of the societies on the west and southwest coasts of the continent, where the slave trade was concentrated from the sixteenth through the nineteenth centuries.

Few of the European travelers, slave traders, merchants, or missionaries who became involved in ongoing cross-cultural exchanges with African coastal peoples had any real understanding of their complex, sophisticated social systems and religions or appreciation for their splendid art, music, and oral literature. In addition, most of the Africans whom Europeans came into contact with were either merchants engaged to varying degrees in the slave trade or groups and individuals who had the misfortune to be captured and marched to coastal entrepôts in bondage, where they would be sold to the Europeans and transported to plantation societies across the Atlantic. Not only were the enslaved understandably profoundly disoriented and in states of shock and despair, they had been suddenly and violently snatched from the cultures where their skills were valued and they had won respect and social standing. In the Atlantic system, slaves were regarded as chattel, the property of other humans, and merely drudge labor. Even if they served as house servants on plantations in the Americas, they had no chance of becoming full members of the households and kinship networks to which they were usually connected in the largely domestic systems of slavery that predominated across most of Africa and Asia. Thus, there was little opportunity for most slaves to demonstrate their intelligence or talents. In fact, once enslaved, their burdens as laborers, and often their very survival, could depend on feigning incompetence or stupidity. “Smart” slaves were viewed with suspicion by members of the planter classes as potential troublemakers who might rouse others to resist the oppressive existence to which they had been condemned.

Whatever mix of these factors accounted for the emergence of racist attitudes among different

European groups operating within the Atlantic slave trading network, on the plantations of the Americas, or in drawing rooms of Europe where natural philosophers deliberated over the latest treatise on the divisions within the human species, racist ideas were regularly enlisted in the defense of the enslavement of Africans and the brutal systems of social control that were essential to hold them in bondage. Emphasis on the innate inferiority of the African “race,” or in extreme cases the contention that Africans were subhumans, served to rationalize the lives of humiliation, servitude, and misery that tens of millions forced to labor in the Atlantic plantation system endured through over four centuries. In these same centuries, far smaller numbers of Asian peoples, such as the Malays imported into the Dutch Cape Colony in South Africa or impoverished bonded servants from the lower castes of India, were also enslaved by Europeans overseas. But at least until the late eighteenth century, there were few attempts to argue for the racial distinctiveness of these groups. And those, such as the effort by the sixteenth-century Spanish jurist Juan Ginés Sepúlveda, who sought to demonstrate that the indigenous peoples of the Americas were soulless subhumans who could legitimately be enslaved, were fiercely contested—most famously by the Dominican friar Bartolomé de Las Casas, who energetically disputed Sepúlveda’s contention that wars to subjugate Amerindian peoples were just. Although in recent decades there has been considerable debate over the extent to which North American settler colonists distinguished themselves from the indigenous peoples in racial terms, the evidence suggests that until the nineteenth century at least, settler prejudice against the Native Americans was predominantly based on perceived cultural rather than physical differences.

Scientific Verification and Theories of Race

Until the last decades of the eighteenth century, racial distinctions and the concept of race itself remained vague and mutable. Early attempts to distinguish

basic types within the human species in the mid-seventeenth century were crude and impressionistic. It is believed that the first of these was by the humanist Isaac de la Peyrère who in a 1655 treatise on the descendants of Adam and Eve, chose skin color as his key marker and lumped most human groups according to whether they were reported as “red,” “yellow,” “black,” or “brown.” In the 1680s the indefatigable traveler François Bernier argued there were five main types of humans, including a catch-all “light-skinned” category and an equally variegated “African” grouping, and opined that the relatively minuscule Lapp herder peoples of the Scandinavian north composed a comparable category. Neither of these writers sought to set forth clear criteria on which these differences between human groups could be discerned and tested. A century later, a number of natural philosophers, most prominently the Scotsman Lord Monboddo, who had not even seen most of the peoples he wrote about, asserted that Africans, or Negroes, were closer (mainly on the basis of physical appearance) to apes than humans. In contrast to Lord Monboddo and other armchair naturalists, the physician Edward Long had lived for decades in the midst of the large African slave population in Jamaica. Large sections of Long’s *History of Jamaica* (first published in 1774) were devoted to descriptions of the unflattering physical features and signs of cultural debasement of the slave population that set them off from the European planter class. Like Monboddo, Long went to great lengths to chronicle the biological differences that made the Africans more akin to “lower” animal species than “whites.” But Long also argued at great length, and with considerable pretension to scientific authority, that miscegenation between Negroes and “whites” invariably resulted in infertile hybrids; thereby proving they were separate species.

In the last decades of the eighteenth century, a number of prominent scientists, including two Germans, S. T. Soemmering and Christopher Meiners, conducted extensive anatomical investigations of different human types, using mainly skeletal remains for which they had only limited non-European

samples. The purpose of these exercises in comparative anatomy was to provide an empirical grounding for determining specific bodily differences between racial groups and to establish more precise—hence ostensibly scientific—classifications of basic racial types within the human species. Popularized, and in many cases seriously distorted, by numerous nineteenth-century racist thinkers, including physicians who sought to refine or revise the findings of earlier investigators, racial classifications proliferated steadily. In some cases race studies were merged with “scientific” explorations of innate criminal types or utilized in tracts by eugenicists and other evolutionist thinkers arguing for the prohibition of race mixtures or promoting ones deemed advantageous for the improvement of dominant, hence superior races, whether “Caucasian” or “Mongoloid.” By the middle decades of the nineteenth century, the scientific study of race had fostered the production of a remarkable variety of instruments to measure the anatomical features of cadavers, skeletons, and skulls of specimens for different racial groups. Increasingly, the focus of these efforts to quantify racial distinctions came to be concentrated on the comparative measurements of skull samples from different human groups. By the last decades of the century, the “science” of phrenology was pervasive in European societies, a constant presence in venues as disparate as the ponderous deliberations of scientific societies and anthropological associations, such best-selling books as the Sherlock Holmes mysteries by Sir Arthur Conan Doyle, and the seaside amusement stands of Great Britain, where one could have one’s head measured in considerable detail for a small fee. The influence of evolutionary thinking, the assertion of Christian doctrine, and some of the more credible scientific studies led over the last half of the nineteenth century to the slow decline in the popularity of polygenetic explanations of racial difference, which traced them to separate creations, in favor of monogenetic theories, which stressed the essential unity of humankind, while attempting to argue ever wider, less permeable differences between racial types.

Racism and Ideologies of Oppression

In the half century before World War I and the two decades following the conflict, racial thinking reached the peak of its influence in shaping the ways in which societies in many parts of the world were organized, providing justifications for imperial expansion, supplying ideological fodder for mass social movements, and generating unprecedented intra-human strife and oppression. In the late nineteenth century, notions of racial superiority, often expressed in terms that were clearly nationalistic rather than biological, were constantly invoked by those who advocated colonial expansion and the domination of “lesser” peoples. Racist assumptions undergirded the civilizing mission ideology that was used to justify this aggressive behavior, explain away the marked decline in the living conditions of colonized peoples, and rationalize often draconian measures taken to repress popular resistance to imperial domination.

In colonies from Morocco to Vietnam, racist pronouncements informed all aspects of life from urban planning to schemes aimed at promoting the work ethic among the indigenous laboring classes. In the American South, South Africa, Australia, and New Zealand, many of the same ideas (though far less infused with scientific racism in the case of South Africa) provided the ideological basis for societies organized around extreme racial segregation and discrimination against people of color: African Americans in the southern United States; “kaffirs” or the Bantu-speaking majority in South Africa as well as immigrant Indians and mixed-race “coloreds”; Aboriginal people in Australia; and Maoris in New Zealand. In Germany, racist thinking intensified centuries-old religious and cultural prejudice against the Jews with ever more virulent expressions of anti-Semitism. After abetting the Nazi rise to power, racist invective made possible segregation, dispossession, removal and incarceration, and finally a massive, systematic campaign to exterminate not only the German Jews but all of those in the areas that were forcibly incorporated into the short-lived Nazi Empire from the late 1930s. In Japan in roughly the same decades,



ultra-patriotic ideologues who stressed the importance of racial purity as the key to the superiority of the Japanese people played critical roles in launching an increasingly militarized society on the path to external aggression, empire building, and ultimately a disastrous war against the United States and its European and Pacific allies.

Racism Repudiated and the Persistence of Prejudice

Those who sought to develop a science of race or promoted racist ideologies in the nineteenth and early twentieth centuries were no more successful than earlier thinkers had been in establishing meaningful, widely agreed upon points of demarcation between different human groups, much less in setting forth acceptable, non-ethnocentric standards by which the superiority or inferiority of different racial types might be judged. In the early decades of the twentieth century, when the influence of racist-charged ideologies and demagogues as well as racial discrimination at the everyday levels of social interaction remained pervasive in societies across the globe, an intellectual counteroffensive was mounted. One of the prime movers of this assault on racist thinking was Franz Boas, a prominent German anthropologist who spent the most productive decades of his distinguished career training graduate students in the United States, among whom were Margaret Mead and Ruth Benedict. Boas, the anthropologists his teaching inspired, and allied ethnographers challenged the widespread assumption that racism had been validated by objective, culturally neutral, scientific investigation. They also sought to supplant race or biological difference with an emphasis on cultural variations in the study of human societies. By the early 1940s, the genocidal nightmare that the Nazis unleashed across Europe in the name of race purity and the racially charged war then raging in the Pacific generated widespread revulsion against racist social and political agendas. In the decades that followed, the spread of movements for independence organized by colonized peoples across Asia and Africa, as well as civil rights agitation against

the segregationist regimes in the American South and South Africa, further discredited theories of racial difference and their use to legitimize discrimination.

Despite these countervailing trends and campaigns explicitly aimed at eliminating racial prejudice mounted by international organizations such as the United Nations, racism has persisted both in popular attitudes in many societies and, in some instances, state policy, such as the regime based on institutionalized discrimination that lasted in South Africa well into the 1990s. In some of the more militant, extremist strands of movements for liberation from racial oppression, such as some Black Power organizations in the United States and settler Zionism in Palestine, reactive racist sentiments were nurtured. Theories of race were also kept alive by scientists and social pundits who persisted in efforts to demonstrate empirically that there were genetic differences, centered on intelligence quotient, or IQ, averages, in the capacities of different human groups. But by the final decades of the twentieth century, the idea of race and the racist prejudices and behavior that had been associated with it for nearly half a millennium were rejected by the overwhelming majority of scientists and social thinkers worldwide.

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See also Colonialism; Ethnocentrism; Genocide; Holocaust; Slave Trades; Social Darwinism

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Radio

Radio, or wireless, technology developed in the late nineteenth century and became the basis of a widespread broadcasting medium beginning in industrial countries during the 1920s. By the early twenty-first century, analogue AM and FM radio service was available in nearly every nation, and digital services were rapidly developing.

James Clerk Maxwell (1831–1879) was the first to make a theoretical prediction of a wireless means of transmitting information in the 1860s in Britain—and thus began a series of experiments that culminated in the widespread medium of radio, today available in nearly every nation. (Note that although *radio* can refer to any electromagnetic radiation, in this article the term is used for broadcasting and related services but not, for example, for television broadcasting signals, radar, or mobile phone service.)

The German physicist Heinrich Hertz (1857–1894) proved Maxwell correct with small-scale experiments in the late 1880s, but took the idea no further. The Italian inventor Guglielmo Marconi (1874–1937) began experimentation in the mid-1890s, and soon moved to Britain and interested the government and military in potential applications of wireless. In 1901 he transmitted the Morse code signal for the letter “S” across the North Atlantic. By then other experimenters had begun work with radio in Germany, the United States, Russia, and elsewhere.

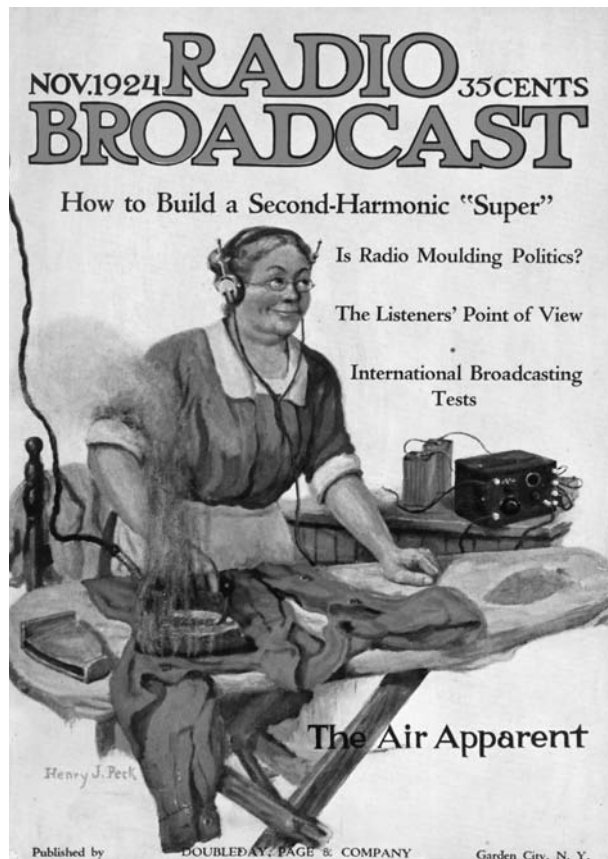
Wireless telegraphy was first used to communicate with (and between) ships at sea and also for long distance (often transoceanic) links. Before and during World War I, wireless telegraphy was also applied to naval and military needs. Nations that

made effective use of radio (especially at sea) enjoyed a decided advantage over other countries. Japan beat the Russian fleet in 1904 at the Battle of Tsushima in part because of superior radio communications; British signaling failures at the Battle of Jutland in 1916 were due in considerable part to confused radio messages.

To transmit voice or music signals (wireless telephony as opposed to telegraphy) requires more complex continuous-wave transmitting equipment that developed only slowly in the first two decades of the twentieth century. Reginald Fessenden (1866–1932), a Canadian working in the United States, was one of the first to realize this important distinction and sought to develop the needed transmitter. Lee de Forest (1873–1961) had by 1906 developed his Audion, an improved vacuum tube which, it was eventually discovered, allowed amplification of electrical signals, and thus more effective transmitters and receivers. Edwin Howard Armstrong (1890–1954) developed several important wireless circuits that made effective radio receivers possible. Patent fights among these and other inventors often delayed radio’s progress. Few of them had radio broadcasting in mind.

Early U.S. Radio Broadcasting

What was probably the world’s first broadcast (that is, a noncode transmission sent out to all who cared to listen) took place in 1906 at Brant Rock, Massachusetts, south of Boston. Fessenden, using equipment of his own design, transmitted voice and music signals to witnesses and a small audience of amateur (“ham”) and government radio operators. Though he repeated the feat several times, he did not establish a



The cover of *Radio Broadcast* magazine from 1924 shows how easily the magic of radio can distract a person from the most mundane of chores.

continuing service. Others, including Lee de Forest offered occasional broadcasts, but again did not offer a regular service. That role fell to Charles D. Herrold (1875–1948), who in about 1909 began what is probably the world's first regularly scheduled radio broadcast service in San Jose, California. It expanded and continued until early 1917, when U.S. entry into World War I brought most private radio transmissions to a halt.

Radio broadcasting began in earnest in parts of Europe, Canada, and the United States between 1919 and 1921, as nations lifted their wartime bans on private use of wireless technology. The earliest stations were experimental affairs, often on the air for only a few hours a week and offering no set schedule. Equipment was often handmade. Few in the potential audience owned or knew how to make receivers. Only slowly did this change, as interest in and then demand for the new over-the-air service expanded. By the end of 1922 there were more than five hundred stations

on the air in the United States, all sharing a handful of frequencies.

The years 1927 and 1928 were crucial in defining U.S. broadcasting as a commercially supported and federally-regulated system. Receivers improved (easier operation, plug-in rather than battery power, and internal speakers), the first regular networks were established (NBC in late 1927; CBS a year later), programs became more standardized as to their variety, content, and length, advertisers were attracted to radio's growing audience, and preliminary audience research made clear the medium's growing availability and impact. Finally, federal regulatory standards and licensing were standardized and given enforcement teeth. The present AM band of frequencies was reserved for broadcasting, allowing many more stations. Radio's golden years were in the 1930s. Depression pressures made "free" radio (once you owned a receiver) a bargain when money was tight. Drama, comedy, variety, and eventually news programs were all honed to a high standard by late in the decade. Many companies using radio advertising enjoyed growing product sales. Radio programs were widely discussed and listeners identified with popular drama and comedy characters. Radio news became important by the late 1930s, edging out newspapers for breaking stories. World War II events were brought to home-front listeners thanks to improving technologies that allowed radio's reporters to broadcast live or recorded from battlefronts. On CBS, for example, Edward R. Murrow (1908–1965) and his colleagues broadcast vivid reports of wartime events home to U.S. listeners. Radio journalism was fully developed during the fighting in the early 1940s.

European Public Service Radio

In contrast to the U.S. commercial model, starting in the late 1920s, the British Broadcasting Corporation (BBC) established a very different approach of public service and noncommercial programming, becoming a model for radio systems in many other nations. BBC leadership saw radio as a means to improve the country and its people, and therefore

offered considerable culture, education, and arts programming, but not much light entertainment. Other European nations followed suit with their own domestic radio systems, and applied the same approach to radio in their colonial possessions. In the United States, on the other hand, public service radio before the 1960s was relegated to a small number of educational and noncommercial stations, most run by schools or universities. Radio was of greater social importance in Europe (because of its public service emphasis) than in the United States (where radio focused on musical formats) after the introduction of television.

By the start of World War II, radio systems in Europe, Africa and Asia (but not North and South America), were under some degree of government control, supported by fees paid by listeners (few carried advertising). For nations in which the government controlled radio systems, the purpose of radio was to advance national arts and culture and perhaps forward government policies. Little entertainment or popular music was offered, which led, along with advertisers' demand for access to listening audiences, to the formation in the 1950s and 1960s of numerous "pirate" (unlicensed) stations in Europe, some of them broadcasting from ships offshore, all following the American model by playing popular music and supported by advertising.

International Radio Services and Propaganda

Governments often co-opted radio broadcasting for the purposes of persuasion and sometimes terror. Radio Moscow in 1929 was perhaps the first international shortwave radio service; it was designed to extol the virtues of Communism beyond Russia. The BBC's Empire Service (the predecessor of today's World Service) to British colonies and French colonial broadcasting followed in 1932, as, after 1933, did Nazi Germany's radio service. The Nazi official Josef Goebbels (1897–1945) bent the medium to promote German superiority while striking fear into the hearts of potential enemies. The United States, which

had relied on private networks for international radio services in the 1930s (especially into Latin America), by 1942 formed the Voice of America, which became the official voice of the United States outside its shores.

Broadcast propaganda continued from all belligerents during World War II and expanded further during the Cold War as the Soviet Union, China, and several of their satellite states developed their short-wave radio systems and added airtime. The United States created Radio Free Europe and Radio Liberty in the 1950s to broadcast into Eastern Europe and Russia, respectively. Dictators sometimes made personal use of radio: the Egyptian leader Gamal Nasser (1918–1970) used radio extensively to reach his people in the late 1950s, as did Fidel Castro (b. 1926 or 1927), who made hours-long speeches regularly after taking over Cuba in 1959. Both leaders sought to strengthen their popular domestic support, often by attacking external enemies (and especially the United States). With the end of the Cold War in the early 1990s, international radio became somewhat muted, focused more on nationalistic messages and culture than on persuasion. Yet U.S. services into Cuba (Radio Martí) and the Middle East (Radio Sawa) demonstrated how international radio could still be applied to political and cultural persuasion. Cold War radio propaganda served primarily to keep true believers on both sides in line—it probably persuaded few listeners to totally change their thinking.

Radio in a World of Television

Postwar domestic radio broadcasting faced a changing media context worldwide. In the 1930s Edwin Armstrong had perfected FM technology, which largely eliminated static and offered far better sound and more predictable coverage. FM was a boon as Europe rebuilt its war-devastated radio systems, allowing more stations and diversified content. The service developed slowly into the 1950s in the United States as money was poured into new AM stations (which expanded from 900 in 1945 to 2,400 by 1952)



and television. FM radio was especially valuable in tropical countries, where electrical interference often drowned out AM's medium wave transmissions.

As commercial television expanded after 1950, however, radio soon shed much of its program variety (and, in the United States, its network service) to the newer television business. Radio became "background" to most listeners as it sought a new role—which turned out to be that of purveyor of modern popular music. "Formula" or "top-40" radio appeared in the mid-1950s in the United States as radio stations became jukeboxes for the latest musical fads, rapid-fire newscasts, and a growing amount of advertising. U.S. radio DJs (disc jockeys) became media heroes to millions—and models for the European pirate stations. A growing number of listeners used easily portable transistor radios after the mid-1950s, making radio the "take it with you" medium.

Educational radio became known as public radio in the United States after 1967, with National Public Radio being founded in 1969 to connect what would become hundreds of local outlets. National Public Radio and other program syndicators provided public affairs and cultural programs that stations used along with local expression and other alternatives to commercial pop music stations. By the late 1990s, more than a thousand small community FM outlets operated, largely with volunteer staffs. In the United States, FM radio's vastly better sound quality and programming made it more popular than AM radio by the 1980s; by the end of the century it was attracting more than 75 percent of the total U.S. audience. Music of all kinds was more likely to be heard on the growing number of FM stations (from 2,500 in 1970 to nearly 9,000 three decades later). By the 1990s, talk and news formats dominated AM stations, many of the most popular programs featuring conservative political commentators or religious broadcasters who paid for the time they used, just like advertisers. Such programs—much like international propaganda—tended to reinforce listener thinking, but probably persuaded a few to change their mind. Some political campaigns were clearly affected by such broadcasts, but evidence was

divided on their long-range impact. Radio became more widely available in automobiles as well (half of all cars had an AM radio in the early 1950s; by 1990 more than 95 percent had FM capability as well)—important because of the increasing number of "drive time" (commuting) listeners.

Deregulation of radio in the United States allowed ownership of national chains of hundreds of stations run by a single entity, while one owner could own up to eight stations in the largest markets. Considerable controversy arose as to whether this harmed or aided diversity of programming, but most observers agreed that deregulation contributed to the decline of news and public affairs programming on U.S. stations. By 2010, the commercial radio business was in financial trouble as advertising revenue declined and many listeners turned to alternative (and usually portable) audio sources. On the other hand, listeners of public radio news and public affairs programs appeared to be increasing.

After about 1990, the U.S. model of commercially supported popular music radio became more widespread worldwide. Some countries adopted competing public service and commercial radio systems as early as 1974 (in Britain) and even the 1940s (in Canada). Others moved away from noncommercial systems supported by government funding to a commercially supported structure, a move driven most by the need to conserve government money.

Radio's Digital Future

By the late 1990s, radio entered a lengthy transition from existing analogue AM and FM broadcast transmissions to digital transmissions. The latter are delivered from terrestrial stations in some countries, while in others (including the United States) satellites transmit digital radio programming on a commercial-free, subscription basis. Digital radio provides vastly superior sound quality but requires new receivers. After more than eight decades of service, sometime in the early twenty-first century analogue AM and FM radio services are likely to disappear in the face of these newer digital offerings. While changing

technology will make for clearer signals, there is no evidence thus far that it will either improve or diminish radio programming diversity or quality.

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See also Communication Media; Telegraph and Telephone

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Railroad

Few inventions have had a more immediate or lasting impact on world history than the railroad. As the first mode of land transport capable of outpacing and outdistancing the horse and camel, it brought far-flung parts of continents and disparate peoples together for the first time. It became a potent symbol of modernity, technological prowess, and industrial know-how.

The railroad is a mode of transportation that consists of a locomotive, a train of passenger or freight cars, a two-railed steel track, a graded railbed, and terminals. Unlike other forms of transport, rail travel requires no steering: wheels with flanges (raised rims) keep the locomotive and cars on track. Railroads are energy-efficient because the wheels glide on the tracks with little friction.

A typical rail network consists of a trunk (main line) and branches (spurs). The trunk links the major urban and industrial centers along a roughly straight trajectory. Branches link the hinterland to one or more of the urban-industrial junctures on the trunk. Tokyo, Guangzhou, London, Cologne, Chicago, and New York are among the cities that have become major rail hubs, because they lie either in an industrial region, on the crossroads of multiple trunks, or near a seaport.

Steam engines were used to power locomotives for most of the nineteenth century, but modern engines run on diesel or electricity. Today's high-speed passenger trains, built by Japan, China, and France, can travel up to 300 kilometers per hour, faster than all other modes of transport except airplanes and spacecraft. The longest trip that can be undertaken without a change of trains extends 10,214 kilometers from

Moscow, Russia, to Pyongyang, North Korea. Only ships regularly transport people and cargo a greater distance. "The railroad," writer Heinrich Heine remarked in 1843, "annihilates space and only time remains."

The Origin of Railroads

Europe's mining enterprises began to utilize primitive rail systems to haul coal and iron ores as early as the sixteenth century. Because mine shafts were muddy and uneven, ore haulers placed parallel wooden rails along the mine floors to keep the cartwheels above the ruts. By the late eighteenth century, iron rails had come into common use and some enterprises had begun to extend their tracks from the mine entrances to the coal ports. These colliery railways were especially thick in the coal-mining regions of northeast England, near the Tyne and Wear rivers, where they were known as "Newcastle roads."

Most historians date the beginning of the "Railroad Age" with the opening of the 44-kilometer-long Stockton and Darlington Railway, a steam-powered freight line that cut the cost of coal transport by more than half, in 1825; and the 50-kilometer-long Manchester and Liverpool Railway, a passenger and freight line that linked two of England's most important urban-industrial centers, in 1830. Both were designed by George Stephenson, Great Britain's first great railroad engineer.

Railroad Mania in the Nineteenth Century

By the 1840s Great Britain was in the grips of a "railroad mania," a period of boom-and-bust



Claude Monet, *The Gare Saint-Lazare: Arrival Of A Train* (1877). Oil on canvas. Monet entered seven paintings of this railroad station in the fourth Impressionist exhibition in Paris, April 1877.

construction that led to a fourfold expansion in British tracks from 2,340 kilometers to over 9,700 kilometers within a decade. This period also witnessed the rise and fall of George Hudson, the “Railway Napoleon,” the first of many rail swindlers whose stock manipulations and shady dealings spawned numerous lawsuits, bankruptcies, and political scandals. “Britain is at present an island of lunatics, all railway mad,” Judge Cockburn declared in 1845 (Blum 1994, 14–15).

Railroad mania spread quickly to the coal-producing regions of northwestern Europe—Belgium, northern France, and Rhineland Prussia. This was where the world’s first international line was built, linking Liege, Belgium, and Cologne, Rhineland Prussia. Governments played a greater role on the continent than in Great Britain in promoting rail development and determining the routes. So did international bankers, most notably the Rothschild family, a name that became all but synonymous with continental rail construction in the nineteenth century. Government-business collaboration resulted in a construction frenzy, and by 1907 Europe (excluding Russia) was crisscrossed with 263,000 kilometers of track. Germany alone possessed 58,000 kilometers, followed by France (47,900 kilometers), the

Austro-Hungarian Empire (41,800 kilometers), Great Britain and Ireland (37,300 kilometers), Italy (16,600 kilometers), Spain (14,800 kilometers), and Sweden (13,400 kilometers).

Railroads also played a major role in achieving the nation-building ambitions of the United States, the Dominion of Canada, and czarist Russia. The first U.S. rail link, the Baltimore and Ohio Railroad, began operation in 1830, and for the next three decades construction occurred almost exclusively east of the Mississippi. The discovery of gold in California in 1849, however, put a premium on a fast and secure land route to the Pacific Ocean. Generous subsidies from the U.S. government made it possible for the Union Pacific and Central Pacific companies to jointly finish a line between Sacramento and Omaha in the years 1863 to 1869. Several other lines followed, including the Southern Pacific (1881), Northern Pacific (1883), and Great Northern (1893). Meanwhile, Canada completed the first true transcontinental railroad, the Canadian Pacific, which linked the eastern port of Montreal to the western port of Vancouver, in 1885. The Canadian Northern and Grand Trunk Pacific followed in the early twentieth century. Last, the Russian government constructed the Trans-Siberian Railway, linking Chelyabinsk

Rail travel at high speed is not possible because passengers, unable to breathe, would die of asphyxia. • **Dionysus Lardner (1793–1859)**

and Vladivostok, between 1891 and 1916. At 7,600 kilometers, it is still today the world's longest railroad. By 1907, the United States had laid a total of 382,100 kilometers of tracks (more than all of Europe combined), Canada 36,300 kilometers, and Russia 63,100 kilometers.

Colonial and Foreign-Financed Railroads

The Railroad Age coincided with the peak years of European colonization and imperialism, and consequently most of Africa's and Asia's early railroads were built with European capital and know-how. The British jump-started India's rail network in 1853, with the construction of a 34-kilometer-long line between Bombay and Thana, and by 1880 all of its major cities were connected by rail. Various European governments built lines in China, but construction proceeded at a snail's pace until the Qing dynasty finally bowed to the inevitable and commissioned a U.S.-trained Chinese engineer, Zhan Tianyou, to build the Beijing-to-Zhangjiakou line in 1905. By 1907, Asia possessed a total of 77,110 kilometers of tracks, not counting those portions of Asia under Russian control. British India alone accounted for 48,230 kilometers, followed by Japan (8,000 kilometers) and China (6,800 kilometers). During the same time period, Africa's rail network grew to 29,800 kilometers, most of it concentrated in South Africa (11,300 kilometers) and Egypt (5,600 kilometers). Cecil Rhodes's dream of a transcontinental Cape-to-Cairo railroad, however, remained unfulfilled.

In the Americas south of the U.S. border, national authorities and international investors together provided most of the impulse for the 80,500 kilometers of tracks that were laid there between 1846 and 1907. Argentina developed the largest network (22,100 kilometers), followed by Mexico (21,900 kilometers of tracks) and Brazil (17,300 kilometers). British entrepreneurs financed the most construction in Argentina and Brazil, while the Mexican government managed to finance many of its own tracks.

Technology, Organization, and Regulation

The success of the railroad depended on several key inventions, chief among them the locomotive. Richard Trevithick demonstrated in 1804 that a steam engine could be used to propel railcars, but it was not until the 1820s that George and Robert Stephenson constructed the first modern locomotives, the "Locomotion" and "Rocket," for use on Britain's rail lines. Other important breakthroughs include the sleeping car, developed by George Pullman (U.S.) in 1857; pneumatic brakes, invented by George Westinghouse (U.S.) in 1869; the automatic car coupler, patented by Eli Janney (U.S.) in 1873; the electric locomotive, invented by Werner von Siemens (Germany) in 1879; and steel rails and steel cars, which came into widespread use in the early twentieth century. Equally important for a fast, safe, and smooth ride were track lines that followed an even gradient despite changes in the terrain. Two inventions were particularly useful in this regard: the iron bridge, pioneered by Robert Stephenson in Newcastle in 1849, and the railroad tunnel, first used in the Italian Alps in 1871.

Organizational breakthroughs also played a major role in the success of the railroad. The first was the introduction of "Greenwich mean time" (railroad time) in 1840, which made it possible for rail companies to establish uniform timetables and for passengers to plan their trips and make their connections. The second was the use of the telegraph for purposes of signaling and traffic control, a necessity especially on one-track lines where the danger of a head-on collision was always present. Station managers, signalmen, switchmen, and brakemen were all as essential to a safe and trouble-free journey as the engineer.

Track width was the one major technological-organizational problem that was never fully resolved. Most European and North American railroads adopted the same track width used in Britain—1.44 meters (56.5 inches)—which came to be known as "standard gauge." Some countries, however, chose a "broad gauge." Russia and Finland picked 1.52 meters (60 inches), while Spain, Portugal, and India chose



1.68 meters (66 inches). “Narrow gauge” railroads (less than 1.435 meters) were also built, especially in mountainous regions. The chief advantage of a nonstandard gauge is that it offers some protection against a military invasion. The chief disadvantage is that it inhibits the free flow of goods and passengers across borders.

Impact on Society and Politics

The railroad displaced the horse-drawn carriage as the preferred mode of passenger travel as early as the 1840s because it provided a faster, safer, and more comfortable ride under all weather conditions. It also largely outcompeted the canal-and-barge industry for the transport of bulk commodities such as ores, grains, gravel, lumber, chemicals, and petroleum. Rail travel, in fact, proved so superior to all previous modes of transportation that by the 1870s it had achieved a near monopoly on the movement of persons and goods in all the major industrial countries. Monopoly led to price fixing, deceptive business practices, and rampant corruption—and eventually also to government regulations designed to restore a semblance of public trust and private competition. One of the earliest was the Interstate Commerce Act, passed by the U.S. Congress in 1887. Monopolistic practices also made the railroad one of the most hated symbols of foreign domination. “Nationalization” thus became one of the catchwords of anticolonial and anticapitalist movements in the colonial and developing world. Juan Peron, for instance, purchased Argentina’s railroad system from British investors shortly after coming to power in 1946.

Many nineteenth-century liberals and radicals welcomed the railroad as a tool for bringing the world together in peace and harmony, but rails proved equally useful as a tool of empire-building and warfare. In the Franco-Prussian War (1870–1871), the Prussian army skillfully used the German rail system to invade and conquer northern France. Russia’s decision to build the Trans-Siberian Railway through Manchuria was one of the principal causes of the Russo-Japanese War (1904–1905). Plans to construct

a Berlin-to-Baghdad Railway in the early twentieth century contributed to the outbreak of World War I in 1914.

The End of a Monopoly

The Railroad Age came to an end during the first half of the twentieth century with the emergence of automobiles, trucks, buses, airplanes, and pipelines as alternative modes of transport. Nonetheless, with some 1,204,000 kilometers of track on every continent except Antarctica (enough to encircle the earth more than thirty times), the railroad remains central to the movement of people and goods to this day. In densely populated regions, such as western Europe and Japan, rails are often as fast and convenient as autos and planes. Railroads also remain popular in India, China, and other parts of the developing world, where they are typically the only affordable means of travel. Because railroads require far less fuel than trucks, they are also still one of the most cost-effective methods for transporting bulk commodities.

Railroads experienced a small revival in the 1960s with the advent of the “container age” in the shipping industry and the development of high-speed trains. Flatbed rail cars loaded with containers now transport a portion of the finished products that were once carried almost entirely on trucks. Similarly, with the opening of the New Tokaido line between Tokyo and Osaka in 1964, railroads began to recapture a portion of the passenger traffic that had been lost to the airlines. The completion of the Channel Tunnel (“Chunnel”) in 1994, for instance, opened up a high-speed rail route between Paris and London that can be traversed in less than three hours.

Although as of 2009 the United States possessed the most usable miles of tracks of any country in the world today (233,000 kilometers), 143,000 were allocated for freight. Passenger traffic in the United States is minuscule (despite the advent of Amtrak service in 1971), compared with other countries whose highway infrastructures, dense urban populations, or economies do not support automobile commuting or ownership. Asia, meanwhile, accounts for nearly 70

percent of all railroad passenger miles worldwide, largely because millions of Indians and Chinese travel by rail every day.

China indeed seems to be the most ambitious railway builder today. Its overburdened system carried 25 percent of the world's rail traffic on 6 percent of the world's lines (86,000 kilometers) at the end of 2009. In an effort to boost its economy even further, China embarked on a construction program that will help shift the center of its economic focus inland; it aims to reach 120,000 kilometers of rail line by 2020.

Mark CIOC

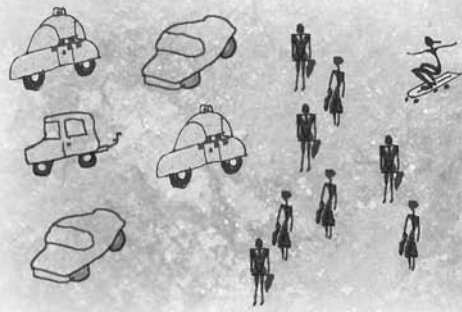
University of California, Santa Cruz

See also Industrial Revolution; Iron; Transportation—Overview

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Ramses II

(REIGNED 1304–1237 BCE)

EGYPTIAN PHARAOH

Ramses II, also known as “Ramses the Great,” was one of the most famous pharaohs of the nineteenth dynasty of Egypt (1570–1070 BCE). He established numerous building projects, conducted aggressive war campaigns, and created international ties that are still discussed today.

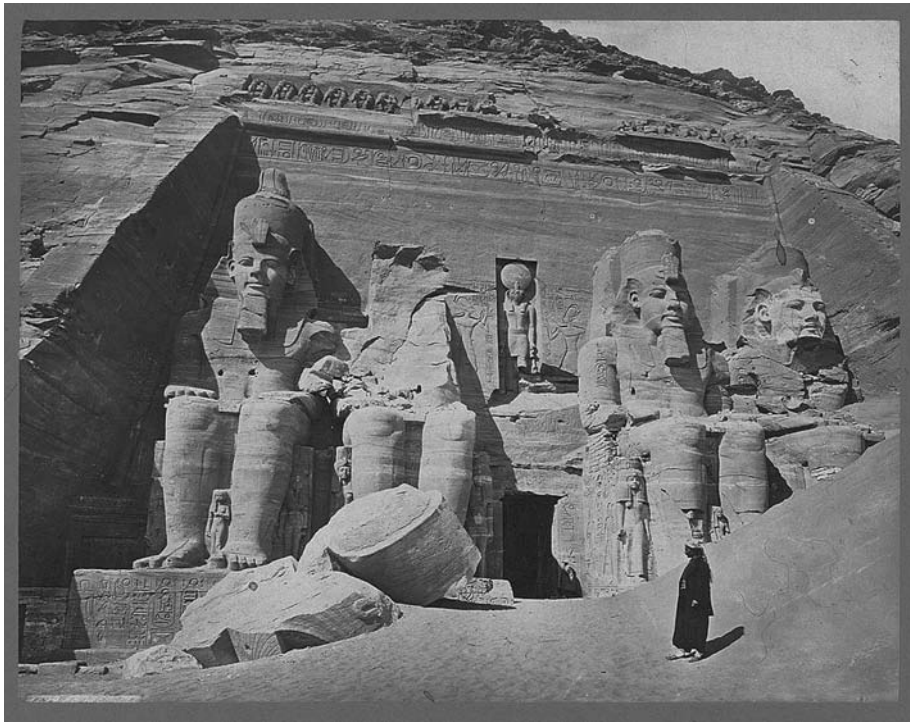
The Egyptian pharaoh Ramses II was born to Seti I and Queen Tuya in 1279 BCE. He is most often remembered for the ambitious building projects and aggressive war campaigns he conducted, and for solidifying Egypt’s legacy in the world. But it is possible that Ramses II may have had some connection with the exodus of the biblical text, as there is some discussion among scholars whether Ramses or his father was the reigning pharaoh at the time of the event. Although most agree that Seti I was pharaoh, no Egyptian texts mention any accounts of the Hebrew exodus. The stela of Merneptah, son of Ramses, however, does include the name “Israel” in a list of peoples conquered.

Ramses II began his reign at the age of twenty-five. In contrast to his grandfather Ramses I’s brief period on the throne (1293–1291 BCE), Ramses II led Egypt successfully for sixty-seven years. Not only did the king solidify Egypt’s legacy throughout the world, he secured his family legacy by fathering many children. As a result of his marriages and of relationships with women in his harem, Ramses sired more than one hundred sons and daughters.

Two of his wives, Nefertari and Istonfret, are known in Egyptian history, but there is not much information available regarding the background of either queen. Nefertari was Ramses’ first wife, and she gave birth to their initial child, the crown prince

Amenhirkhopshef. Their family also included two daughters, and three more sons. Nefertari died during the twenty-fourth year of his reign, and Istonfret became queen shortly thereafter. Istonfret also bore three sons, one of whom, Merneptah, would be the king’s successor. Primarily for political reasons, Ramses made international connections by marrying women from surrounding nations or having them become a part of his harem.

The powerful pharaoh was also a great military strategist, a trait associated with his grandfather, who was also a successful army officer. During his time on the throne, Ramses II battled several enemies, but among the most notable Egyptian foes were the Hittites to the north. Seti I had success in maintaining peace with them, particularly at Egypt’s volatile Syrian border near the city of Kadesh. However, a revolt near Kadesh in 1275 BCE forced Ramses to take action against the Hittites. What followed is known as the “battle at Kadesh.” As the Egyptian forces slowly moved north to the city, it appeared that they would have little difficulty with the Hittites. They even captured two spies who divulged the Hittites’ attack plans, but the men were designated plants who purposely gave false information to the Egyptians. Consequently, Ramses’ men marched into a waiting ambush. However, by employing his cunning military skill, Ramses was able to maneuver his troops and eventually forced the Hittites to retreat. Within days the Egyptians and Hittites battled again to what most scholars interpret as a draw. Nevertheless, the inscriptions on the walls of the Ramesseum mortuary temple and the temples at Karnak, Abydos, Abu Simbel, and Derr show iconographic depictions of a triumphant Egyptian army slaughtering its Hittite enemies, and



View of colossal figures, probably Ramses II, carved into rock that is part of the Great Temple at Abu Simbul, Egypt. Albumen photograph taken between 1856 and 1860 by Francis Frith.

the writings sing the praises of Ramses' bravery and skill on the battlefield.

In addition to the ruler's military brilliance, the reign of Ramses II is further defined by colossal architecture and detailed sculptures found throughout Egypt. One of his greatest architectural marvels is the Great Temple at Abu Simbel. The facade of the structure has four seated figures of Ramses II. Each stands about 20 meters high, and they have been sculpted directly from the mountain where the edifice is located. The temple also demonstrates a unique feat of engineering in that when the sun rises on 22 February and 22 October the light shines through the entrance and illuminates three of the four gods seated inside. Like the statues of Ramses, the gods have also been carved directly from the mountain.

Ramses II's reign ended in 1237 BCE. Not only did the king lead the Egyptians successfully during his tenure as king, he lived more than ninety years. Sadly, the contents of Ramses's tomb, like those of many others, fell into the hands of robbers. Items such as bronze

and wooden *ushabtis* (figures shaped like mummies) and a statue of the king survived and are housed in museums throughout Europe. Excavators also discovered the pharaoh's mummified body, which now lies in the Louvre. Ramses II's magnificent accomplishments are firmly etched in Egyptian history.

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See also Egypt

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Raynal, Abbé Guillaume

(1713–1796)

FRENCH HISTORIAN

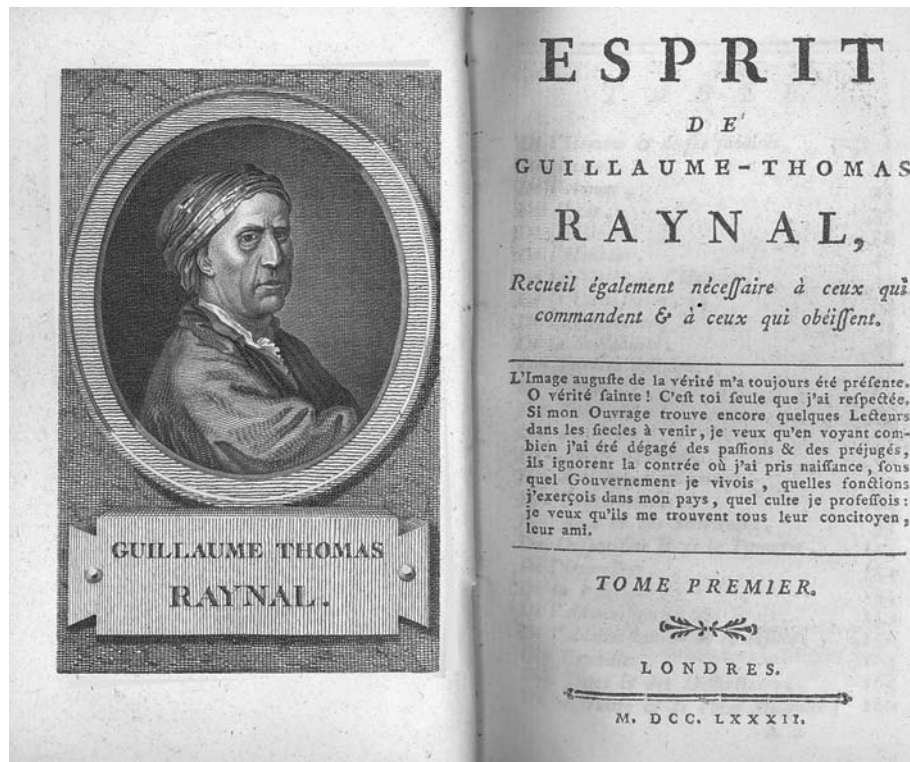
Abbé Guillaume Raynal, in his influential, multi-volume work known as the *History*, thematically compared the experiences of European nations in the pursuit of global commerce, both in Asia and the New World. This eighteenth-century work inspired advocates of reform and even revolution on both sides of the Atlantic. A didactic work representative of its age, it nevertheless provided an agenda for modern excursions in world history.

The Abbé Guillaume Raynal was the primary author of *Philosophical and Political History of the European Settlements and Commerce in the Two Indies*. This book, known as the *History*, was a multivolume exploration of European expansion in the East and West Indies, as Asia and the Americas were then designated. One of the most popular and influential works of the eighteenth century, this collaborative venture appeared in three major editions and many printings between 1770 and 1781. Like Denis Diderot's *Encyclopedia*, it was a laboratory of Enlightenment ideas and concerns with an agenda of opposing tyranny and ignorance. (The Enlightenment was a philosophic movement of the eighteenth century marked by a rejection of traditional social, religious, and political ideas and an emphasis on rationalism.) But the *History* was more thematic in comparing the experiences of European nations in the pursuit of global commerce both in Asia and the New World. Raynal focused on the methods by which colonies and trading stations were established, the impact of colonialism on the indigenous cultures, and the effects of imperialism on European countries. Beyond his comparative

and global perspectives, what also connected him to twentieth-century approaches to world history was his inclusive concern with elements of both material and nonmaterial culture. He was just as fascinated by the products of commerce and the geographical conditions of commercial intercourse as he was by the principles of colonialism.

Raynal was joined in his enterprise by various Enlightenment figures, the most important being the co-editor of the *Encyclopedia*, Denis Diderot. Diderot's more radical vision was increasingly prominent in the *History* editions of 1774 and 1781 and was especially prominent in the attacks on slavery and political oppression. Raynal also relied on numerous printed sources and the reports of colonial administrators, traders, and persons of learning with whom he had contact. Raynal himself traveled only through his writings.

Although the *History* was interspersed with anecdotes and digressions, its organization reflected the direction announced in the title. Beginning with the East Indies, Raynal described not only the Portuguese, Dutch, English, and French expansion in Asia, but also the lesser roles of Russia, Prussia, and Sweden. China and India were given extensive treatments, and then the focus shifted to the West Indies and descriptions of the Spanish and Portuguese conquests and colonization in the New World. In the following books Raynal and his collaborators examined French and British colonization in the Antilles and then in North America. Slavery and the slave trade were central to this discussion. The last book of the second and third editions constituted an overview of the moral and philosophical underpinnings that characterized much of the *History*. Such topics



Pages from the first edition of *Esprit de Guillaume-Thomas Raynal* (tome premier, 1782).

as religion, morality, tariffs, public credit, population, commerce, and agriculture were followed by a final theme, “Reflection on the benefit and harm which the discovery of the New World has done to Europe.”

The Jesuit-trained Abbé Raynal (an abbé is a member of the French secular clergy) embraced progressive Enlightenment ideals, even though the editions of the *History* and several of his minor works betrayed many shifts and inconsistencies in his positions. He shared the popular ideology of the French economists known as “Physiocrats” in advocating free trade, the elimination of commercial monopolies, and the advantages of free labor over slavery. Indeed, although Raynal came to represent a gradual approach to emancipation, contemporaries viewed the *History* as an oracle of the antislavery movement. A foe of the extremes of political absolutism and popular government, he seemed to have preferred some form of constitutional monarchy. Some of Raynal’s harshest criticisms were leveled at the claims of religious systems, such as the Catholic Church’s doctrine of papal infallibility, which he felt had led to intolerance and fanaticism.

Raynal’s *History* was perhaps the last example of the cosmographical tradition, begun by Andre Thevet and Sebastian Muenster in the sixteenth century,

which attempted a global comparison of cultures. They anticipated Raynal in explaining the rise of Europe in part as a result of utilizing such technologies as the compass and the printing press. Yet, he went much further in championing eighteenth-century ethnocentric perspectives that celebrated Europe’s ascendancy and the benefits of European culture for indigenous societies, even recommending, in the third edition of 1781, mixed marriages between French subjects and colonial natives as a way of further civilizing the latter. Although he gave considerable hearing to the debate about the virtues of primitive culture versus civilization and expressed humanitarian concerns about various societies the perspective of the *History* was clearly Eurocentric.

As much as any single literary production, Raynal’s *History* mentored the advocates of reform and even revolution on both sides of the Atlantic. A didactic work, clearly representative of its age, it nevertheless provided an agenda for modern excursions in world history.

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See also Enlightenment, The; European Expansion

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Red Cross and Red Crescent Movement

The Red Cross and Red Crescent Movement, with agencies in over 178 countries around the world, aims through humanitarian intervention and international law to help victims of war and armed conflict (on a local or international scale) or to aid those afflicted by natural and human-caused disasters.

The International Committee of the Red Cross (ICRC) and the International Federation of Red Cross and Red Crescent Societies (the Federation), together with the national Red Cross and Red Crescent Societies in over 178 countries around the world, form the International Red Cross and Red Crescent Movement. As a whole, the Movement's mission is to help victims of international and local armed conflicts and to lessen the horrors of war indirectly through international law and directly through humanitarian intervention. The larger movement also undertakes the peacetime relief of suffering from natural and humanmade disasters. There are currently over 250 million members of the Red Cross Movement.

Perhaps more than any other international organization, the Red Cross has been able to shape international behavior. Working through the international legal system with the Geneva Conventions (first developed in 1864, and adopted in their current form in 1949) and other treaties, the Red Cross has created what is now almost universally recognized as correct humanitarian behavior in wartime: neutrality for medical personnel and their equipment and the humane treatment of prisoners of war. The ICRC considers itself the "guardian of international humanitarian law" and works to extend the reach and observance of those laws. The success of the international body has been aided by the local importance of the national societies.

The International Committee of the Red Cross

The ICRC is the original, earliest Red Cross group, founded in 1863 by Jean-Henri Dunant (1828–1910), who was honored for this accomplishment in 1901 with the first Nobel Peace Prize. The ICRC, an independent organization that remains small and almost unchanged since the late 1800s, is a non-governmental organization staffed almost entirely by citizens of Switzerland, a policy intended to



A portrait of Clara Barton, founder of the American Red Cross Society, painted in 1844 by Henry Inman.



Emblem of the International Federation of the Red Cross and Red Crescent Societies.

safeguard the neutral political stance of the organization. These 800-plus “delegates” conduct business for the Committee around the world. The group’s main responsibility is to work as a neutral intermediary in situations of armed conflict, protecting both military and civilian victims, as well as mobilizing and organizing the national societies to assist its work. Comprising fifteen to twenty-five members who make policy for the Committee, the ICRC is technically a private Swiss company, headquartered in Geneva, Switzerland, where its archives and offices are located.

The Federation and the National Societies

The Red Cross and Red Crescent Movement is augmented considerably by the work of the national societies, self-governing organizations that today exist in over 178 countries (the societies in Taiwan and Israel are not recognized by the ICRC). These groups are funded by membership fees and popular subscriptions, although in many countries, government subsidies provide much of their monies. Each national society has a unique character and history, linked to the national history of the country in which the society was founded. For example, the American Red Cross Society was a latecomer to the Red Cross organization. It was founded in 1881 by Clara Barton and chartered by Congress in 1900, and modeled on the Japanese Red Cross Society, which was the preeminent Red Cross society in the world at the



A young woman in a Red Cross uniform, circa 1880–1923, Sydney, Australia. Tyrrell Photographic Collection, Powerhouse Museum.

time. Many national societies sponsor public health programs, as well as provide disaster relief and assist the ICRC in war relief.

The International Federation of Red Cross and Red Crescent Societies, like the ICRC, is an international group with headquarters in Geneva, representing the national societies and coordinating their mutual help, cooperation, and program development. Proposed after World War I by American Red Cross War Committee president Henry Davison, it was founded in 1919 as the League of Red Cross Societies. The League changed its name in 1983 to the League of Red Cross and Crescent Societies, to include Muslim nations unwilling to adopt the sign of the cross, and finally in 1991 became



the International Federation of Red Cross and Red Crescent Societies.

The Red Cross Movement: Perspectives on the Future

In the past 140 years, the Red Cross has grown from a small group of visionary European men intent on lessening the destruction caused by war to a worldwide movement including and serving people on all continents. The movement has been unusually successful in educating states and individuals in its principles, principles it claims are universal: humanity, impartiality, neutrality, independence, voluntary service, unity, and universality. The Red Cross symbol is perhaps the most widely recognized symbol in the world, known to people of all nations as a beacon of medical aid and relief. The success of the Red Cross mission is encouraging for those hoping to create an

international society that has the moral weight to influence the behavior of states and individual actors.

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Emmanuel College

See also Human Rights

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Religion and Government

Religion has traditionally served as a source of authority, law, and moral norms for society, even in predominantly secular societies. Through most of the world's history, religious traditions have had formal ties with governments and have been seen as an important source of legitimacy of rulers.

Religion and government have often existed in complementary roles throughout world history—with religion lending authority to a government, and government legitimizing a leader's rule. Various societies throughout history have practiced toleration or acceptance of minority faiths, although only rarely based on principled beliefs in religious freedom. Modern ideas of rights to religious freedom and secular governmental systems are based in a variety of sources, but draw great strength from the Western church-state tradition and the Enlightenment.

Religion: Source of Law, Authority, and Moral Values

Throughout world history, religious traditions and beliefs have been a direct and indirect source of law and authority. The Babylonian Code of Hammurabi, for example, begins with a reference to the gods Anu and Bel, who called Hammurabi (reigned 1792–1750 BCE) to “bring about the rule of righteousness in the land.” The Jewish Law of Moses not only codified religious belief, but also set forth an extensive and elaborate legal system that governed all areas of social life. In more recent times, the Bible formed the basis for laws in the early American colonies and was used

to resolve issues as far-ranging as procedural rules, property law, criminal law, and, in general, the ideal of the rule of law. Even in modern secular societies, religion is still regularly used as the source for moral values and arguments for reform. For example, Reverend Martin Luther King Jr. (1929–1968) and Mohandas Gandhi (1869–1948) drew extensively on the Christian and Hindu traditions in their calls for social change, and similar religious beliefs have informed debates on the abolition of slavery, care for the poor, abortion, marriage, and other social and economic issues.

Traditional Religious–Governmental Ties

In the ancient world, religion was traditionally intertwined with ruling hierarchies, through either theocracies or divinely ordained rulers. In the Chinese Confucian tradition, for example, emperors were believed to have the Mandate of Heaven, sanction from a divine power that justified a ruler's actions as long as it was beneficial to those he ruled. Roman emperors claimed to be descended from the gods or to be gods themselves, as did Egyptian pharaohs. The Japanese emperor served as the head of the Shinto tradition. In the caste systems of the Vedic and Hindu traditions in India, the priests were traditionally the highest castes. Roman Catholic popes ordained the Holy Roman Emperors and Protestant kings claimed a divine right to rule. From the time of Byzantium, Orthodox countries were marked by caesaropapism, a system in which the head of state has authority over the church. Ties such as these conferred legitimacy on the rulers and gave religion an important

God is on everyone's side . . . and in the last analysis, he is on the side with plenty of money and large armies. • **Jean Anouilh (1910–1987)**



The remains of a large kiva at Pueblo Bonito, New Mexico, suggest that the structures within the kiva were used for community meetings as well as for religious ceremonies.

role in ensuring the community's stability, unity, and compliance with law. For example, a strong, unified religious tradition was seen as playing an important role in ensuring the binding power of oaths and contracts. The close association of a religious tradition with the ruling hierarchy was usually also associated with political privileges for the favored religion and limitations or bans on the practice of minority religions.

Experiences of Religious Tolerance

Despite the tendency for governments with strong religious ties to limit protections to a favored religion, some rulers throughout history have accommodated and tolerated minority religious traditions, although this tolerance was not always principled and was often limited by the perceived needs of

the sovereign. In many cases, tolerance served as a practical way to handle a multiethnic, multireligious empire. For example, the Persian Empire from Cyrus II (reigned 559–530 BCE) to Darius I (reigned 522–486 BCE) employed a policy of religious toleration and support for minority groups, allowing the Jews to rebuild the temple in Jerusalem and returning images of Babylonian gods to their sanctuaries in Babylon. The Mongol Empire created by Chingghis (Genghis) Khan (c. 1162–1227 BCE) practiced toleration of Buddhists, Christians, Confucians, Daoists, and Muslims, and the Qing dynasty in China (1644–1911/12) maintained a general policy of religious toleration toward Jews, Muslims, and Christian missionaries until antiforeign and anti-Christian sentiments led to the expulsion of foreign missionaries from China in 1720. The Muslim Ottoman Turks developed a “millet” system in which



other “religions of the book,” that is, Christianity and Judaism, could be practiced and had some self-rule, albeit with significant discrimination. The Peace of Westphalia (1648) at the end of the European Thirty Years’ War established limited religious tolerance in which believers had time to leave their country and move to one that supported their religious beliefs.

Principled Conceptions of Religious Freedom

In contrast to tolerance or acceptance of religious minorities by the grace of the sovereign, rulers and governments have only occasionally developed a principled basis for protecting the beliefs of others. In most cases, this basis itself has come from the religious beliefs of the ruler. For example, Asoka, the last major emperor in the Mauryan dynasty of India (reigned c. 265–238 or c. 273–232 BCE), adopted Buddhism and then promoted religious tolerance through his “Rock Edicts” based on the Buddhist idea of dharma. Anabaptist preacher Balthasar Hubmaier (1485–1528 CE) argued against the coercion of heretics or nonbelievers and wrote a defense of religious freedom based on the Bible. Roger Williams (c. 1603–1683 CE), the founder of the American colony of Rhode Island, wrote passionately in support of religious freedom and the separation of church and state, both based on his understanding of the Bible. Despite his own strong religious convictions, he opened the colony of Rhode Island to people of all faiths, where they were welcome to freely practice their beliefs. During the Second Vatican Council, the Roman Catholic Church adopted a policy statement, *Dignitatis humanae* (1965), which endorsed religious freedom and the independence of church and state based on religious reasons such as human dignity.

While some thinkers and religious leaders in some traditions still struggle with a principled basis for religious tolerance, modern scholars from all major religious traditions have identified resources within their own traditions that could support a principled belief in religious freedom. Drawing on worldwide legal, philosophical, and religious beliefs, the

Universal Declaration of Human Rights, adopted by the United Nations in 1948, supports the right to “freedom of thought, conscience and religion,” which includes “freedom to change his religion and belief and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship, and observance.” (Stahnke and Martin 1998, 59).

Much of the contemporary strength of the concept of religious freedom as a human right and the role of a secular state, however, comes from the Western tradition. The growth of Christianity in the originally pagan Roman Empire led to a system of “two kingdoms,” where both the emperor and church leaders exerted power over the faithful. The competition for power between the Roman Catholic Church and the Holy Roman Empire escalated in the middle ages under Pope Gregory VII (c. 1020–1085), who forbade the appointment of bishops by kings in 1078. This controversy, referred to as the Investiture Contest, strengthened the power of the church vis-à-vis the state. This contest for power, together with Western Christian notions of an independent duty to obey one’s conscience and natural rights, laid the groundwork for modern conceptions of a limited government and individual rights to religious freedom. Enlightenment scholars, such as John Locke in his famous *Letters on Toleration*, also advocated religious freedom and argued for the limited competence of governments in the field of religion, based on both philosophical and pragmatic reasons. The search for religious freedom was an important factor in the founding of the American colonies and was first embodied in a written constitution in the First Amendment to the U.S. Constitution. While religious freedom has since been enshrined in many national and international legal norms, many governments still significantly limit religious freedom.

Although most modern governments are primarily secular in nature, religion still plays an important role in government and society. For example, religious traditions still often serve as a source of reform and law. Religion traditions and emblems still provide important ceremonial and spiritual influences

Religion is regarded by the common people as true, by the wise as false, and by rulers as useful. • **Seneca the Younger (4 BCE–65 CE)**

in most countries. Unlike the United States, most governments still have formal, institutional ties, often including subsidies and other forms of state cooperation. Religious buildings, social services, or workers may be supported by the state and may serve as a resource in times of national crisis or on public holidays. Even in more separationist governmental systems, such as the United States and France, religious leaders often serve as chaplains in the military, prisons, and hospitals. While individual countries may have particular historical or cultural ties with a single religious tradition, most governments with cooperationist or accommodationist systems allow multiple religions to obtain government benefits and cooperate with the state. Despite the wide variety of current structures of the relationship between religion and governments and the many remaining challenges to religious freedom, a range of accommodationist and cooperationist systems throughout the world still preserve religious freedom.

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See also Religion and War; Religious Freedom

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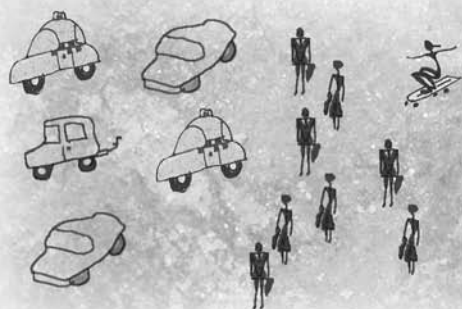
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Religion and War

War and religion are universal historical phenomena, occurring in nearly all places and all time periods. It should not be surprising, then, to find that the two have a long, complex, and varied historical relationship—one which is sometimes antagonistic, at other times mutually supportive, and often deeply ambivalent.

Warrior gods played a central role in the pantheons of many early religions as civilizations struggled to subdue the cosmos and, often, their neighbors. The war god Indra ranks among the most prominent Vedic divinities; the warrior god Marduk is the hero of the Babylonian creation epic, *Enuma Elish*; the war gods Ares and Mars, respectively, populate a host of Greek and Roman myths; and the war god Thor wages battle in ancient Norse mythology. War and religion, for better or worse, have gone hand in hand throughout history.

In many ancient civilizations—including Indo-Aryan, Greek, Egyptian, Babylonian, Hittite, Roman, Aztec, Crow, Norse, and Celtic—war was considered a fact of life and heroes were divinized. Religious epics emerged surrounding the exploits of human (if at times legendary) war heroes such as Arjuna (Hindu), Achilles (Greek), Arthur (Celtic), and Siegfried (Norse). Being a warrior was socially prestigious in cultures such as Indian (where the warrior class, the Kshatriya, ranked high in the Hindu caste system), Crow (where the warrior's raiding activities provided him with access to valued economic goods, most particularly horses), and ancient Babylonian (where male warriors were often rewarded with the society's most desirable female partners). Even great spiritual leaders could, at times, take up the sword

and lead armies (for example, Joshua in Judaism and Muhammad in Islam).

But even in cultures that valued war and warriors, the religious attitude toward them was often one of ambivalence. In the Hindu caste system, the priest (*Brahman*) ranked above the warrior. Holy men enjoyed a similarly elevated social standing in Crow and Babylonian cultures. In Greek mythology, war was as often seen as the source of tragedy as it was of glory. According to the anthropologist C. Scott Littleton, "The role of the warrior... was steeped in paradoxes. He was at once at the apex of the social order and a potential threat to that order. Indeed, the contradiction here, which is reflected throughout Indo-European religious beliefs, is inherent in the profession of arms: it involves a social institution dedicated to the destruction of society" (Littleton 1987, 345).

The histories of many of the major world religious traditions evidence a continuing struggle to come to grips with this paradox. In the process, the phenomenon of war has come to play a major role in defining, distinguishing and, at times, dividing particular religions, while the phenomenon of religion has come to give meaning and inspiration to war.

Judaism: Debating the Warrior Ethic

Judaism was founded in the ancient Middle East where warfare was the norm. The earliest Jewish texts, which probably stem from the mid-to-late second millennium BCE, reflect this violent reality. In Genesis, Yahweh (the ancient Hebrew term for god) is said to have told Abraham: "Know this for certain, that your descendants will be aliens living in a land



Hans Memling, *The Archangel Michael* (c. 1479). Oil on wood. As the “field commander” of God’s Army, Michael figures prominently in the book of Revelation fighting against Satan. Wallace Collection, London.

that is not theirs; they will be slaves, and will be held in oppression there for four hundred years. But I will punish that nation” (Genesis 15:13–24). Yahweh promises the Jews the lands of “the Kenites, Kenizzites, Kadmonites, Hittites, Perizzites, Rephaim, Amorites, Cannanites, Gigrashites, Hivites, and Jebusites” (Genesis 15:19–21). Much of early Jewish history consists of the ensuing, often exceedingly bloody, battles between the Jews and these various peoples. The book of Joshua in the Hebrew Bible records the story of the conquest of Canaan in which, at God’s bidding, the Israelites burn entire enemy cities to the ground, slaughtering all inhabitants—men, women, and children alike. As the biblical scholar Millard Lind writes, “Yahweh is a God of war. . . . Violent political power is thus a central issue in Israel’s experience of Yahweh” (Lind 1980, 24).

Yet existing side-by-side with these violent episodes is a deep-seated Jewish reluctance to embrace the warrior life. Speaking of Abraham, Moses, and other seminal figures in the history of Judaism, the nineteenth century German scholar Julius Wellhausen writes, “It is remarkable that the heroes of Israel . . . show so little taste for war” (Lind 1980, 34). The Jewish hero of the Exodus account, Moses, does not, with a warrior might, destroy the Egyptian army as it pursues the Jews; Yahweh drowns the army with Moses as a bystander. Powerful Jewish kings like David and Solomon are as often chided for hubris as lauded for their might. While Jewish history speaks of nationhood, land, and national destiny, its prophets more often speak of peace: “They shall beat their swords into mattocks and their spears into pruning-knives; nation shall not lift sword against nation nor ever again be trained for war” (Isaiah 2:4).

These two rival attitudes toward war emerge repeatedly in Jewish history. The Maccabean revolt in the middle of the second century BCE pitted Jewish rebels against their Greek oppressors. When the Greeks, led by Antiochus Epiphanes, attempted to stamp out Judaism by forbidding all Jewish practices and desecrating the temple in Jerusalem, the Jews, led by the Maccabaeus family, rebelled, eventually recapturing Jerusalem and reconsecrating the temple



(an event celebrated in the Jewish holiday Hanukkah). While the rebellion was doubtlessly violent in nature—some scholars see it as an early instance of successful guerilla warfare—a number of Jewish historians emphasize the fact that it was a group of nonviolent Jerusalem Jews who brought the ultimate victory. By peaceably withdrawing into the wilderness in response to the Greek actions and taking their tax “dollars” with them, these Jews, it is argued, forced the Greeks to relent and to accept Jewish worship practices in Jerusalem. Jewish scholars also point to the fact that the passage from Zechariah that is traditionally read on the Sabbath of Hannukah declares: “Not by might and not by power but by my spirit, saith the Lord of the Hosts” (Ferguson 1978, 86).

The ambivalence in Judaism concerning participation in warfare and the use of violence continues to this day in the emotional and often divisive Jewish debate over the proper response by the state of Israel to challenges posed by Palestinians and their fight for statehood.

Christianity: Pacifism, Crusades, and Just Wars

The religious ambivalence toward warfare is perhaps nowhere more graphically evidenced than in the history of Christianity, as adherents of the religion have, at different times (and sometimes simultaneously), embraced pacifism, “holy” crusades, and “just” wars (that is, a war limited by strict moral principles).

For the first three centuries following the crucifixion of Christ (c. 30 CE), the Christian church was almost exclusively nonviolent. Founding its actions upon the teachings of Jesus to love the enemy and Jesus’ refusal to take up arms in order to fight the Romans or even to prevent his own arrest and execution, the early church opposed killing and warfare. Whereas the Roman gods were seen as advocates of the Roman people in their battles against foreign foes, the influential Christian Bishop Clement of Alexandria (d. c. 215) writes in the second century, “Divinity now pervades all humankind equally...deifying humanity” (Pagels 1988, 39).

Christianity’s minority status within the powerful Roman Empire—until 312 CE, Christians constituted no more than 10 percent of the population of the Empire and were periodically subjected to savage persecution at the hands of the state—provided an additional (and, some scholars say, more practical and hence decisive) reason for the Christian rejection of war. As the religious scholar Elaine Pagels (1988, 39) writes: “Christians had discovered a terrible secret: the powers behind the Roman magistrates are not gods...but demons, active evil forces bent upon corrupting and destroying human beings.” The state meant death to Christians. As such, Christian complicity in the state, and in the institution of war, was largely rejected and pacifism was embraced. A minority of Christians—including members of most monastic orders, as well as denominations such as the Mennonites—continue to this day to reject all wars.

In 312, Constantine (c. 280–337 CE) became the first Christian leader of the Roman Empire and quickly legalized the practice of Christianity. In 381, Emperor Theodosius (c. 346–395 CE) made Christianity the state religion of the Empire, forbidding the worship of the Roman gods entirely. As Christians for the first time began to ascend to positions of political power, the religion began to consider anew the question of bearing arms. Aurelius Augustine (354–430 CE), the Catholic bishop of the city of Hippo in North Africa who is later canonized as St. Augustine, produced one of the most influential works in the history of Christianity, *City of God*, in which he argued that the state was an instrument provided by a loving God to help keep human sinfulness in check until Christ’s return.

While a kingdom of true and eternal peace will ultimately be established by God, in the interim “the natural order which seeks the peace of mankind ordains that the monarch should have the power of undertaking war if he thinks it advisable, and that the soldiers should perform their military duties in behalf of the peace and safety of the community” (Christopher 1994, 40). Augustine defines “just wars” as those which “avenge injuries...punish wrongs...or restore what has been unjustly taken” (Christopher

1994, 40). Augustine himself would come to advocate Christians participating as both soldiers and military commanders in wars to fend off the attackers of the Roman Empire, even though he acknowledged that grave injustices would inevitably be committed.

The notion of war as an instrument of the Christian God would reach its logical, if bloody, conclusion in the crusades. The crusades were a series of Christian military expeditions prompted by papal declarations and aimed, at least initially, at the recovery of the Holy Land from Muslim control. Initiated by Pope Urban II (c. 1035–1099) at the Council of Clermont in 1095 and extending for several centuries, the crusades promised participants the remission of their sins if they took up the cross and defended the faith. (The Latin word for cross, *crux*, is the root of the word “crusade.”) Tens of thousands of European Christians answered the call. Eventually this “defense” of the faith included attacks not only upon Muslims but upon all alleged enemies of the church, including European Jews and Christian heretics, with perhaps hundreds of thousands of people being brutally slaughtered in the name of Christ. One crusader reports, “Wonderful sights: piles of heads, hands, and feet. It was a just and splendid judgment of God that this place should be filled with the blood of unbelievers” (Baran 1998, 1).

With the end of the crusades, placed variously by scholars between the fourteenth and sixteenth centuries, came the rise of the Christian just-war tradition. Over the course of several centuries, so-called Scholastic authors such as Francisco Suarez (1548–1617) and Hugo Grotius (1583–1645) built upon the foundation established by Augustine and Thomas Aquinas (1225–1274) to develop a set of moral principles which, while allowing Christian warfare, attempted to place strict limits on its conduct—limits which presumably would prevent the barbaric excesses of the crusades. These principles, which would eventually serve as an important impetus for the founding of international law, consist of the *jus ad bellum*—rules which establish the circumstances under which Christians may enter war—and the *jus in bello*—rules covering the ethical conduct of war once it has been

initiated. Central to the *jus in bello*, for instance, is the principle of discrimination, which holds that Christians may kill even noncombatants as long as the deaths are unintentional: “The death of the innocent must not besought for its own sake, but it is an incidental consequence; hence it is not considered as voluntarily inflicted but simply allowed...” (Suarez 1944, 847–848).

In the twenty-first century, although Christians continue to debate various historical attitudes toward warfare, the just-war perspective has come to gain the support of the vast majority of individual Christians and Christian institutions, with *jus ad bellum* criteria such as “just cause” and “last resort” emerging as central aspects of public debate on initiating war.

Islam: War and Tolerance

Islam is often depicted as a religion that not only allows for but embraces warfare. In reality, the history of the religion is complex and surprisingly pluralistic with regard to issues of violence.

The Qur’an at times is clear in its support of the institution of war: “Warfare is ordained for you, though it is hateful to you; but it may happen that you hate a thing which is good for you, and it may happen that you love a thing which is bad for you” (Qur’an 2:216). Such passages combine in Islam with an important historical fact about the prophet Muhammad (571–632 CE): “Muhammad, it will be recalled, was not only a prophet and a teacher, like the founders of other religions; he was also the head of a polity and a community, a ruler and a soldier. Hence his struggle involved the state and its armed forces” (Lewis 1990, 49). In one of the most famous episodes in the founding of Islam, Muhammad flees his native city of Mecca in 622 CE, ridiculed and threatened by the town leaders for his religious teachings. Eight years later, he returns as a conqueror, leading an army of ten thousand into Mecca and converting the city in the process. As John Kelsay (1993, 45), a professor of religion at Florida State University, writes, “At least with respect to the example of Muhammad, then, it was possible to speak of the use of lethal force which

There will be peace on Earth when there is peace among the world religions.

• Hans Küng (b. 1928)

was right, in the sense of divinely sanctioned—even divinely commanded.”

The Abbasid caliphate during the classical period of Islamic civilization (c. 750–1258 CE) established an imperial state based in Baghdad and, employing the principles of divinely sanctioned war, ruled an empire extending from Egypt to Spain. During the Christian crusades, Muslim forces enjoyed a series of decisive victories over the crusaders, keeping much of the Middle East in Muslim control. Thus, although pacifism is found in some forms of Sufism (Islamic mysticism), mainstream Islam historically accepts warfare as a God-given instrument.

This does not mean, though, that war is accepted in Islam as a normal and acceptable condition. Far more of the Qur'an speaks of peace than of war: “The good deed and the evil deed are not alike. Repel the evil deed with one that is better. Then lo! He between whom and thee there was enmity will become a bosom friend” (41:34). Even the concept most often associated with the Islamic support of violence, jihad, literally translates from the Arabic as “striving” and not, as it is often translated, as “holy war.” In traditional Islamic thought, the “greater jihad” represents the striving of Muslims to overcome their own tendencies toward selfishness, hatred, and hubris; it does not mandate the slaughtering of infidels. Muhammad's triumphant return to Mecca is recast accordingly in some Islamic historical sources. In 630 CE, when Muhammad enters the city with his huge army, he asks the Meccan nobles who had threatened his life eight years earlier, “What am I to do with you?” Their leader, Abu Sufyan, replies: “The best.” With that, Muhammad frees all his rivals, in the process converting them to Islam by his generosity. In this strain of Islam, Muhammad rules by justice not fear, war is never initiated by Muslims, but fought defensively and reluctantly, and tolerance is among the highest values.

This moderate vision of Islam has guided much of the religion historically. When the Moors (a Spanish term for Muslim) crossed the Mediterranean to Gibraltar in 711 CE and conquered Spain, they ushered in a seven-hundred-year-long period not of oppression but of cultural flourishing, as Muslim art, architecture,

and ideas were peaceably integrated with those of the indigenous culture. The longest continually existing Christian community in the world exists not in Greece, Italy, or England; it is a Coptic Christian community in Egypt, a land dominated by Islam since 700 CE.

Islam's history with regard to war is thus more varied than many popular contemporary depictions in the West would suggest.

Hinduism: From Kshatriya to Ahimsa

War would seem to hold an unquestioned position of acceptance in Hinduism. The structure of the caste system suggests as much, with the Kshatriya (warrior) constituting one of the four main social classes. While classical Hinduism traditionally holds that all of creation is infused with a spark of the divine and killing is thus not to be taken lightly, the warrior's dharma (duty) to fight is consistently judged to outweigh this consideration. The *Mahabharata*, one of the greatest epic poems in all of world religious literature, examines the dilemma faced by the Kshatriya and concludes: “Since those evil actions belong to the duties of your profession, the penalty of evil karma will not attach to you” (Ferguson 1978, 29). In fact, the entire *Mahabharata* tells the tale of a great multigenerational war between members of the Bharata clan. In its most beloved segment, the *Bhagavad Gita*, the warrior Arjuna debates whether to fulfill his dharma to fight or his dharma to protect life, since the two seem to be incompatible; he is told by Krishna, an avatar of the great god Vishnu, quite directly: “Fight, O Bharata!”

Not surprisingly, then, war is common in the history of Hinduism. Candragupta and his son Samudragupta, two soldier-monarchs and unapologetic conquerors, established the Gupta Empire (320–484 CE), often viewed as the golden age of Hinduism. In the early eleventh century, when the Muslim Mahmud of Ghazna (971–1030 CE) invaded India, Hindus fought fiercely to defend the temple with, according to some accounts, fifty thousand men dying in a single battle. The Rajputs—calling themselves the “sword arm of Hindustan” and the



protectors of the Brahmins —emerged in the ninth century and have fought foreign challengers to Hinduism ever since.

There is a counterstrain in Hinduism, though, found in the Upanishads and other sacred texts. In the Chandogya Upanishad, *ahimsa* (nonharmfulness or non-violence) is seen as a foundational Hindu value, equal in importance to austerity, almsgiving, uprightness, and trustfulness. Mohandas Gandhi (1869–1948), the great spiritual and political leader of twentieth-century India, was the most influential advocate of *ahimsa*. In his teachings, Gandhi attempted to explain classical Hindu works that had for centuries been seen to support the warrior life as in fact embodiments of the principle of nonviolence. The *Mahabharata*, Gandhi argues, ends by depicting not the glory but the futility of war; Krishna in the *Bhagavad Gita* tells Arjuna to fight, but only as a means of illustrating to Arjuna the essential incompatibility of violent acts and the spiritual obligation to remain unattached to the “fruits of action.” Gandhi emerges with an approach to combating evil, which is both grounded in Hinduism and entirely nonviolent. As he writes, “I seek to blunt the edge of the tyrant’s sword, not by putting up against it a sharper-edged weapon, but by disappointing his expectation that I would be offering physical resistance” (Ferguson 1978, 38).

Hence, while Hinduism traditionally preserves a privileged place for the warrior, in recent decades a revisionist interpretation of Hinduism, founded on the rejection of war and violence suggested by Gandhi and others, has become highly influential.

Buddhism: From No Harm to the Warrior Ethic

Buddhism may well be the major religious tradition that has most consistently rejected warfare, but the history of even this religion is far from uniform.

The first of the Five Precepts of Buddhism, incumbent on monks and laity alike, is to not take life nor be a party to its taking. This prohibition applies equally to war, murder, and the killing of animals for food or ritual sacrifice. According to the *Dhammapada*,

“Everyone is afraid of violence; everyone likes life. If one compares oneself with others one would never take life or be involved in the taking of life” (Ferguson 1978, 47). The Buddha, Siddhartha Gautama (c. 566–c. 486 BCE), preached and lived by a code that mandated the causing of no harm, and he attracted many adherents to pacifism, both in his lifetime and beyond. The Maurya emperor Asoka (c. 270–232 BCE) was a military imperialist who, upon converting to Buddhism, established a welfare state, prohibiting all killing. The pervasive effect of the Buddha’s teachings with respect to pacifism can be seen in the harsh words of Yuan Tchen (779–831 CE), who chastises Buddhists for using their religion as an excuse for shirking military duty.

Yet the historical Buddha, born into the Hindu Kshatriya caste, is also regularly depicted as employing martial analogies, even after his awakening to Buddha status. *The Sutra of 42 Sections* records: “A man practicing the Way is like a lone man in combat against ten thousand....[S]ome retreat; some reach battle and die; some are victorious and return to their kingdoms triumphantly” (Sharf 1996, 45). The *Suttanipata* draws a distinction between accidental and intentional killing and, like the principle of discrimination in Christianity, condemns only the latter. In fact, all major strains of Buddhism, including both Theravada and Mahayana, contain important historical instances of support for war. In China during the Tang dynasty (618–907 CE), Buddhist monks were accorded military honors for their actions and, in 619, five thousand of them led a violent uprising that resulted in one monk proclaiming himself emperor with the title of “Mahayana.” In Korea, kings historically recruited thousands of Buddhist monks into the military—to fight the Mongols in the fourteenth century, the Japanese in the sixteenth, and the Manchus in the seventeenth.

After Zen Buddhism was introduced to Japan in 1192, it became the religion of the soldiered aristocracy and contributed to the emergence of the Bushido ideal, the way of the Samurai warrior. In the 1930s and 1940s, a series of Zen masters in Japan used the Zen notion that truth lies beyond reason (and that

there are thus no absolute moral principles) to excuse and even to support military aggression on behalf of Japanese imperialism, with Daiun Sogaku Harada Roshi (1870–1961) declaring, “The unity of Zen and war . . . extends to the farthest reaches of the holy war now underway” (Baran 1998, 1).

Thus, Buddhism, like Christianity, begins historically with a rejection of war and comes, over the course of centuries, to accept and even embrace warfare as an aspect of religious duty.

The Relationship Considered

Does war shape religion or does religion shape war? As the above examples indicate, the answer is almost surely both. Religious beliefs are often adopted and adapted to support political enterprises of various sorts, and warfare is a prominent instance of the political use of religion. But historically, religions have also used warfare as an instrument for their own advance, initiating wars or prompting others to do so on their behalf. While war remains an accepted part of the mainstream components of all the leading world religious traditions, it continues to raise the question pondered by ancient religions: is war the instrument of society’s preservation or the source of its destruction?

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See also Religion and Government; Religious Freedom

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Religion—Overview

Religions are characteristically central in accountings of world history. While many people consider religion private, many are affected by its public presence. Religion supports empires and consoles victims. It inspires war and motivates warriors, but it can also be an agency of peace and the working of justice. The religious may be privileged as supporters of the state or hounded when they dissent.

Moderns have given the name “religion” to the many efforts through which people respond to what they experience or believe in as supernatural or suprahuman forces or beings. Exceptions in the form of purely humanistic religions are few. Most people in most cultures throughout most of history have given evidence that tending to religious matters is basic in their existence, and the energy they give to these has produced artifacts—temples and the like—and events, phenomena with which historians have consistently reckoned.

While religion may be what many modern people have come to call it—a private affair—it always has had a public presence. Individuals may be religious, but most of them form communities and these may collide with each other, attempt to exert power, and often turn out to be useful to civil authorities just as the religious communities find civil authorities useful.

Prehistory and Preliterate Cultures

Prehistoric and preliterate people could not and did not leave behind sacred texts of the sort that inform most study of religion throughout history.

Yet archaeology reveals numberless grave sites whose contents show that the living engaged in ceremonies and left articles suggesting their care for the dead and their concern for their afterlife existence. Some of this evidence in Europe and parts of Asia dates back over 70,000 years. Lacking texts, scholars have to deduce the meanings of the relics, but these demonstrate that religion is a constant and profound dimension of human life, so much so that many neuroscientists hypothesize that humans are “hard-wired” to seek meaning through rites and ceremonies, myths and symbols, ideas and behaviors, that they associate with the word religion.

One of the most common and, to those who uncover the altars and bones, most unsettling set of practices, has to do with human sacrifice. Castes of people, usually priests, were assigned the task of pleasing deities, for example the gods of fertility or weather or war, by offering their fellows or their captives on altars. Especially when such killing occurred in northern climates, as in Scandinavia, some corpses were so well preserved that scholars can deduce much about the way of life of the sacrificed and the sacrificers. While human sacrifice has virtually disappeared in modern times, it was long a factor in societies. In Aztec cultures in South America just before Europeans arrived and conquered them, thousands of their people had been ceremoniously sacrificed. In many ancient religions animals were substituted for people by those who wanted to win the favor of their deities. Bloodless sacrificial offerings, for example, gifts of money, remain favored ways of being religious into our own times.

Not only beginnings and ends, birth and death, fertility and burial rites occupied the religious. From



The Dome of the Rock in Jerusalem is located on a site sacred to Islam (as the spot where Muhammad ascended to heaven), Judaism (as the place Abraham prepared to sacrifice his son Isaac), and Christianity (as the place during the Byzantine Empire where Constantine's mother had a small church built).

observing how great stones were placed, as in Stonehenge in England or throughout Maya and Aztec cultures in Central and South America, scholars deduce that people observed the heavens for signs of divine will. They paid attention to the seasons of the year and the movement of sun and moon and stars, calculating some of their bearings from these. Many ancients worshiped sun-gods or moon-gods. Such observance has lived on in moderated ways within literate cultures, where Judaism, Christianity, and Islam, among others, thrived. Their sacred texts prescribed certain ceremonial days in the light of the phases of the moon.

Just as they looked up to the heavens, these religious folks also looked backward and ahead, as their texts reveal: they wanted to account for how the world

came into being and what its future, often a future ending in destruction, would be. Their stylized stories of beginnings (myths of origin) provided guidance for daily living. Their altars and relics also signal that they were concerned about weather and the gods or forces that control it, since it had so much impact on their survival and possible prosperity. They danced, prayed, and made offerings to deities associated with agriculture and hunting.

The Rise of “World Religions”

Knowledge of what religion meant in ancient lives becomes more sure when historians can deal with texts in which priests and scribes recorded their presumed transactions with the divine or in which they prescribed ceremonies. Many of those have left rich heritages where they appeared around the Mediterranean Sea and especially in the Middle East. In the fifth century BCE Athens was a bustling city, whose architects produced temples such as the Parthenon, where the statue of Athena by Phidias dominated. Readers of the literature of ancient Greece become familiar with large companies of gods, whom citizens always tried to understand, often to pacify, and sometimes to emulate.

While a thousand years before that, around 1500 BCE, Chinese peoples gave signs that they were preoccupied with the sacred, it was with the birth of Confucius in 551 BCE that texts appeared which provide access to the spiritual world of China. Whether Confucius should be thought of as a religious founder or a philosopher is a point of debate, but students of Chinese religion characteristically study his writings. These became influential in China and have remained so thousands of years later. He taught followers to be humble and generous, respectful of their ancestors, and devoted to civic life.

Even before Confucius died, China saw the emergence of another philosophy, a this-worldly faith, Daoism, which paid little attention to a life to come, as most other religions have done. Attractive especially to poor farmers, to peasant classes, it taught reverence for the natural world, the landscape, in the



face of which people were to learn to be serene but never weak.

More vital and influential through the centuries have been religions that emerged in the subcontinent of Asia, especially in India. Less interested in science and invention than the Chinese, Indians can be said to have specialized in responses to the sacred. Settlers of Indo-European background planted the roots of Hinduism, a faith that called for respect, even awe, for priests and holy people called Brahmins. It is hard to grasp an essence of Hinduism, so diverse are the shoots and so manifold are the sacred writings that grew from those roots. It called for worship of many gods including one above the others, Brahma. A core belief of Hindus was that all living beings possessed an inner soul, one that outlasted the body but would then transmigrate to a new body. That belief led to regard for cows as sacred. But Hinduism is not only a set of beliefs: it stipulates complex practices, many of them related to the belief in transmigration.

Just as Daoism coexisted with and challenged Confucianism in China, so Buddhism emerged to rival Hinduism in India. In the case of this philosophy and religion it is possible to point to a single founder, Siddhartha Gautama (566–486 BCE), son of a prince from Nepal. Sheltered in childhood and assured a life of leisure and reasonable luxury, he left behind the way of life these permitted and rode off seeking enlightenment and salvation. Indeed, he did experience such, and became known as “The Enlightened,” the Buddha. His journey led him and his followers to self-denial and the pursuit of sanctity. While Hinduism fostered a caste system in which the poor were destined to remain poor and the rich to enjoy riches, Buddhism was more spiritually democratic. But the wealthy were also attracted, and many of them contributed to the building of monasteries that were attractive to the most rigorous followers. Buddhist monasteries sprang up in city after city along the holy Ganges River.

Buddhism entered world history and was assured of a future when Asoka, a king of India, gained power and prestige often by the use of the sword but also

with building and humanitarian concerns, around 265 BCE. Through his spreading empire Buddhism prospered, while Asoka built hospitals and educational centers to give it practical effect among the people he dominated. Hinduism, after early prosperity, languished but was periodically revived. Buddhists meanwhile spread their self-disciplined ways of life into China and Japan, eventual and virtual home bases for one of what came to be called “the world religions.”

Developments Called “Greco-Roman,” Jewish, and Christian

Greek and Roman cultures survived in the centuries of great cultural productivity. Philosopher Karl Jaspers spoke of the centuries between 700 BCE to 200 BCE as an “axial period,” a time of religious formation and creativity, and these dates are commonly accepted. This is often marked in Greek drama and Roman poetry as well as in the records of statecraft. While honor was shown the old Greek gods in the course of developments associated with Rome in the fourth century BCE, the Roman rulers increasingly came to be treated as divine agents worthy of worship. They, in turn, invoked some of the gods, offering them sacrifice of animals. Culturally open to other influences, they also welcomed Isis, the mother-god from Egypt, who ruled the universe, and Mithras, the sun-god from Persia. Much more complex was the arrival of Jews from Palestine and, from within their Judaism, a new sect that the Romans soon learned to name “Christian.”

The Roman Republic came to be the Roman Empire in the centuries in which Judaism and Christianity came to be a presence. Together these two also became “world religions,” dynamic inheritances from a five-hundred-year period in world history that saw special creativity and devotion. Webbed at the beginning and conflicted by the end of the first century CE, Judaism and Christianity also demand separate treatment by scholars of religion.

Hebrew people—their name refers to their having wandered—told themselves that they were people who came from slavery in Egypt. They had

To one who has faith, no explanation is necessary. To one without faith, no explanation is possible. • **Saint. Thomas Aquinas (1225–1274)**

seen glories, beginning with their conquest of many small ethnic groups in Palestine, and kingship beginning around 1000 BCE. They revered the memory of charismatic rulers such as David, who captured his capital city of Jerusalem, and then his son Solomon, a temple-builder there. The temple-goers and their priests and scribes recounted and lived by stories of their freedom from slavery, their wandering in a wilderness, and their conquest in Canaan, on the soil of Palestine.

Among their stories, one that inspired much of their moral concern and many of their religious rites was one about Moses, a leader who helped free them from slavery, often with apparently miraculous means. Among these was one that had to do with the deity they called Yahweh, revealed through ten “utterances” that came to be called the Ten Commandments. Followers of these commandments, in northern and southern kingdoms (the latter being called Judea, hence “Jewish”), considered to be the special chosen people of God, forbade the making of divine images. They often revered lesser gods whom they considered anti-Yahweh, but to whom they were frequently attracted. Their attraction quickened criticism by prophets, mainly in the eighth century BCE. These were men in a special calling that directed them to judge errant people and promise divine assurance to the righteous. God held Jews to an especially high standard, and, as they interpreted it, let them prosper or meet disaster, depending upon how well they kept divine laws, especially the Ten Commandments.

While most Jews, freed from captivity in Babylon after 586 BCE, lived in Palestine, they also saw the creation of the Diaspora, a dispersal of peoples, and they were strategically placed in much of what had become the Roman Empire. They built synagogues and worshiped in relative freedom so long as they did not give the rulers any troubles. It was Christianity, one of Judaism’s offspring, originally a Jewish sect, that did give trouble and receive it.

This faith centered in a rabbi of Nazareth, Jesus, in the course of time believed by most of his followers to have been born of a virgin, Mary of Nazareth, who had been impregnated by the Holy Spirit, and without

a human father. He was one of many latter-day prophets, such as John the Baptist, who influenced his mission. In the sacred writings called the Gospels, which became part of a “New Testament,” this Jesus was portrayed as a wonder-worker whose main task was healing and preaching the imminence of God’s kingdom. Exactly what that meant depended upon who was writing about it or interpreting the writings, but it had to do with divine sovereignty exercised in “saving” people from their sins.

With Israel chafing under resented Roman rule, however, many wanted saving from the Romans. The Gospels picture Jesus teaching his disciples that he was to be executed. Meanwhile, a growing number of enemies among religious authorities targeted him for execution. The Gospels portray him as knowing that this form of execution, crucifixion, was to be his destiny, his means of saving people. In such portrayals his death was a sacrifice pleasing to the one he called Father. In the experience and belief of his followers, he was resurrected, raised from the dead, and after making appearances among them for forty days, ascended into heaven, thence to rule.

In the eyes of Greeks and Romans the sect that followed this resurrected one, called Christians, could have survived as one more strange movement. However, while some of them served in the Roman army and paid taxes, they refused to give signals of worship that would show they regarded the ruler, Caesar, as divine. Forty years after Jesus’ death, around 70 CE, conflicts between these Christians and other Jews led to schism and growing enmity. More important for survival, however, was the attitude of Roman rulers and other elites, who scorned them and saw them as subversive. Before the year 70, persecution of Christians had begun in Jerusalem, Rome, and outposts along the way this fast-spreading faith was developing.

Divided Christendom and the Rise of Islam

In the course of three centuries as Rome declined, one of its emperors, Constantine, for a mixture of reasons, became a believer and directed his empire on a course

that led Christianity by the end of the fourth century CE to be the official religion of Rome. The persecuted now became the persecutors in many instances. Christianity was official, legally established, and was to remain so for a millennium and more. When as the eastern half gained power and influence and Rome divided, the Christian movement also progressively divided, with headquarters in Rome and in Constantinople, Constantine's power became based in what is today's Turkey. The Christian story, including the account of the development of its creeds, doctrines, and practices, henceforth had western and eastern versions, and these split permanently in 1054 CE.

If Christianity sprang out of Judaism, still another world religion, second in size only to Christianity, developed out of and then over against those two. It developed in the small cities of the Arabian Peninsula, where Muhammad was born around 570 CE. Christians and Jews lived there, but old religions considered to be pagan thrived in the interior, where at Mecca, Muhammad's birthplace, people revered and made pilgrimages to a great black meteorite in a shrine they called Kaaba. In that city Muhammad experienced a profound religious revelation and claimed that he was recording the direct utterances of God, Allah, in the sacred book that became the Qur'an. Islam means "submission," and the religion that issued from the prophet Muhammad's revelation and transcription, stressing obedience to Allah, prescribed precise and simple ways in which one pursued Islamic faithfulness.

While the Qur'an included many passages advocating tolerance and peace, the text also included militant themes and the prophet's career included military ventures. The Arabian Peninsula, always dry, in the early years of the sixth century was experiencing drought, and many desperate Arabs joined Muhammad's conquering armies. By 635, Damascus in Syria fell, followed the year later by Jerusalem. The armies invaded Egypt and captured Alexandria in 641. Everywhere the victorious Muslims won converts and built mosques. Many of these moves were threatening and even devastating to Christians, who met defeat in northern Africa and parts of Europe, including Spain. There Muslims developed a sophisticated civilization,



A highly decorated Hindu processional cart in India.
Photo by Klaus Klostermaier.

which it shared with Jews and Christians until 1492. Constantinople had fallen in 1453, and for much of the next century the Ottoman Turks spread Islam while assaulting Europe all the way into Hungary. The Christians earlier gained some selective victories as they tried to win back the holy places of Palestine in a series of bloody crusades, but outside Europe itself Islam held its own and became a permanent challenger.

Religious Expansion and Division

Meanwhile, for a thousand years Buddhists were on the move. They came from India into many parts of China, just as they had expanded into Sri Lanka. Mahayana, a new form of Buddhism, developed in northern India. It was a more aggressive and proselytizing faith than the passive Buddhism of earlier years. Shrines and giant statues of Buddha marked the path of their progress. Emperor Shomu in Japan embraced Buddhism in 737. Spared in an epidemic, he credited



This small Catholic chapel in New Mexico, El Santoria de Chimayo, was built by Spanish settlers and now is a pilgrimage site for people seeking cures.

Buddha and erected the Great Buddha at Nara. Like Christianity and Islam, Buddhism spread not only with armies but also through energetic missionaries and proselytizers. Each left in its trail and on its soil great houses of worship and thousands of smaller ones, places for pilgrimage and devotion, libraries for the encouragement of learning and piety—in short: civilizations.

While Western Catholic Christianity that was centered in Rome dominated Europe, with the Muslim present in the West, in Spain, and threatening in the East toward Vienna, and with Jews surviving as an often sequestered minority, one church system set the terms for religious and much of civil life. The Catholic Church was in position to enforce loyalty and persecute dissenters. The head of Catholicism, the pope, could not only field an army but also demand and frequently gain obedience from monarchs whose people

would be denied access to heaven if their rulers did not acquiesce to Rome.

It was in that context that all over Europe restless reformers began to question the Catholic system and to subvert it. Their main instrument was the preached and taught Bible, a book of divine revelation that became available in the fifteenth century CE as Johannes Gutenberg's invention of movable type and new presses helped ordinary people gain access to it and its message. In German-speaking Saxony a monk, Martin Luther, after 1517 preached a gospel of liberation and came to storm the official church, which hounded him in turn. Joined by Swiss and other reforming scholars and with support of some princes in the Holy Roman Empire (much of today's Germany) and elsewhere, these questioners undercut the teachings and much of the edifice of Catholicism, though it continued to dominate in most of Europe. But as the new movements called Protestant after 1529 made their way, often in alliance with the state in Germany, England, Scandinavia, the Lowlands, and elsewhere, they helped assure that Europe would be divided religiously. This became doubly evident as Protestants themselves were divided, in no position to be attracted back to Rome as a unit or to be destroyed as one.

When the Western Hemisphere became a subject of knowledge in Europe, Catholic Christianity prevailed in the central and southern Americas. Meanwhile, Dutch, Swedish, and especially English churches had turned Protestant. Merchants and explorers from these countries dominated in that part of America that became the United States, as well as in all of Canada but Quebec.

Renaissance, Enlightenment, and Secularism

While the faith was spreading, Christianity and to a lesser extent all religions in the sixteenth century began to face fresh challenges from propagators of a new approach to the world. Sometimes it was called the Renaissance, because it involved a recovery in the thought world of the glories of Greece and Rome, just

The god of the cannibals will be a cannibal, of the crusaders a crusader, and of the merchants a merchant. • **Ralph Waldo Emerson (1803–1882)**

as it celebrated their arts and sciences. Sometimes the change came in what was called the Enlightenment. This was a movement in northwest Europe, one that celebrated reason, progress, and science, often at the expense of faith.

In Renaissance times some challengers such as Copernicus and Galileo, who presented new views of the physical universe, were harassed, the latter condemned by the pope. Sometimes they won converts from enlightened church leaders who fused rationalist or scientific thought with their faith and church. But in any case, the modern world saw an increase in tension between believers and nonbelievers. The emergent worldview of the latter came to be called “secular,” from the Latin word *saeculum*. The implication or even overt claim was that whether or not God existed, one could live out a full life interpreting and changing the world without recourse to God, sacred texts, religious institutions, and the like.

In the nineteenth century, on the soil of secularism, there arose more pitiless and belligerent rivals to Judaism, Christianity, Islam, Buddhism, and Hinduism. Most of the twentieth-century forms ended in -ism: Fascism, Communism, Nazism, Maoism were typical. Many of these took on the trappings of the religions they set out to replace. They called for the sacrifice of millions of lives in war, and they took other lives. They generated myths of leadership and symbols such as the swastika, the hammer and sickle, and the star to rally or subjugate people. They invented ceremonies and rituals. In due course their creations imploded and they waned, while in most cases the religions they had set out to abolish returned and often prevailed in various areas.

Religious Survival and Revival

In the twenty-first century, religion without doubt plays as large a role as it had centuries earlier, despite many predictions that modernity, secularity, and science would sweep it away. The old heartland of Christianity, western Europe, did not experience the growth in the number of religious adherents, though

Christianity in its various forms survived there. Yet nearly 2 billion people around the world were numbered as Christian in 2009, about one billion of them Roman Catholic. Notably prosperous were new Christian movements, especially Pentecostalism, in the southern world, especially sub-Saharan Africa. Meanwhile Islam advanced by population growth, efforts to convert, and development of philosophies and movements attractive to many among the world's poor. Hinduism was also among the advancing religions.

Religion came wearing many guises. In a vast generalization that needs many qualifiers, it could be said that in the world of today, more people are being healed *and* more are being killed in the name of religion than of any other force. Healing here would mean not only physical and personal spiritual healing, but reconciliation, concord, works of justice and mercy. Killing here need not always mean literal murder; it could imply anything negative related to persons, including oppression, repression, suppression. But it can point directly to killing, since armies move against each other, or terrorists act in the name of their gods. Efforts at reconciling the religious do occur, and many people of good will in many cultures initiate and promote movements of interfaith dialogue and common action. These are dwarfed, however, by the massive, convulsive moments of tribe against tribe, people against people, and often nation against nation on the basis of mixed motives, but many of them being religious.

Religion in the Contemporary World

Any assessment of the role of religion has to begin with the place it plays in the life of individuals. This is as true in Jainism, Sikhism, Shinto, Babism, and other significant movements that one will find in atlases and encyclopedias of religion or in open encounters around the world. Historical change came because of Buddha realizing enlightenment, Jesus teaching and dying, monks like Francis of Assisi, Jewish scholars like Maimonides, and reformers like Martin Luther experiencing fire in their soul, acquiring a mission,



and then spreading their message and changing the world. But there would be no religious movements were there not also stirrings and hungers in individual souls, and at least partial and often wholly enthusiastic responses to God or the gods.

At the other extreme, religions have to be appraised as mass movements. Millions of Muslims make pilgrimages to Kaaba in Mecca, as Christians went on crusades; they form armies in support of kings who they think rule by divine right, or they stimulate revivals, awakenings, and renewal movements. They can be attached to movements already existing: often nations are ready to war against nations, but they mobilize when they are convinced that God or the good is on their side, and that enemies of God—Satan, if you will, among others—are on the other side.

Religions often undertake revolutionary missions. While their main function may be conservative, urging respect as they often do for the wisdom and achievements of sacred ancestors and offering ballast and sanity in times of disturbance, they may also take it to be their mission to upset the world. Thus the Hebrew prophets of the eighth century BCE, acting on the basis of a covenant they claimed God had with Israel that was now being forgotten, called the people to repent, change their ways, and do works of justice and mercy. They may form resistance movements against modern dictators, or provide conscience for individuals who need courage and divine authorization. So religions make history both in their integrating roles and when they are prophetic and disruptive. Since they deal with invisibles, with soul and spirit and unseen forces, they may not be as easy to track and chronicle as are wars, earthquakes, famines, or catastrophes, but they do as much as such phenomena to alter the human landscape through history and into the present.

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See also Buddhism; Christian Orthodoxy; Daoism; Hinduism; Islam; Judaism; Roman Catholicism

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Religious Freedom

Religious freedom did not emerge in world history as a widely accepted idea until the modern era. Governments generally mandated religious belief on the assumption that a common religion is essential to social stability. This assumption has not died easily, and still prevails in some areas of the world. Nevertheless, religious freedom has now become an almost universally accepted norm, backed by international law and the constitutions of most nations.

Religious freedom can be defined as the liberty, guaranteed by a state authority to its people, to believe (in matters concerning religion) that which is dictated by conscience, including no belief at all. The concept is relatively new in world history because governments since the earliest times adopted religions as a means of fostering stable and unified societies.

Ancient Societies

In ancient societies there was no differentiation between the religious and the secular. All of life was religious, and state authority generally assumed the role of moral agent and mandated religious belief to further its own ends. Ancient Mesopotamia, Egypt, and Greece were polytheistic cultures in which civil authorities were also considered either priests or gods themselves, and the religious life of subjects was closely regulated. As popular new religions emerged, state machinery frequently adopted these religions as a basis of unity for society. Thus Hinduism in India, Buddhism in Thailand, Shintoism in Japan, Confucianism and Daoism in China, Judaism in Israel, and

Islam in the Middle East all influenced law and public policy and still retain today a status as formal or semiformal state religions. In these settings, freedom and religion have not been natural allies. The brave heretic who has pursued religious ideas outside those of official sanctions has frequently been persecuted or even executed.

The Union of Church and State in Medieval Europe

This pattern of persecuting heretics persisted in the early Roman Empire. Under emperors such as Nero, Trajan, Decius, Valerian, and Diocletian, Christians were sometimes executed for violating the mandatory worship requirements of the empire. But Christianity continued to grow, and by the fourth century claimed as much as 10 percent of the Roman population. The persecutions against the Christians ended, however, only when Constantine became the first emperor to become a Christian. He was instrumental in the passage of the Edict of Milan in 313, a document of landmark proportions in the history of religious freedom. It provided “that liberty of worship shall not be denied to any, but that the mind and will of every individual shall be free to manage divine affairs according to his own choice” (Pfeffer 1967, 13). The edict elevated Christianity to a status equal to that of other religions in the empire, although within a decade Constantine altered laws to give legal preference to Christianity. The Roman state built great Christian edifices, instituted Christian holidays, granted exemptions from taxation to Christian clergy, and persecuted adherents of “heathen” religions. The persecuted had become the persecutor. In 380, under Emperor Theodosius,



In an act of defiance, John Endicott, a follower of Roger Williams and passionate supporter of religious freedom in colonial New England, cuts the cross from the King's banner.

Christianity was officially enshrined as the state religion of the empire.

The Christian state became the model for all of Europe during the Middle Ages. The Orthodox Church became the established religion over much of the Eastern Roman Empire, including Greece and Russia; Catholicism prevailed in the West. The goal of the church–state partnership was the glory of God and the salvation of man. Any impediments to this goal were dealt with harshly. Thus by the thirteenth century, Western authorities devised a formal Inquisition by which heretics would be systematically sought out and, if deemed beyond rehabilitation, executed. Between 1231, when the Inquisition was formally instituted by Pope Gregory IX, until 1834, when the Spanish Inquisition was finally abolished, tens of thousands of heretics were burned at the stake because their faith did not match the officially approved Christian doctrines. Religious freedom, obviously, was not part of the medieval vocabulary.

Occasionally there emerged, however, from within the Christian Church, voices in behalf of religious freedom. Tertullian, Justin Martyr, Hilary of Poitiers, Chrysostom, and Augustine, among others, pleaded the cause of toleration and condemned punishment of heresy. In the early third century, for example, the lawyer-cleric Tertullian wrote, “it is a fundamental human right, a privilege of nature, that every man should worship according to his own convictions. One man’s religion neither helps nor harms another man” (Pfeffer 1967, 15). In the late fourth century,

Augustine similarly defended toleration of unorthodox religious views. Later, however, when members of the Donatist sect engaged in acts of civil disobedience, he apparently changed his view and opined that compulsion was benevolent, “for what is a worse killer of the soul than freedom to err” (Pfeffer 1967, 16). Due to the weighty influence of the brilliant Augustine, one scholar had articulated what has become an accepted estimation of him. Because of Augustine, he wrote, “the Medieval Church was intolerant, was the source and author of persecution, justified and defended the most violent measures which could be taken against those who differed from it” (Pfeffer 1967, 16). Some have said that Augustine’s views became the “charter for the Inquisition.”

The Crusades

Equally out of step with the spirit of religious freedom were the crusades of the eleventh, twelfth, and thirteenth centuries. The purpose of the seven crusades, initiated by Pope Urban II in 1095, was to recapture the Holy Land that had been lost to the Muslims and to extend the rule of Christianity in the “land of Christ.” The motto of the crusades became “Kill the infidels.” In carrying out the slaughter of tens of thousands of Muslims, the crusaders availed themselves of the opportunity to root out Jewish and Orthodox infidels as well. The popular Peter of Cluny asked, “Why wait for the infidels in the Holy Land? We have infidels here—the Jews” (Wood 1966, 9). It



A plaque mounted on the wall of a Protestant church in Provence, France, recounts the Protestant fight for religious rights in this mainly Roman Catholic region.

has been estimated that in the First Crusade alone thousands of Jews across Europe were massacred. Pope Innocent III, perhaps the greatest exemplar of militant Christianity, launched the Fourth Crusade in 1202. While en route to the Holy Land, his army of twenty thousand crusaders sacked and destroyed the great Orthodox city of Constantinople, slaughtering thousands of citizens, burning much of the city, and destroying more of the city's great religious treasures than were lost when the Turks later bludgeoned and captured the city in 1453.

Religious Intolerance during the Reformation

The Roman Catholic Inquisition of the fifteenth and sixteenth centuries unleashed fresh attacks against a rising number of Protestants. Protestants in turn persecuted Catholics as well as competing Protestants. Contrary to popular belief, the

Protestant Reformation did not usher in a new era of religious freedom. In fact, the rise of Protestantism witnessed a fresh outbreak of religious intolerance. Protestants were vigorous in winning converts from Catholicism, but they were often as vicious in their persecution of Catholic and Protestant heretics as Catholics had been against them. The leading lights of the Reformation, Martin Luther and John Calvin, were never reluctant to exterminate their own adversaries. Luther frequently recommended to the Duke of Saxony the execution of Catholic, Jewish, and Anabaptist heretics. Calvin himself prescribed the execution of numerous heretics, including the Unitarian Michael Servetus at Geneva in 1553. Calvin's contemporary and Protestant scholar Sebastian Costello probably had it right when he wrote of Calvin, "If Calvin ever wrote anything in favor of religious liberty, it was a typographical error" (Wood 1966, 11).

The spread of new religious ideas across Europe during the Reformation led to a series of religious wars that was finally curtailed only by the Peace of Westphalia settlement of 1648. By then, it was apparent to many that religious tolerance was essential, lest everyone in Europe die of heresy. A healthy spirit of tolerance appeared in many dissenting groups, most notably the Socinians, Anabaptists, Diggers, Quakers, Politiques, and Baptists. These groups, all of whom experienced acute degrees of religious intolerance, were far apart on theological matters but united in their advocacy of religious freedom.

The growth of religious tolerance was not merely a matter of expediency, however. Seminal thinkers such as Hugo Grotius, Henry Parker, Thomas Hobbes, John Locke, Jean-Jacques Rousseau, Sidney Algernon, John Milton, Erasmus, Voltaire, Thomas More, and Dirck Coornhert all protested the mania of the times—"hereticide"—and took up their pens to propose new political and theological bases for religious freedom. Locke in particular was instrumental in proposing the notion of the secular state, which removed jurisdiction over religious matters from civil authority, thereby protecting each



This drawing depicts the massacre of Mormons at their camp at Haughn's Mill, Illinois, in 1838. The Mormons were subjected to nearly seventy years of government-backed oppression in the 1800s.

individual from state-mandated religious conformity. He articulated a theory of natural rights that placed fundamental rights of life, liberty (including religious freedom), and property beyond the reach of government.

Religious Freedom in America and Elsewhere

These ideas took root as nowhere else in America. Roger Williams, who founded the colony of Rhode Island, fought an ideological war against theocratic traditionalists in Puritan New England. Williams set up a secular state and welcomed to his colony settlers of every religious persuasion, requiring only that they conform to standards of good citizenship. His policies led Puritans and others to refer to Rhode Island as “that sewer,” but his ideas eventually found their way into the U.S. Constitution in the late eighteenth century.

The new Constitution and its Bill of Rights guaranteed religious freedom and ensured it with an establishment clause that prevents government from establishing any religion or even from preferring

some religions over others. The United States was the first nation in human history to formally adopt the principle of the separation of church and state as a fundamental element of its public philosophy. It was a noble experiment in the founding era and remains so today. The experiment was undertaken by the framers in the hope that it would enable America to escape the persecutions and religious wars that had characterized the Christian West for almost two millennia. Due to the success of this formula in America, other nations have since adopted the idea of church-state separation as a guarantor of religious freedom, and today, approximately one-half of the nations of the world make formal guarantees of church-state separation in their constitutions.

Internationalization of Religious Freedom

The twentieth century witnessed unprecedented progress toward the internationalization of religious freedom. Of the three major international documents that universalized the principle of religious freedom



in the twentieth century, by far the most central is the Universal Declaration of Human Rights, passed by the United Nations in 1948. This landmark document declares that “Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance” (Claude and Weston 1992, 421).

The declaration embraces modernity’s political principle that one of human government’s main roles is to protect people’s religious choices, not to mandate religious conformity. It took centuries, even millennia, of religious wars and government-perpetrated religious persecution for the majority of modern nation-states to come to this position, but the principle is now widely accepted, especially in the West, and its near universal recognition in the 1948 declaration is undoubtedly a human milestone.

Whereas the declaration imposed a *moral* obligation upon all signatory nations, later documents went further in creating a *legal* obligation to comply with its broad principles. The International Covenant on Civil and Political Rights (1966), ratified already by approximately 150 nations, prohibits religious discrimination “without distinction of any kind, such as race, colour, sex, language, political or other opinion, national or social origin, property, birth or other status” (Claude and Weston 1992, 432). Moreover, the 1966 covenant provides a broad definition of religion that encompasses both theistic and nontheistic religions as well as rare and virtually unknown faiths. The covenant is especially important because its provisions are mandatory for the states that have ratified it.

Finally, the United Nations Declaration on the Elimination of All Forms of Intolerance and of Discrimination Based on Religious Belief, enacted in 1981, is a fundamentally important document protecting religious rights. The declaration includes the most comprehensive list of rights to freedom of thought, conscience, and religion enumerated in any international instrument.

Human civilization has achieved much over the last three thousand years in making religious freedom a fundamental human right. Much remains to be done, however, to make religious freedom a reality for all peoples of the world. There is no more important project to be undertaken by the human community now and in the future.

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See also Religion and Government; Religion and War; Secularism

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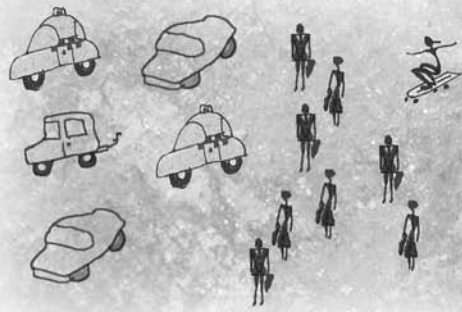
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Religious Fundamentalism

Lexicographers in the 1920s narrowly defined fundamentalism to describe movements in American Protestant denominations that were devoted to biblical literalism. The term has been widely applied in a broader sense (often contentiously) to other religious movements or sects worldwide. Some scholars see the term as stigmatizing or unfairly lumping groups together, while others recognize its value as a “genus” that can foster comparative analyses among groups it comprises.

Religious fundamentalism, often confused with conservatism or traditionalism, is a name for a movement in any religion that retrieves “fundamental” elements of that religion and projects them into new formulations in reaction to challenges from modernity, however that is defined. This reaction may lead to protective withdrawal by groups in some cases, at least in early stages. In practice, however, leaders of such movements attract followers to engage in militant action against whatever it is they regard as a profanation or whatever stands in the way of their battles for their God. Since fundamentalisms appear in Protestant Christianity, Judaism, Hinduism, and Islam, they can be seen as both local and global assaults on both secular and settled religious orders, be they conservative or liberal.

Problems with the Word “Fundamentalism”

Scholars agree that the first use of the term occurred in American Protestantism early in the twentieth

century. Some question, therefore, whether the word might fairly, and without causing confusion, be used to characterize forces in other religions. On the side of the critics are factors such as these: it seems unfair and perhaps imperial to borrow from an American domestic movement a term to impose on other religious movements that draw on vastly different sources. Second, the term is often seen as pejorative, stigmatizing. In addition to that, it does not always have a cognate term in the languages identified with other religions. Fourth, it may license comparisons that unfairly lump together disparate movements that lose their identity when so classified.

Over against these, defenders of the usage recognize that the term is simply established, in textbooks and media, in statecraft and scholarship, and argue that efforts are better aimed at clarifying the term than trying to abolish it. In addition, they point out that similar categories of words travel from language to language, situation to situation. Words like colonialism, revolution, conservatism, nationalism, and others are all “born” somewhere in the West and travel to other settings and languages. Third, fundamentalism is a genus, and scholars or communicators can clarify issues by pointing to species: the Islamic fundamentalism of the Wahhabi movement might have formal congruence with the Jewish fundamentalism of Gush Emunim or a party of Protestants in Northern Ireland, but the content of their claims differs vastly. Finally, no other term has come forward to foster comparative analysis. Thus “Islamist” works only for Islamic movements. And comparisons are valuable, since only by isolating them do certain features stand out.

Features of the Fundamentalist Movements

The word “fundamentalism,” in religious contexts at least, is not to be found in any dictionaries published before the 1920s. When Baptist Protestants in the United States during intradenominational struggles in the early 1920s coined it, and when Presbyterians took it up, lexicographers had to take note of it and defined it as a Protestant movement devoted to biblical literalism. What they may not have noticed is that in the same decades such movements were developing in India in what have become major political parties, or in Egypt under the Muslim Brotherhood, from which fundamentalisms spread to Saudi Arabia, Iran, and the larger Islamic world.

World historians have it as their mission to account for the long record of movements, and ask about the distant origins of fundamentalism. But students of the movements will find that they rose as reactions to modernity, again “however defined.” Definitions may, for instance, take into account critical assaults on sacred canons, such as the Bible or the Qur’an. When conservatives perceive these as assaults from within their religious camp, they feel they must react and respond. Thus Muslim fundamentalists from the 1920s to the 1990s almost always directed their fire to what they perceived, not always inaccurately, to be corrupt and repressive but only nominally Muslim governments. American Protestant fundamentalists did not have the old enemy of Protestantism, Catholicism, as an object of attack so much as rival groups that were religiously “closer to home.” They attacked their fellow Presbyterians or Baptists for treason to their own cause. The critical movements that inspired the responses developed just before the twentieth century or early in it, so one could not have located and defined fundamentalism without this modern assault.

Just as often, the reactive response may be against perceived threats to one’s domain. Thus “Westerners” as “infidels” were seen to be subverting Iran in the 1970s, thus evoking purifying countermovements by the followers of the Shi’a Ayatollah Khomeini.

Fundamentalists in the United States felt called to oppose liberal Protestants allied with secular humanists and others who were critical of cherished practices such as issuing prayers in public schools while these critics provided theological justifications for disapproving moral expressions, for example, the legalizing of abortions. In Israel, if there seemed to be even a trace of conciliation by peace-seeking governmental administrations, movements like Gush Emunim (Bloc of the Faithful) organized, demonstrated, and built not-yet-approved settlements on the West Bank.

To pursue their aggressive missions in the name of God, fundamentalist movements must build at least figurative boundaries around their movements. They may not keep outsiders or compromisers at a physical distance, as sectarians were able to do before the rise of mass media, mass higher education, and global commerce. But they can develop their own media of communication, their own separatist institutions, their own sets of stigmas with which to label the moderates or other deviators. In media especially, their difference from conservatives or traditionalists is most apparent: they embrace the very modern instruments of communication—tapes, videos, radios, films, the Internet—that were agents of assaults against them. They fight modernity with modern technology.

Their spiritual weapons need ammunition. They all find it in shared sacred texts, usually from centuries before, from times that they perceive to have been perfect or that offered prototypes for living in a perfected world. From these they select the elements that will most help them fight off modernity; these become “the fundamentals.” They need strategies, which can range all the way from attempts at boycotting or demonstrating, from efforts at amending constitutions to revolution and warfare—and, in the end, in some cases, terrorism in the name of God. With these self-confident moves, which they experience or claim to be God-guided, they are certain about where history is going, however long it takes.

Fundamentalisms have to be efficient; what are called “free riders” and others who are only half-committed are unwelcome. Participants have to be ready for total sacrifice of self. So they will pursue



most zealously the group members they perceive as compromisers, people who should know better but who are too ready to barter too much away. Thus an American Protestant fundamentalist chronicler named the evangelist Billy Graham the most dangerous American of the last century—because, he claimed, Graham knew better than to appear on platforms with others who do not share all details of fundamentalist faith.

Finally, fundamentalists need all-or-nothing ideologies. Scholars speak of these as “Manichaeism,” after a dualistic religious movement: dark opposes light, with no shadows between them; it is God versus Satan, Christ versus Antichrist, Allah versus the infidels. There is no room for ambiguity or compromise in the minds of individuals or in the approach of the group as a whole.

Still problematic to the student of world history is the claim that since the movements developed in reaction to modernity, including the experience of religious pluralism and the often accompanying tendency to relativize “truth,” is it not true that many religious movements had to fight off their own “modernities” long ago? Thus New England Puritans abhorred the very idea of “innovation,” and promoted the old ways. If this is the case, would not one have to begin the story of any modern religious fundamentalism by looking at precedents and antecedents through history? Thus Hindus and Muslims have had to fight off modernisms in many generations. Protestant fundamentalists bear some resemblances to Anabaptist or sectarian movements of the sixteenth and seventeenth centuries. So what is new?

The Place of Fundamentalisms

American Protestant fundamentalism, for one instance, fights its battles in the context of a republic where political means are accessible. Resorting to violence is extremely rare. Exceptions such as the bombing of abortion clinics by radical fundamentalists are criticized by mainstream fundamentalists, who find their movements set back by such violence. They may express resentment against a modern world that they

believe is depriving them of their rightful place. After that, their energies go into political organization, attempting to persuade voters, to gain power with holders of office, to employ mass media to make their case.

In the United States it is hard to remain a “pure” fundamentalist. To gain anything in a republic a movement must enter into coalitions, make alliances, swallow some principle for a common cause. Or one may turn to more moderate movements that are religiously satisfying in respect to message though less attractive in their cultural roles. Fundamentalists have been in the public eye since the Scopes trial, a battle over evolution in public schools in 1925. Many people on all sides have been nettled, unsettled, angered, frightened lest their cause be defeated, but they have not had to fear guns.

In Israel one of the very rare fundamentalist movements was Gush Emunim. It was a very modern force, organized under charismatic rabbis who agitated in America and in Israel especially against Israeli leaders who even entertained the idea of coming to terms with the Palestinians. Many in this “Bloc of the Faithful” were offspring of barely observant Jews who in their new turn “went all the way” into and beyond Orthodoxy. Members make claims that they are relying on ancient sacred texts in which the land of Israel was given, with stipulated and precise boundaries, to the people of Israel, the Jews. They find support from and kinship with American Protestant fundamentalists and their slightly more moderate kin who read biblical passages “fundamentalistically” in order to certify and sustain their support of Israel.

In India, the Rashtriya Swayamsevak Sangh (RSS) organized what many Hindus call a cultural, not a religious institution. Maharashtrian Brahmins developed it within Hinduism and it became a base for militant opposition to equally militant Muslims. The two hard-line groups fought over sites that were holy to both. The RSS is an ideology of the Hindu nation. Keshav Baliram Hedgewar, founder of the movement, now a party, wanted to purge India of non-Hindu influences. It is highly organized in order to stimulate emotional response to Hindu appeals and to stand off

the Muslims. Many Indians welcome talk of a Hindu nation, but memories of the assassination of Mohandas Gandhi by RSS people makes them uneasy. And the RSS did teach people to use Western instruments, including weaponry. The RSS literature suggests a sense of embattledness, but the leaders have taught ordinary members to take out their rage on Muslims, who crowd what they think of as uniquely Hindu holy places.

The Muslim Brotherhood was founded in Egypt under the leadership of Hasan al-Banna' (1906–1949), a moralist who was repulsed by moral and spiritual corruption in Egypt and wanted to use the resources of Islam to counter it. The Brotherhood organized schools and hospitals, and became a very vocal critic of semisecular or nominally Muslim governments there. Most influential in the Brotherhood was Sayyid Qutb (1906–1966), a former secularist who turned to be a zealous Sunni Muslim leader. He abhorred what he saw in the United States, which looked corrupt, sensual, immoral, and godless. Qutb was executed by the Egyptian government for his subversion, but his version of Wahhabi Islam thrived, especially in Saudi Arabia. It is out of this tradition that the al-Qaeda movement emerged.

Best known to the West has been the Iranian revolution of 1979. It serves as a model of how fundamentalist movements make their way. The United States-backed Shah of Iran presided over a corrupt regime. As population grew and needed resources were not available to all but the upper classes, resentment developed among young urban males. So did aspiration and hope. After the shah fell, the exiled Ayatollah Khomeini came back from Paris to reoccupy the land that his followers felt had been immorally taken over from them. Soon the shah had to flee, the Khomeini faction grew in power and threat, the United States retreated, and a new pattern of militant, revolutionary unrest followed. Whether they are called fundamentalist or not, movements like the RSS and the Muslim Brotherhood illustrate how the forces develop.

They begin as conservative or traditionalist complexes. They are oppressed (not all fundamentalists

are literally poor, though many are desperately so). Their enemy is seen as a corrupt betrayer of the tradition they believe is theirs. No matter what the world thinks, they must act. Allah will bless them now or, more likely, in eternity. And they will have made a contribution to purifying and ennobling an often corrupt and repressive regime. Something similar goes on in fundamentalist movements elsewhere, and in different religions.

As for the future, militant fundamentalisms are likely to continue to create upheavals of a sort unanticipated at the end of the Cold War. They resort to terrorism or destabilize regimes. At the same time, others run their course and settle for somewhat moderated expressions. In almost every major religious complex—Christian, Muslim, Jewish, Hindu, and the like—nonviolent fundamentalists will seek to make their way through efforts to convert others, to out-vote them, or to influence public policy through means and toward ends that they find satisfying. And “modernism” in its many forms, including with its manifestations of pluralism and relativism will remain the enemy.

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See also Manichaeism; Modernity; Pentecostalism

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Religious Syncretism

Syncretism is the attempt to reconcile disparate—and sometimes opposed—beliefs and practices. It represents a blending of schools of thought and is often associated with establishing analogies between two or more discrete and/or formerly separate traditions. Most studies of syncretism focus on the blending of religion and myths from different cultures.

Syncretism, in its attempt to reconcile disparate beliefs and practices, can be seen from positive and negative perspectives. Viewed positively, syncretism seeks underlying unity in what appears to be multiplicity and diversity. It is common in many aspects of society and culture, including language, literature, music, the arts, technology, politics, social organization and kinship, and economics. Robert D. Baird asserted that the term syncretism contributes little to our understanding of world religions since what it seeks to describe is nearly universal. He suggested that the term “syncretism” should be replaced by the term “synthesis.” Other scholars—most notably the anthropologist Richard Werbner—have suggested that anthropologists restrict their use of the term to the study of religions. Werbner has since rescinded his position. Still other social scientists—notably Peter Beyer and Jonathan Friedman—have suggested that the term syncretism may prove extremely useful for understanding many aspects of culture and society, including social organization, material culture, and processes of localization and globalization.

Viewed negatively, syncretism is a contentious concept that has undergone many transformations. To religious leaders, syncretism often implies impurity

and/or contamination and is associated with—but is not identical to—“eclecticism.” It is unlikely that any contemporary scholar or theologian would argue that processes of syncretism do not exist. Disagreements center on the word itself and on the history of its applications.

Classical Greek and Roman Concepts of Syncretism

The Ancient Greek prefix *syn-* means “with” and the word *krasis* means “mixture.” Thus, the term *synkhrasis* meant “a mixture or compound.” The Greek words *synkretismos* and *synkretizein* do not appear in classical literature until the time of Plutarch (c. 46–after 119 CE). Plutarch utilized a political meaning of the term in an essay entitled “On Brotherly Love” (*Peri philadelphias*), which appeared as a chapter in his *Moralia*. In searching for the origin for the word “syncretism,” Plutarch claimed to have found an example of syncretism in the Cretans who reconciled their differences and came together in an alliance whenever they were faced with an external threat. He labeled this coming together as “their so-called syncretism.” Plutarch’s use of the term later gave rise to negative connotations—many of which were never intended by Plutarch. For Plutarch, syncretism was not only a testament to political expediency, but also had potential to foster sociability and brotherly love. On the other hand, he also saw it as the root of insincerity and impurity. It became synonymous with a lack of authenticity. Passages from Plutarch’s *Moralia* attest that the term “syncretism” was known in the first century CE. Unfortunately, there are few other examples of the term’s use during this period.



The bell-towers of this Roman Catholic Church at Acoma Pueblo, New Mexico, combine features of Christian and Native American architecture.

Although the word “syncretism” was not in common use among the ancient Greeks and Romans, the practice of syncretism seems to have been very common. It was central to both Greek and Roman political culture as well as Roman and Greek religions. In many respects, the commingling of religions was a direct result of Roman conquest, slavery, and forced migration. Franz Cumont (1956, 4), a historian of religion, speculated, “Who can tell what influence chambermaids from Antioch and Memphis gained over the minds of their mistresses?”

During the time of Alexander the Great (Alexander of Macedon 356–323 BCE), Hellenistic culture was itself a mixture, having blended Persian, Anatolian, Egyptian, and later Etruscan-Roman elements into an overall Hellenic framework. It is apparent that the syncretic gods of the Hellenistic period enjoyed wide favor among the Romans. Serpis, Isis, and Mithras were the most prominent among these deities. The

goddess Cybele—as she was worshipped in Rome—was also highly syncretic.

In addition, pagan elements were incorporated into first-century Christianity. But—as with all religious syncretisms—not everyone agrees on the specifics. There are numerous and acrimonious debates with respect to “who, what, when, where, and why.” While a majority of classicists and New Testament scholars agree that syncretism has occurred within Christianity and is likely to continue, specific examples often give rise to heated debates.

The Romans—who saw themselves as the heirs to Greek civilization—identified Greek deities with members of the Etruscan and Roman pantheons. Interestingly, they accepted the Greek and Etruscan gods but rarely copied Greek or Etruscan rituals. Vague attempts to establish equivalencies between Roman, Greek, and Etruscan deities were seldom contested. But putative correspondences vary; for example, Jupiter was seen as a better equivalent for Zeus than the huntress Diana was an equivalent for Artemis. Classicists argued that Ares was not a good match for Mars. The Anatolian goddess Cybele—who was imported to Rome from her cult center at Pessinus—was identified as Magna Mater and given a matronly image that had been developed earlier in Hellenistic Pergamum. The Egyptian god Amun was borrowed from a Hellenized “Zeus/Ammon” after Alexander the Great’s quest for Amun’s oracle at Siwa. The Greek god Dionysus was imported into Rome as Bacchus, and the Anatolian Sabazios was transformed into the Roman deity Sabazius. Given these precedents, the Romans would have recognized few barriers to the worship of Isis or Mithras. Likewise, when the Romans first encountered the Celts and Teutonic peoples, they commingled these northern gods with their own gods, creating, among others, “Apollo Sucellos” (Apollo the Good Smiter) and “Mars Thingsus” (Mars of the War Assembly). As Charles Stewart and Rosalind Shaw have emphasized, attempts to explain syncretism by reference to perceived equivalencies and/or correspondences are often flawed. Equivalencies, they asserted, must be recognized by actors—and even when such

No difference there is between a temple and a mosque, nor between the Hindu worship or the Muslim prayer: for men are the same all over, though they appear not the same. • **Guru Gobind Singh (1666–1708)**

equivalencies are recognized, they do not have to be accepted.

Such identifications and equivalencies may stem from a Hellenic practice of identifying deities of disparate mythological traditions with their own. When proto-Greeks—whose language would later become classical Greek—first arrived in the Peloponnese over two thousand years ago they encountered localized nymphs and divinities already associated with important geographical features such as mountains, groves, caves, and springs—each of these geographical features had its own locally venerated deities.

Syncretism from the Renaissance to the Present

The term “syncretism” fell into disuse from the time of Plutarch to the time of the Renaissance. It was reborn with Erasmus (1466?–1536) and his reading of Plutarch. Erasmus modified the term “syncretism” in his *Adagia* (Adages)—first published in 1517—with reference to the coherence of dissenters despite their myriad philosophical and theological differences. Syncretism, for Erasmus, represented agreement among peoples with seemingly different beliefs and ideals. In a letter to Melancthon dated 22 April 1519, Erasmus specifically referenced the Cretans (borrowing from Plutarch) as an example of the adage “Concord is a mighty rampart.” Nearly a century later, in 1615, David Pareus of Heidelberg urged Christians to adopt what he called “pious syncretism” in opposition to the Antichrist, but few seventeenth-century Protestants seriously considered compromises that might bring about the ultimate reconciliation of Protestantism and the Roman Catholic Church. In the seventeenth century, Calixtus (1586–1656) sought to reconcile the various Protestant denominations with each other. He was ridiculed by Calovius (Abraham Calov, 1612–1686) for being an advocate of “syncretism.”

Nonpejorative connotations of the term “syncretism” began again in the eighteenth century with the publication of Denis Diderot’s *Encyclopédie*, which contained entries on “Eclecticisme” and “Synchrétistes, Hénotiques, ou Conciliateurs.” Although Diderot

published two separate entries, he equated syncretism with eclecticism and portrayed syncretism as the concordance of eclectic sources.

Throughout the nineteenth century, overt syncretism in folk beliefs was seen as a strong indication of the cultural acceptance of an alien and/or earlier tradition. Nevertheless, it was also recognized that “foreign” cults may survive or infiltrate other religions without an official, authorized syncretism. By the end of the nineteenth century, identities were no longer predicated on the existence of continuous and immutable cultures, and the concept of syncretism came to the forefront largely because it blurred local distinctions—a characteristic that made it useful for rulers of multicultural populations. At the same time, the rejection of syncretism, that is, antisyncretism in the name of purity and/or orthodoxy, helped to generate and legitimize a strongly felt desire for cultural unity. Contemporary celebrations of Christmas, Easter, and Halloween offer many telling examples of syncretism in practice. This is not a new phenomenon. The ancient Romans adopted pagan Yule traditions that eventually made it into Christmas celebrations (Christmas trees, Yule logs, and the like), and Roman Catholics in Central and South America have integrated a large number of elements that are taken from indigenous Latin American and North American religious traditions. It is of interest that religious leaders who oppose syncretism almost always express their opposition in terms of personal piety.

A number of so-called new religious movements like Reverend Moon’s Unification Church or L. Ron Hubbard’s Church of Scientology have openly embraced syncretism, while others—Christian fundamentalism and Islam are perhaps the most dramatic examples—have rejected syncretism as a devaluing of precious, genuine religious and cultural truths and distinctions. Examples of intense syncretism can be found in Romanticism and in various other “new religions” like mysticism, occultism, theosophy, paganism, and New Age. In the fine arts, the eclectic aspects in postmodernism are abundantly apparent.

Generally, the term “syncretism” has been positively regarded by social scientists. Yet Stewart and Shaw



report that there is growing uneasiness with the term among anthropologists who have been influenced by postmodernism. Other anthropologists have devoted their attentions to showing that syncretism is not inevitable. It is possible, they contend, for two groups to live in close proximity and largely ignore each another. For this reason, scholars find it both necessary and informative to examine syncretism with respect to relations of power. In *Syncretism and the Commerce of Symbols*, Goren Aijmer dramatically shifted the direction of research by asking, “Under what specific conditions do people in any one group pay attention to the cultural symbols of another group?” (1995, 27). Often, it seems that syncretism has been most intense whenever inequality between cultures has been the most pronounced. Equally important, war, conquest, colonialism, trade, migration, and intermarriage bring syncretism to the forefront. Race, gender, age, and social class are also factors. Scholars must examine the relationships between global and localized syncretisms. Are two or more religions influencing one another equally or is one dominating the rest? How does syncretism relate to issues of entrepreneurship and to theories of modernization?

In anthropology, the term “syncretism” is most closely associated with Melville J. Herskovits, who is best known for his research on the survival of African cultural traits among blacks in the Americas. Herskovits advocated an appreciation of what he called “syncretized Africanisms” and focused on various types of “acculturation” in order to address more general issues of culture contact. Again, there is need to recognize that acculturation (and syncretism) is not inevitable, and that all major world religions and cultures seem to be of composite origin.

Marked evidence of syncretism has been identified in New World religions such as Brazilian Candomblé, Haitian vodun, and Cuban Santería. These religions analogized various Yoruba and other African gods and selected Roman Catholic saints. Some Candomblé leaders have incorporated the spirits of American aboriginal leaders like Sitting Bull and Black Hawk into their rituals. The most syncretic New World

religion is perhaps Brazilian Umbanda, which combines African deities with a form of French spiritism attributed to Alan Kardec (1804–1869). In Brazil, French spiritism is also known as *Kardecism* or *Kardecismo*. Umbanda also incorporates local aboriginal spirits, African and Hindu deities, and North American aboriginal leaders.

Roger Bastide’s influential study *The African Religions of Brazil* attempted to account for syncretism by stressing historical processes like conquest and migration. He traced the various ways in which African, European, and aboriginal religions have come together in what he termed an “interpenetration” of civilizations. Rather than offering a psychological explanation, Bastide’s sociological approach focused on groups of people who were differentiated by sex, social class, and age. By contrast, Stephen D. Glazier’s research on the Spiritual Baptists in Trinidad focused on individual Baptist leaders and their practice of borrowing rituals from a variety of religious traditions but keeping these borrowed rituals separate in time and space. According to Glazier, one outcome of this process is a religion that is marked not so much by syncretism as by juxtaposition.

In South Africa, studies of syncretism have focused on independent churches. The earliest studies of African Independent Churches (AICs) were conducted by Christian missionaries, and the term syncretism was used in derogatory ways. Contemporary anthropologists—most notably J. Y. D. Peel—argued effectively that syncretism was not central to independent churches in South Africa because these churches represented reinterpretations of Christianity but never encouraged a mixture of Christianity and tribal elements.

It should be emphasized that authenticity and originality are not always dependent on the alleged purity and uniqueness of religions and vice versa, and that many so-called “original” religions—like the religions of Australian aborigines—are actually the result of a unique syncretism that has not occurred elsewhere. It is difficult to separate religion from the rest of culture. Scholars studying syncretism cannot specify their field of study in advance and must be sensitive to the ways in which people negotiate and redefine the boundaries

of their ideas and practices. For example, since Vatican II the Roman Catholic Church has implemented a concerted program of “inculturation” whereby local communities were encouraged to apprehend the Christian message “on their own terms.” Is this, too, a type of syncretism? Shaw and Stewart pointed out that global religions—like Christianity, Hinduism, Buddhism, and Islam—have been able to effectively “standardize” their responses to syncretism. They suggested, for example, that antisyncretism within Islam can be seen as a standardized response to global capitalism, labor migration, and travel—not least of which is participation in the hajj. Shaw and Stewart also underscored the need to examine problems of agency, especially when agency is ascribed to religious traditions without reference to religious specialists. A difficulty is that when one ascribes agency to a religion, religions are portrayed as having their own dispositions like “free-flowing rivers.” Such is seldom the case.

At times, syncretism is largely intentional, while at other times it is largely unintentional. Whatever the case, there are always unexpected consequences. Syncretism sometimes proceeds from misinterpretations and radical misunderstandings; for example, Christian missionaries working among the Ewe in Ghana identified one Ewe deity, Mawu, as the Christian God and labeled all other Ewe deities as “devils.” An unintended consequence of this labeling was that the Ewe devoted a seemingly disproportionate amount of ritual time to honoring their “devils.”

It is imperative for scholars to chart the increasingly complex interconnections between syncretism, social change, and resistance. Stewart and Shaw concluded their study of syncretism by suggesting that the term be recast as the politics of religious synthesis. A major focus, they postulated, should be on antisyncretism and the antagonisms shown by agents who are largely concerned with the defense of religious boundaries.

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See also African-American and Caribbean Religions

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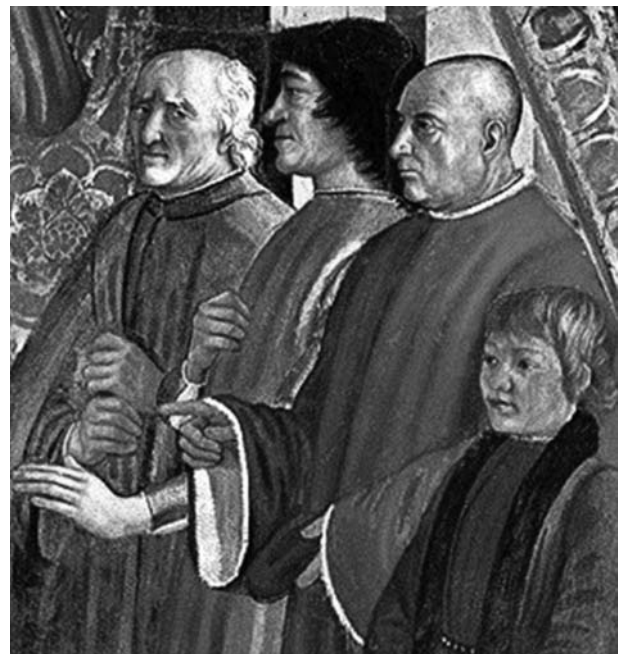


Renaissance

As increasingly urban, educated, and secular populations became dissatisfied with medieval values—first (circa 1350) in the Italian republics and principalities and then later north of the Alps—they sought to recover the knowledge and wisdom of the ancient world. A new and remarkable self-confidence in human agency resulted, and it sparked an intellectual, cultural, and artistic revolution known as the Renaissance.

The Renaissance was a period defined less by a span of time than by the application of certain ideas to almost every aspect of life. About the mid-fourteenth century in Italy, people realized that the essential values of the Middle Ages no longer suited an environment that was increasingly urban, secular, mercantile, and educated. In particular, city-states, such as Florence and Venice, required a new perspective that validated the lives of the wealthy merchants who governed their communities.

The Italian city-states had been made wealthy as a consequence of the crusades and the recovery of long-distance commerce, with Italian merchants dominating the carrying trade between Europe and the crusader outposts in the Levant (eastern shore of the Mediterranean), ferrying men, equipment, food, and goods across the Mediterranean. The cities of Pisa, Genoa, Amalfi, and Venice dominated this trade, which attracted large numbers of Europeans to the Levant and the Byzantine Empire in the Near East and a few to the Far East. The most dramatic episode in this expansion of Italian trade and influence was the conquest of Constantinople (Istanbul, Turkey) in 1204 by the crusader army of Baldwin of Flanders in northern Europe, an episode that the



Domenico Ghirlandaio, *The Confirmation of the Franciscan Rule* (detail from a fresco cycle on three walls, 1483–1486). Sassetti Chapel, Santa Trinita, Florence. In the center is a portrait of Lorenzo de' Medici, who led Florence through its celebrated efflorescence of culture and political influence.

Venetians used to gain greater influence in the lucrative Eastern markets.

Other Italian cities benefited economically as well, again driven by the vast explosion of money available as a result of trade. Florence was not a seaport but produced the finest woolen cloth in Europe, a product greatly sought by luxury-loving northern Europeans. The huge profits from this trade permitted Florentine merchants to increase their wealth by lending surplus capital at interest, that is, to become bankers as well



This panel from Ghirlandaio's fresco includes portraits of Francesco Sassetti's family, friends, and business associates. Sassetti, the director of the Medici Bank, commissioned the frescoes and the altarpiece in the Gothic-style chapel.

as merchants. Their banks gave the Italians a virtual monopoly over the money markets of Europe from the twelfth to the beginning of the sixteenth century. A direct consequence of this monopoly was the introduction of stable gold coins that could be used as reliable tender, free from the wild fluctuations of most medieval European coinage. The Florentines introduced the florin in the 1250s; the Venetians introduced the ducat in 1282. These currencies proceeded to dominate the economies of Europe for the next 250 years.

This wealth precipitated social and political problems, however. Merchants did not fit easily into the medieval worldview in which the clergy cared for souls and the landed nobility provided security and government. Tensions arose between the newly wealthy urban merchants—who were educated laymen but not noble—and the traditional ruling elite of the nobility. Venice escaped these tensions because it was surrounded by water with no landed territory dominated by nobles to cause friction; but Florence during the thirteenth century entered a period of great turmoil. The nobles resented the wealth and influence of those whom they considered to be their social inferiors, while the mercantile elite grew increasingly resentful of their lack of political control. The city became a battleground between the old and new elites, a division made more vicious because it was characterized by contemporaries as an ideological struggle between those who supported the sovereignty of the Holy Roman Empire

in Italy (the Ghibellines) and those whose allegiance was to the pope (the Guelfs). The former were generally old noble, landed families; the latter were generally newly enriched families who benefited from recent social mobility and the new mercantile economy.

Fragmented Italy

Italy had not been a united nation since the collapse of the Roman Empire. North of the kingdom of Naples, Italy remained a mosaic of independent states, ruled by princes or oligarchies of powerful families who received their authority from the Holy Roman emperor or the pope. Because neither the emperor nor the pope enjoyed sufficient authority to suppress the other, Italy remained fragmented until the nineteenth century. However, for the development of the Renaissance, this fragmentation was beneficial because it encouraged competition for the best artists, architects, and writers, and it permitted a degree of economic, social, and political experimentation impossible elsewhere on the continent.

In Florence the Guelf party ultimately triumphed with papal support, and the city reaped the reward of becoming the banker for the pope and the church. The old feudal families were tamed, disenfranchised, and excluded from government through a mercantile coup d'état in 1293 that created the republican constitution that would govern Florence throughout the



Palazzo Rucellai (1446–1451), an iconic example of the Renaissance palace, with façade designed by Leon Battista Alberti, in Florence. Photo by Federico Pelloni.

Renaissance. The city became an oligarchy ruled collectively by all adult male citizens who belonged to the twenty-one recognized guilds. It had an elaborate mechanism to forestall tyranny, entrusted to a collective executive of nine men. Even after the Medici family managed to assume political hegemony (influence) in 1434 under Cosimo de' Medici (the Elder, d. 1464), the city remained a functioning republic until the sixteenth century, with the head of the family merely manipulating policy behind the scenes. The greatest of the Medicis, Lorenzo the Magnificent (d. 1492), led the city through its celebrated efflorescence of culture and political influence, although he remained throughout his life only a leading citizen and not a prince.

The social, economic, and political revolutions of the thirteenth century in Italy obviously created powerful new groups of citizens with different ambitions and values from the old medieval world characterized by priests, knights, and peasants. The lives of citizens were secular; they were often highly educated

and very cosmopolitan, having lived abroad in many places as merchants. Moreover, they were “new men,” without great names or natural authority to support them: they had made their own way in the world, and they searched for a value structure that could offer comfort to them as bankers who took money at interest, despite the injunctions against usury, who needed advice concerning the government of guilds and cities, who wanted advice on the conduct of families, and who needed a culture that reflected their particular circumstances and that spoke to their role in this world as engaged lay citizens.

Francesco Petrarca (Petrarch, 1304–1374) first articulated this search. Born into an exiled Florentine family, he was a poet, philosopher, cleric, and diplomat. In his Italian poetry he celebrated human love and the desire for fame while advocating good style in Latin to clarify and externalize individual experience. Finally, he was interested in himself and his fellow humans and their experience in this life. He made popular once more autobiography as a genre, and he stressed the validity of the exploration of one's self and one's world.

Petrarch found a model for his ideas and his style in the ancient world. Rome was, after all, an urban, mercantile, secular society, originally republican like Florence, and possessed of a great literature that explored the human condition. He solved the problem posed by pagan authors in a Christian society by stressing that they were good men as illustrated in their writings: ancient writers, such as the Roman Cicero (d. 43 BCE), could advise the contemporary world in matters of ethics, even though Christian belief was still required for salvation. The ancient world, then, could safely be adopted as a model for both secular life and art: it could be reborn (renaissance).

Wisdom of the Ancients

These revolutionary ideas changed the European perspective, spreading through Italian republics and principalities and then north of the Alps. Human experience was now celebrated, and this life was



Giotto, *The Mourning of St. Francis*. Part of the artist's fresco cycle on the life of Saint Francis. Bardi Chapel in Santa Croce, Florence.

identified as something worth cultivating and studying. The ancients set a standard for Europeans first to emulate and then to surpass. To accomplish this, people had to recover the knowledge and wisdom of the ancient world; hence, the tools of philology (the study of language and word morphology), textual editing, archaeology, and numismatics were developed. To know their fellow human beings, people revived portraiture in sculpture and painting through the use of visually accurate anatomy and physiognomy (the art of discovering character from outward appearance). To reproduce what the eye sees as a tool to share people's understanding of the external world, Brunelleschi invented linear perspective in Italy early in the fifteenth century, and Alberti codified it. Buildings conformed to the precepts of Vitruvius, the Roman architect, and the vocabulary of design and decoration was adopted from the ancients. Taken together, these ideas and practices constitute humanism, which

became the central cultural and intellectual expression of the Renaissance; a direct consequence was a new and remarkable self-confidence in human agency. "Man is the measure of all things" and "Man can do anything he wills" became accepted beliefs within the humanist community.

This intellectual, cultural, and artistic revolution paralleled the economic and social revolution that was occurring. The virtual Italian monopoly on the lucrative long-distance luxury trade to the East galvanized peoples north of the Alps to find the means to challenge Italian economic dominance. The end of the Hundred Years' War (1453) and the English Wars of the Roses (1485) stimulated northern commerce; the crusade of rulers Ferdinand and Isabella of Spain against the Moors of Granada created a united Spanish kingdom by 1492. Also, the fall of Constantinople to the Turks in 1453 made Mediterranean trade more difficult and less profitable, even

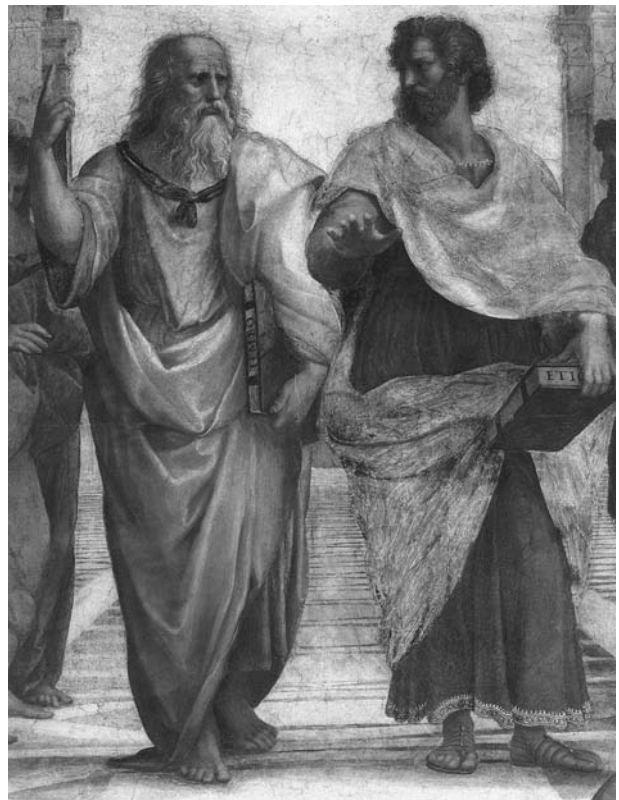
for Italians. Searching for a new route to the East, Christopher Columbus, an Italian sailing for Spain, encountered the Americas in 1492; the Portuguese began exploring the coast of Africa until Vasco da Gama succeeded in 1497 in establishing an ocean route between India and Europe.

These voyages and the commercial connections and newly discovered wealth they brought changed the shape of Europe forever. The center of power on the continent shifted away from the Mediterranean (literally once the center of the Earth, *media terra*) to the Atlantic seaboard. Spain, Portugal, France, England, and later the Netherlands became dynamic nations, expanding beyond Europe into the empires they were building around the world, extending long-distance trade to places in Africa, the Americas, and the Pacific never contemplated by the Italians.

Renewed Self-Confidence

The result was a renewed self-confidence among Europeans that included a reinforced belief in the power of human beings to comprehend nature. Practical experiments resulted from this belief: science presupposes the validity of human observation and the ability to interpret it. Newly discovered plants and animals from outside Europe could be depicted through exact illustrations made possible by the Renaissance tradition of naturalism in art; skills such as reliable cartography for navigation were facilitated by related concepts such as linear perspective. Altogether, Europe assumed an energetic, outward-looking attitude that drove the voyages of discovery and the expansion of trade—events that resulted in new knowledge through contact with other peoples as well as a reconsideration of the place of Europe in the world, as evidenced by texts such as the English statesman Thomas More's *Utopia* (1516) and the French essayist Michel de Montaigne's essay *Of Cannibals* (printed 1580). Finally, new ideas could spread quickly and reliably through printing, developed in Germany in the mid-fifteenth century.

The decline of the Renaissance followed the decline of the principles that animated it; just as the Renaissance reached different nations at different times, so its eclipse occurred later in the North than in Italy. Events such as the invasion of Italy by King Charles VIII of France (1494) and the ensuing six decades of warfare on the peninsula, together with the loss of control of the Eastern luxury trade and almost continuous war with the Ottoman Turks, sapped both the wealth and the confidence of Italians. Also, the Protestant Reformation (a movement during the sixteenth century to reform the Roman Catholic Church) caused a reaction within



Raphael, *The School of Athens* (detail, 1509). Raphael's famous fresco re-imagines a scene from classical Greece. In the full view, Plato (right) and Aristotle (left) engage in dialogue surrounded by figures representing areas of knowledge they believed true philosophers must master, such as astronomy and solid geometry. Stanza della Segnatura, Palazzi Pontifici, Vatican.



From a competitive field of Renaissance architects, Pope Julius chose Donato Bramante's design for St. Peter's Basilica in Rome, photographed in 2004 from the roof of Castel Sant'Angelo; the foundation stone was laid in 1506. Over the next forty years, Raphael and Michelangelo, among others, added to and embellished the original plans. Today St. Peter's and the Vatican Museum are among the world's finest repositories of Renaissance artistry.

the Roman Catholic Church that often manifested itself in hostility to new or unorthodox ideas. The establishment of the Roman Inquisition (1542), the Index of Prohibited Books (1559), and the suppression of free inquiry in schools and universities made dynamic new ideas more difficult to accept. In the North the French Wars of Religion (1562–1598), the wars between the Catholic Habsburg ruling house and Protestant princes in Germany and the Netherlands, and the struggle between Europe and the Turks led to a movement away from Renaissance ideals and the economic and social conditions that had given rise to them. Although humanism continued in the form of classical studies, courtly behavior, elite

education, and cultural movements in art, architecture, and literature, its energy had been depleted and transformed by the religious, social, and political experiments of the Protestant Reformation, the Counter Reformation (a reaffirmation of the doctrine and structure of the Roman Catholic Church, partly in reaction to the growth of Protestantism), and the artistic and architectural style of the baroque.

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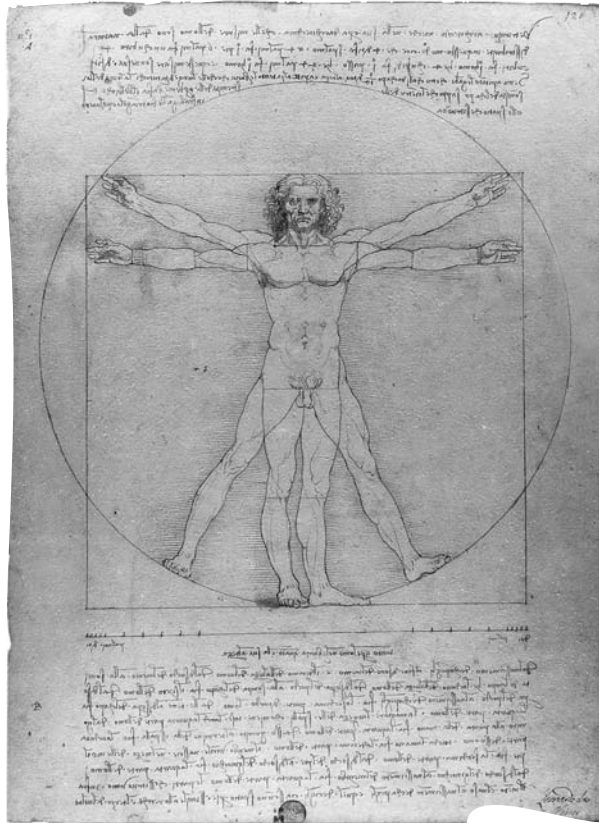
See also Art—Europe; Early Modern World; Leonardo da Vinci; Machiavelli, Niccolò

Lord, grant that I may always desire more than I can accomplish.

• Michelangelo (1475–1564)

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Leonardo da Vinci, *Vitruvian Man* (c. 1485–1490). Pen and ink with wash on metalpoint paper. A study of how the human form correlates to classical orders of architecture as described by Vitruvius's treatise *De architectura* (1st c. BCE). Galleria dell'Accademia, Venice. Photo by Luc Viatour.

chat

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Revolution—China

Revolution is a twentieth-century phenomenon in China, although the empire had a long history of peasant rebellions and dynastic overthrow. Revolution in 1911 formally ended 2,100 years of dynastic rule; revolution in 1927 railed against political chaos and a government that remained dominated by foreign imperialist powers; revolution in 1949 put the Communists in charge and culminated in the Cultural Revolution against those taking the “capitalist road.”

For much of the second half of the twentieth century, the founding of the People’s Republic in 1949 was seen as the decisive revolution, or perhaps the completion of earlier incomplete or “failed” revolutions in 1911 and 1927. With the cooling-off of the Communist revolution in recent decades, that metanarrative is open to question, and these earlier revolutions acquire more prominence in the long process of transforming an ancient agrarian-bureaucratic empire into a modern nation-state and industrialized society.

Even the word *revolution* was new in China in the late nineteenth century. Along with many Western ideas about modernity, it came to China from Japan as a neologism formed by taking the ancient Confucian term for mandate (*ming*), as in the Mandate of Heaven (*tianming*) that sanctioned a leader’s rule, and putting the Chinese word for “remove” before it. Thus, *geming* literally means: “to remove the mandate” (political legitimacy). But by the early twentieth century Chinese radicals already understood it in the sense of the American or French revolutions—establishment of a new political order. Closely associated with ideas of progress and popular sovereignty, it was

manifestly new and foreign, in fact, a response to the military and political humiliations China had suffered at the hands of industrialized Western powers since the middle of the nineteenth century.

Republican Revolution, 1911

The first revolution came rather unexpectedly, although for more than a decade there had been revolutionary agitation and small-scale uprisings, especially in the south. Most of these were led by Sun Yat-sen (1866–1925) and drew support from overseas Chinese business communities and the new generation of young intellectuals studying what was known as Western learning. Sun’s call to overthrow the “alien” Qing dynasty (1644–1911/12; the imperial family during the Qing dynasty was ethnically Manchu, not Han Chinese) strongly appealed to the ethnic nationalism they had learned largely from the West.

When the revolution broke out, almost accidentally from a botched military coup in the city of Wuhan in eastern central China on the Yangzi (Chang) River, lack of effective leadership in Beijing—the emperor was only a child—combined with widespread frustration over the Qing court’s inability to strengthen and modernize China, and imperial authority rapidly collapsed throughout southern and central China. Sun Yat-sen became president of a short-lived provisional government, but the revolution was soon hijacked by China’s most powerful military man, Yuan Shikai (1859–1916), a different kind of modernizer. Yuan used his military muscle to squeeze out Sun Yat-sen and his party’s elected representatives in the new National Assembly.



The economic success of Communist China has rested to a significant extent on the physical labor of its people. Here, a work gang discusses the day's schedule.

The revolution thus ended in apparent failure, with no democracy, no progressive political program, and China torn apart by civil wars after Yuan Shikai's demise. Nevertheless, the rather premature revolution of 1911, and the emperor's abdication in 1912, had ended 2,100 years of imperial bureaucratic government, replacing the hereditary emperor with a (supposedly) elected president, the Mandate of Heaven with the doctrine of popular sovereignty, and the old type of Confucian scholar-official with "modern men," whether trained in Western-style universities or modern military academies.

Nationalist Revolution, 1927

It was these modern men—and, with the growth of coeducation in the new schools, some women too—who carried the revolution to its next stage. The revolution of the 1920s was nominally led by Sun Yat-sen and his revived National People's Party (Guomindang, usually translated as Nationalist Party), but it mobilized much broader and more radical social forces than had the revolution in 1911.

The radicalism grew from several sources. First, there was the disappointment with the results of 1911 as the country fell into political chaos and remained under the domination of the foreign imperialist powers. Second, there was more rapid growth of the

modern sector of the economy, with factories and new social classes—Chinese capitalists and a nascent industrial working class—appearing in the coastal cities. Finally, of most direct import, there was the cultural iconoclasm of the New Culture movement, which blamed traditional culture and social habits (Confucianism was a prime target) for China's backwardness. The new universities, notably those in Beijing, were at the center of this intellectual revolution, which emphasized "enlightenment" and a broader concept of revolution.

But two external events precipitated the politicization of this cultural radicalism. One was the deeply felt disappointment with the Western democracies' decision to let Japan keep control over China's Shandong Province, which the Japanese had taken from Germany during World War I. To Chinese nationalists, this was a gross violation of Woodrow Wilson's principle of self-determination. The Bolshevik revolution in Russia offered an alternative, anti-imperialist vision of national salvation to the pro-democratic capitalist path that had originally attracted Sun Yat-sen. When recruiters from Comintern, Lenin's association of national Communist parties, came to China in the early 1920s, they found eager converts to Marxism and social revolution. They also used financial, military, and political aid to persuade Sun Yat-sen to reorganize his Nationalist Party and

Martyrs are needed to create incidents. Incidents are needed to create revolutions. Revolutions are needed to create progress. • **Chester Himes (b. 1909)**

launch a renewed revolution against imperialism and warlordism. The newly formed Chinese Communist Party also followed Moscow's guidance by accepting a subordinate position in a revolutionary united front with the Nationalists.

Thus the ideology of the second revolution was much more anti-imperialist in its nationalism and, at least potentially, much more anticapitalist in its social and economic policy, although Sun attempted not to alienate his more conservative supporters in the Nationalist Party and the Comintern insisted that China was ripe only for a bourgeois-nationalist, not a socialist, revolution.

The events of 1927 confirmed the Comintern's thesis in an ironic way. After Sun Yat-sen's premature death from cancer in 1925, tensions grew between the radicals and moderates in the revolutionary movement. In 1926 Chiang Kai-shek (1887–1975), commander of the new Nationalist Party army based in Guangzhou (Canton), launched the Northern Expedition (1926–1927) against the warlord armies. After successfully liberating the Yangzi River valley, including the modern metropolis of Shanghai, he broke with his radical allies, massacred the Communists, and brought the Nationalist Party under his control and formed a new government with its capital in Nanjing.

This marked an abrupt turn away from the radical agenda of the 1920s. Chiang abandoned most of the revolutionary social and economic policies, including Sun Yat-sen's plans for redistribution of land, in favor of militarily imposed political unification and nation building. Chiang and the Nationalist government achieved some success with this course during the Nanjing decade (1927–1937), before a Japanese invasion brought the government and the nation new challenges.

Communist Revolution, 1949

The Chinese Communist Party had been urban based in the 1920s, organizing industrial workers along conventional Marxist lines. After its defeat in 1927, it moved into the countryside, where Mao Zedong (1893–1976) emerged as the most successful leader of

peasant-based revolution. After relocating from south central to northwestern China in the famous Long March of 1935–1936, a reorganized party under Mao's leadership was positioned to take advantage of the withdrawal of Nationalist government authority from northern China to organize the peasantry in broad areas there to resist the invading Japanese.

During the eight long years of war, while the Nationalists' power and morale waned, the Communists grew in military power and popular support in the countryside of northern China. Combining anti-Japanese nationalism with social and economic improvements for the peasant majority, the Chinese Communist Party, now free of Russian influence, was much more ready for renewed conflict with the Nationalist government after Japan's surrender in 1945. The party's experience during these years—the "Yan'an spirit" of self-reliance, political will power overcoming material difficulties, and faith in the rural masses' innate revolutionary consciousness—was instrumental in gaining popular support and overcoming Nationalist military superiority in the seizure of national power by 1949. It also left a legacy of populist activism and guerrilla war mentality that was not always well suited to solving problems of economic development on a national scale.

The victory of the Communists in 1949 was in part the result of the Nationalist government's collapse from rampant corruption, administrative inefficiency, poor military strategy, and unsolved economic problems such as runaway inflation. But it was also due to the Communists' success in tapping into the main currents of modern nationalist aspirations for a strong, prosperous, and united country as well as the older socioeconomic grievances of the peasantry. That mixture was a potent revolutionary formula that seemed to have potential application throughout much of the Third World.

Great Proletarian Revolution, 1966–1976

In the first two decades of the People's Republic, the Communist Party oscillated between following the



Soviet model of a centralized, bureaucratic planned economy and more populist, rural-based strategies for building a modern, industrialized economy and an egalitarian, socialist society. The Great Leap Forward of 1958, with its rural communes, backyard steel furnaces, and frantic mobilization of the masses, was the most dramatic experiment in the Yan'an-inspired unorthodox developmental strategy that Mao favored. A disastrous economic failure, it was followed in 1966 by the Great Proletarian Revolution (Cultural Revolution, 1966–1976). Mao, appalled by the loss of revolutionary fervor in the Soviet Union and its new society of entrenched bureaucratic privilege, thought to prevent the same from happening in China by mobilizing frustrated students, low- and mid-level party members, and some elements of the military in a “revolution within the revolution.” This would not only remove those high-ranking leaders who were “taking the capitalist road,” but also revitalize the entire revolution.

With the help of the politically ambitious commander of the People's Liberation Army, Lin Biao (1908–1971), Mao purged almost all the top party and government leaders, inspired vast numbers of fanatically loyal revolutionary youth (the various bands of Red Guards), and put the country in turmoil for two years. He drew back, however, from completely dismantling the party apparatus that held China together, and the last eight years of his life were characterized by a complicated and somewhat paralyzing covert struggle between the acolytes of the Cultural Revolution's radical socialism and more cautious, economically oriented party bureaucrats.

China after 1978

With Mao's death in 1976 everything changed, but not right away. After a brief interlude under Mao's chosen heir, Hua Guofeng (1936–2008), by 1978 Deng Xiaoping (1904–1997) emerged as Mao's real successor. Also a veteran revolutionary from the Long March and Yan'an era, Deng abandoned Mao's revolutionary rhetoric, above all the idea of class

struggle and continuing revolution, and proceeded to systematically dismantle all of Mao's social and economic policies. Technological expertise replaced mass mobilization as the key to rapid economic modernization, and this meant both educational reform (no more politics before knowledge) and opening the country to advanced scientific technology from the West. Furthermore, economic incentives replaced socialist ideology as the motivator for economic growth. The communes were broken up into family farms. Private enterprise, at first on a small scale, but then on a large scale, was revived, foreign capitalist investment encouraged, and China embarked on the kind of export-driven industrialization that Japan, Taiwan, and South Korea had pioneered so successfully. As market economics gradually eroded the position of state-owned economic enterprises and consumerism spread throughout society, China became an integral part of a globalized capitalist economy. By 1998, little remained of Mao's socialist economy—and nothing of his campaign—to eradicate the capitalist mentality.

Did all this mean that the revolution was over, or was it, in Deng Xiaoping's formulation, “socialism with Chinese characteristics”? The official ideology remained socialist, and Communism the ultimate goal. But for the present capitalism is being allowed to develop its full productive potential, and successful capitalists are being recruited into the Chinese Communist Party. But the party still retains its absolute monopoly on political power; Deng himself sanctioned the ruthless suppression of the most serious challenge during the student uprisings at Tiananmen Square in 1989. Whether that makes the government still a revolutionary regime or just another one-party dictatorship is a moot point. Certainly the radical and violent upheavals of China's revolutionary past seem to be history, for now anyway.

Chinese Revolution in Global Perspective

All great revolutions reverberate far beyond national borders, and the Chinese revolution was no exception.

For a time, mainly in the 1960s and 1970s, China appeared to have inherited the mantle of Marxist world revolutionary leadership from an increasingly ossified Soviet Union. This was especially evident in Third World peasant societies, where the Chinese Communists vigorously promoted their experience with peasant-based revolution as a way to break free from capitalist imperialism and achieve rapid modernization. Lin Biao's short essay "Long Live the Victory of People's War!" (1965), succinctly expressed this ambition.

But Maoism and the Chinese model have had little real impact on political evolution in the Third World. The Naxalites in Bengal failed in attempts to import Maoist-style revolution into India. The most successful practitioners of "people's war," the Vietnamese Communists, depended on the Soviet Union for most of their military hardware, and in any event harbored a deep historic distrust of Chinese. The Khmer Rouge in Cambodia came the closest to being followers, but their ruthlessness exceeded anything in the Chinese experience, and their failure was more absolute. In Africa, Marxist movements leaned towards the Soviet Union. To be sure, there were some echoes of Maoism in Peru's Shining Path in the 1980s, and more recently rural insurrectionists in Nepal have proclaimed themselves Maoists. But on a global scale, it now seems that the Chinese model was much more specific to China's particular historical experience than relevant to peasant societies elsewhere.

There is also the overriding reality that since 1949 the percentage of peasants in the world's total population has continued to drop, until it is now well under 50 percent. With the poor and downtrodden of the

twenty-first century more likely to live in urban shanty towns than on the land, how relevant is a rural-based revolutionary strategy? Similarly, the model of radical egalitarianism that appealed to young Western radicals in the sixties and seventies has been almost completely discredited by the revelations of Cultural Revolution atrocities and post-Mao China's cozy relations with the international capitalist order.

Has the revolution left any legacy? Perhaps just the Maoist insistence that oppression and exploitation inevitably arouses resistance. Chinese revolution in the twentieth century was one of the great examples of such resistance, and it may yet be the inspiration for more.

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See also Mao Zedong; Revolutions, Communist; Sun Yat-sen

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The term *Cuban Revolution* applies to two phases of Cuban history since the mid-1950s. The first regards the actual military campaign that began in December 1956 with the landing by Fidel Castro and close to one hundred men in Oriente Province, which triumphed in January 1959 with the victory of his rebel army. The second, based on political alliances and ideologies, started immediately after Fidel Castro's entry into Havana.

Despite its retroactive symbolic and political importance, the actual military struggle of the Cuban Revolution that brought Fidel Castro to power in the 1950s was quite limited. Following Fulgencio Batista's coup d'état of 10 March 1952, Fidel Castro emerged as one of the leaders of the opposition to the dictatorship; that status was confirmed with the attack he led on the Moncada Barracks on 26 July 1953, despite its disastrous results. The romantic failure of this attempt and his subsequent trial (during which he made his famous speech, "History Will Absolve Me") made the twenty-seven-year-old Castro a political star. Following his pardon and subsequent exile to Mexico, Castro organized a group of men (Movimiento 26 de Julio, named after the Moncada Barracks attack) to lead a guerrilla war on the island. The group (including his brother Raul and the Argentine Ernesto "Che" Guevara, whom Castro had met in Mexico) was practically destroyed by regime forces upon landing in Oriente Province. Thanks to a great deal of luck, some favorable media coverage, Castro's considerable charisma, and the ineptness of the dictatorship's army and police, the small band was able to survive 1957 in the Sierra Maestra range in Cuba.

Beginning in 1958, the rebel army began more ambitious, but still quite limited, military offensives culminating in the battle of Santa Clara of 17 December 1958. Partly due to the appeal of the rebels and the venality and atrocities of the regime, popular sentiment and even that of the American embassy had overwhelmingly gone against Batista by midyear. On New Year's Eve Batista resigned and the government fell into Castro's lap. From the beginning, the limited nature of the conflict produced debates on the relative contribution made by the rebels in the *sierra* (mountains) and more middle-class opponents in the *llano* (city). (Despite later attempts to emphasize its role, labor was either a fairly passive actor or actually on Batista's side.) Due to later ideological splits this historiographical debate came to be imbued with considerable fervor and importance. Despite these arguments, the important lesson to be taken from this first part of the Cuban revolution was that authoritarian regimes such as Batista's were not so much defeated as they collapsed from their own contradictions and inadequacies. A similar pattern would follow in Nicaragua and Iran in 1979.

The Second Revolution

The second stage of the Cuban Revolution began with the traditional dynamics of postrevolutionary politics: the breaking of alliances, divisions between moderates and radicals, postponement of elections, and the tightening of power by those with the best access to violence. While large parts of the opposition to Batista had been motivated by hatred of the dictatorship, many among Castro's group also sought to address the social inequities rampant in Cuba. While



Che Guevara remains a powerful revolutionary symbol around the world. Here, a banner with his photo is on sale in Athens, Greece, in 2003.

the island did possess a large (by Latin American standards) middle class and Havana appeared to be a first world city, the gulfs between white and black, rich and poor, and town and country were massive. The revolutionary regime faced the classic quandary of wishing to initiate dramatic social changes while respecting the constraints imposed by electoral democracy. Led by the Castro brothers, the regime chose to privilege the former.

By 1961, indications of a more socialist policy had produced the exile of large parts of the middle class and the active opposition of the United States. Having established his control over the armed forces, Castro was able to openly express his alliance with the USSR and defeat an invasion by U.S.-backed exiles at the Bay of Pigs in April 1961. The agreement between the United States and the USSR following the October 1962 missile crisis guaranteed the regime's longevity.

The next four decades saw the revolution proceed through a series of stages. In the first, political authority was further consolidated by Fidel Castro and the Cuban Communist Party. Until 1970, Cuba resisted the "Sovietization" of many aspects of the economy and the society, but following the disastrous "ten million ton" sugar harvest of that year, the regime's autonomy appears to have declined. Over the next

twenty years, Cuba behaved fairly much like the standard Soviet satellite with two critical exceptions: it had a much more acrimonious relationship with the United States, and it also followed an adventurous foreign policy, with Cuban military involvement in Angola and Ethiopia and considerable aid presence in many parts of Latin America and Africa. The policies of the regime remained fairly stable and the population enjoyed an increasing standard of living (at least as measured in education, health, and basic nutrition, if not consumer goods). Certainly by the mid-1980s, the revolution was widely admired as a social success (if a political and economic disappointment). The one major crisis involved the departure of over 100,000 Cubans from the port of Mariel in the spring of 1980.

Following the collapse of the Soviet Union in 1991, the island entered the euphemistically named "Special Period." This saw declines in production and consumption by nearly half and a real social crisis with hunger not uncommon by 1993–1994. The regime adopted a limited opening to global capital (but not capital from the United States), which produced a significant improvement in living conditions. Reliance on tourism and remittances (now the two biggest economic sectors), however, brought with it social difficulties. Cuba, for example, has not experienced a civil rights

movement or even an oppositional racial discourse. In many ways, racial relations on the island remain frozen in the 1950s, with a significant decline in the black–white gap in living standards but a clearly racist culture and a continued monopoly by whites in high government positions. This also means that whites predominate in the sought-after jobs in the tourist sector. Since the exile population is overwhelmingly white, remittances are also distributed in a racially nonsymmetrical way. This has created something of a “dollar apartheid” in Havana.

Outlook

Whether the revolution, as a political regime or as a social system, can survive the inevitable death of Fidel Castro is not clear. (On 18 February 2008, in failing health, Castro declined to seek reelection; on 24 February 2008 the National Assembly of People’s Power voted Raúl Castro as his successor; the assembly voted unanimously in response to Raúl’s request allowing Fidel to be consulted on defense, foreign policy, and the economy. As of early 2010, Fidel was still alive.) But the level of institutionalization of power is relatively low. Given the proximity of the

now-wealthy exile community and U.S. interests, it is likely that the revolution will not survive in its current state. Perhaps the most significant disappointment of the revolution is that it was unable to escape the historical tendency toward “sultanistic regimes” led by *caudillos* (military dictators). In at least this way, the Cuban Revolution did not represent a new stage of history, but merely a slightly different variant of an old theme in Latin America.

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See also Guevara, Che; Revolutions, Communist

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Fiscal crises and years of feudal repression were among factors leading to a revolution in France (1789–1799) marked by the storming of the Bastille, the guillotining of Louis XVI, and the Reign of Terror. Although the revolution abolished legal privilege based on birth and guaranteed freedom of religion, its legacy is ambiguous; gains must be seen in the context of the suffering produced by denunciations, purges, executions, and war.

The troubles that led to the French Revolution began with the Seven Years' War (1756–1763), a worldwide struggle in which France lost its colonial holdings in North America and India to Great Britain and suffered defeat on the European continent at the hands of Britain's powerful German ally, the kingdom of Prussia. The expenses of war had required King Louis XV (1710–1774) to levy new taxes on his population; and since the nobles were among the richest subjects in the kingdom, he refused to exempt them, despite their historical claims to such fiscal privileges. Paradoxically, this treatment contributed to the education of the king's subjects in egalitarianism. By treating them as equals, the king taught them to think of themselves as equals. Initially the nobility sought only to preserve its own privileges, yet when they saw that the monarchy was inflexible on matters of taxation, they demanded a say in government, thus echoing the Anglo-American principle of "no taxation without representation." In the process they whittled away at absolutism, or the king's right to rule without checks or balances, and prepared the realm for republican government.

Toward a Constitutional Monarchy

In addition to the political arguments raised by fiscal crisis of the Seven Years' War, defeat at the hands of the British provoked a desire for revenge, both at the royal court and in the metaphorical court of public opinion. The American Revolution of 1776 provided the awaited opportunity, and General Washington's victory at Yorktown (1781), which would have been impossible without French support on land and at sea, inflicted a wound on France's great rival. Yet this victory was as expensive as the defeat in the prior war had been, and though Jacques Necker, the finance minister of Louis XVI (1754–1793), had made it appear as though the state's coffers were well stocked, under his successor, Charles Alexandre de Calonne, it became clear that the kingdom was approaching bankruptcy. Calonne presided over the Assembly of Notables, a hand-picked body of nobles, clergymen, and a few wealthy commoners who were expected to approve his plan for a more participatory government in exchange for the privileged classes' greater shouldering of the tax burden. This plan, which involved elected assemblies for some provinces, was a tacit abdication of absolutism. Still, the Assembly of Notables did not consider itself qualified to approve the revolutionary measures, and instead demanded that the king convene a more venerable and representative body for this purpose: the Estates General. After widespread unrest during the summer of 1788, the king called a meeting of that esteemed group for May 1789 at the royal capital of Versailles.

The Estates General consisted of provincial delegates from the three traditional estates, or classes:



Jean-Pierre Louis Laurent Houel (1735–1813), *Prise de la Bastille* (n.d.). A defining moment of the French Revolution was the storming of the Bastille.

the First Estate (the clergy), the Second Estate (the nobility), and the Third Estate (the commoners). Yet it had not met since 1614, after which the increasingly powerful absolute monarchs had succeeded in suppressing this historical check on royal authority. Consequently it was unclear how the three estates would meet, deliberate, and vote. Most nobles favored the procedure of 1614, according to which the estates met separately and voted by order. Yet many members of the Third Estate perceived this as a form of disenfranchisement, since the privileged nobles and clergy would often vote together against the Third Estate. To remedy this injustice some commoners called for voting by head (together as one body) and a “doubling of the Third,” in other words, doubling its representation, measures which would have provided parity between the Third Estate and the other delegates. A more radical proposal came from the Abbé Sieyès, a priest who nevertheless sympathized with the Third Estate and who urged its members to break from the Estates General and declare themselves a national assembly. Sieyès argued that the Third Estate comprised over 99 percent of France’s population and was engaged in its most useful work. The privileged classes, by contrast, were small and parasitical. Therefore the Third Estate should make the laws by which the nation would be governed. Although most delegates were initially reluctant to

adopt such a radical stance, the intransigence of the nobility and the refusal of the king to break the deadlock made the Third Estate increasingly sympathetic to his position.

The Constituent Assembly and the First Constitution

On 17 June a group of deputies from the Third Estate followed Sieyès’s advice and declared themselves the National Assembly, the sole body authorized to make the nation’s laws. They invited members of the other estates to join them, but only as citizens representing the nation, not as delegates speaking on behalf of their castes. Strictly speaking, this was the truly *revolutionary* act of the French Revolution, since there was no legal precedent for acting in such a manner. (The subsequent storming of the Bastille prison fortress by Parisian crowds on 14 July 1789 showed the force of popular anger, which posed a threat both for the Third Estate deputies and the defenders of the old order, but it was not in itself a revolutionary act.) On 20 June the revolutionary assembly found the doors of its meeting hall locked and proceeded to the most convenient space available, an indoor tennis court. There the delegates took their famous oath not to disband until they had written a constitution for France. After some

The young are generally full of revolt, and are often pretty revolting about it.

• Francois la Rochefoucauld-Liancourt (1613–1680)

hesitation, the king accepted this act of defiance, but ordered the deputies of the other two estates to join the National Assembly, thus creating a more conservative body than would have emerged from the initial revolutionary assembly alone.

Indeed, the National Assembly, otherwise known as the Constituent Assembly, created a highly undemocratic constitution, which was completed in September 1791. By establishing stringent property qualifications for voting rights and still higher qualifications for eligibility for public office, the deputies ensured that ordinary people would have little say in the laws that governed them. Only one-sixth of men over the age of twenty-five were eligible to vote. Women, servants, itinerant workers, and slaves (until their emancipation in February 1794) were excluded from political participation. The contradiction between the discriminatory measures of the lawmakers and their egalitarian rhetoric—especially the Declaration of the Rights of Man and Citizen, passed in October 1789—fueled popular unrest. Consequently, alongside the juridical revolution of the legislature, a popular revolution raged in the streets of Paris and other cities, as well as in the countryside.

Despite the limits the Constituent Assembly attempted to place on the Revolution, and despite the prominent role of the king in what was essentially a constitutional monarchy, Louis XVI was averse to the Revolution. He was particularly offended by its nationalization of church property, an expedient designed to back a new paper currency, and its reorganization of the clergy into civil servants required to take an oath to the nation. He therefore plotted to escape with his family to the Austrian Netherlands (today Belgium), where royalist forces would protect him until such time as the Revolution could be suppressed. He was captured by the revolutionary national guard near the border and returned to Paris on 20 June 1791. His attempted flight further discredited the idea of constitutional monarchy and emboldened radicals determined to transform their country into a republic.

Warfare Abroad and the Convention at Home

The delicate monarchical system survived little more than a year after the king's abortive flight. The Constituent Assembly disbanded following the fulfillment of its oath to write a constitution for the nation, and in October 1791 a Legislative Assembly was elected. While this legislature considered questions of domestic importance, it became increasingly preoccupied with international matters. A party of radical "patriots" sought war against Austria and Prussia, countries that were harboring royalist émigrés and issuing hostile statements regarding revolutionary developments in France. The patriots found unlikely allies in conservative royalists within the court who encouraged the march to war for very different reasons. The latter expected an Austro-Prussian victory over the French army, many of whose officers had emigrated at the outset of the Revolution. Thus in April 1792 the king asked an eager Legislative Assembly to declare war on Austria, with other European belligerents joining the fray in the succeeding months.

War transformed the Revolution profoundly. Not only did the revolutionaries use the threat of foreign troops to whip citizens into a patriotic frenzy; the mobilization of troops created a volatile situation in which armed men might turn their weapons against real or perceived domestic threats. As volunteers from the provinces came to Paris to prepare for assignment to the front, they encountered the most radical elements of the urban revolution. They heard the speeches and read the newspapers of the *sans-culottes*, those "without breeches" (i.e., without the stylish pretensions of the rich), and before taking on Austrian troops they prepared to fight the aristocrats in their midst. Convinced that neither the king nor the assembly would bring liberty and equality, the most radical revolutionaries, now fortified with weapons, mounted an insurrection on 10 August 1792.

After a bloody battle between insurgents and the king's personal guard, the insurgents emerged victorious. The royal family found itself under arrest, and the Legislative Assembly, now fearful of the forces it had



summoned into motion, abolished the undemocratic Constitution of 1791 and called for the election of a new legislature known as the Convention. Although women were still excluded from the vote, and indeed would not obtain it in France until 1946, the elections of 1792 were the first application of the principle of “one man, one vote” in modern world history.

A Republic Is Born

Unfortunately, this dramatic movement in the direction of democracy did not solve the country’s political problems. During the month and a half between the fall of the monarchy and the first meeting of the Convention, France was governed loosely by the outgoing Legislative Assembly and a self-proclaimed municipal government known as the Commune. In the first week of September, in anticipation of an Austrian march on Paris and an impending massacre of revolutionaries by brigands lurking in the city’s prisons, self-appointed judges presided over the judicial murder of over a thousand prisoners, many of them priests whose only crime had been refusal to take the obligatory oath to the nation. When the feared invasion by foreign armies failed to materialize and Paris calmed down, the newly elected Convention, which declared France a republic early on 22 September, was nevertheless preoccupied with the troubling question of the king’s fate. After divisive debates during the fall and winter of 1792–1793, on 21 January 1793, Louis XVI went to the guillotine, a decapitating instrument widely hailed as humane because prior to the Revolution beheading had been a privilege reserved for the high-born; more painful executions had been the lot of the common folk.

For many observers in France and around the world, this act of regicide took the Revolution beyond the pale. For devout Catholics in the Vendée region in western France, the killing of the monarch, whom God had chosen to rule over the kingdom, was not merely unjust; it was sacrilege. Partly as a result of this outrage, the revolutionary government found itself involved in a protracted civil war in the Vendée, one that would kill at least on hundred thousand

people. Civil war elsewhere in France, particularly in the south, resulted from conflict between centralizing Jacobins, who wished to see Paris take the lead in governing the country, and decentralizing “federalists,” who sought greater autonomy for the provinces. Both sides supported the republic and opposed monarchy, but they fought each other as bitterly as revolutionaries fought royalists.

The Reign of Terror

War, both foreign and domestic, provided justification for the revolutionaries’ most repressive laws. On the strength of the belief that traitors were endemic, the Convention passed a series of laws depriving suspects in political cases of due process and leading to thousands of judicial murders known as the Reign of Terror. Yet this tyrannical development was not simply a top-down policy. It had its roots in popular fears and resentments. In September 1793, during one of a series of insurrections that characterized the Revolution, armed crowds demanded the punishment of “traitors,” who were believed to be profiting from the war and hoarding grain while the people went hungry. The Convention responded with the proclamation, “Terror is the order of the day.” Institutionally the Terror was centered in the Committee of Public Safety, a group of twelve men who technically reported to the Convention but who for ten months dominated it. Maximilien Robespierre (1758–1794), the most infamous member of this committee, went to the guillotine himself when his enemies, anticipating their own execution, denounced him before the Convention and succeeded in having him prosecuted for treason. Shortly after Robespierre’s death on 28 July 1794, the legal apparatus of the Terror was dismantled. At least fourteen thousand people had fallen victim to it during less than a year.

The following year the Convention passed a new constitution, known as the Constitution of the Year III. (The revolutionaries had established a new calendar beginning with the declaration of the Republic in September 1792.) This constitution abolished universal male suffrage and restored property qualifications

for political rights. It also dispersed power so widely between a five-man executive branch (the Directory) and a bicameral legislature, neither of which was responsible to the other, that deadlock was the inevitable result. The only way to effect significant political change under the Directory regime (1795–99) was to mount coups d'état. Thus civilians made alliances with generals, who were increasingly powerful as France reversed early losses in the war with European rivals and began to conquer significant portions of Italy, Germany, and the Low Countries. Napoleón Bonaparte, who overthrew the Directory in the coup d'état of 18 Brumaire Year VIII (9 November 1799) and ruled as First Consul (and later as emperor) of a new, autocratic regime, was only the last and most successful in a series of military men who participated in such anticonstitutional adventures.

A Continuing Legacy

The French Revolution left an ambiguous legacy. It permanently abolished legal privilege based on birth and guaranteed freedom of religion. (France was the first European country to recognize the civic equality of Jews and Gentiles.) Other gains were more tenuous. With the exception of the election of the Convention, revolutionary France failed to provide real democracy, as either property qualifications or the atmosphere of political terror prevented the voice of the people from being heard. Napoleón reversed the 1794 abolition of slavery in 1803, and permanent abolition passed only during the revolution of 1848. Democracy, moreover, was limited to men, though the principle of equality inherent in revolutionary thinking became a central feature of the female suffrage movement and French feminism more generally. And the advantages of the Revolution must be seen

in the context of the pain and suffering produced by denunciations, purges, executions, and war. Whether the gains of the Revolution might have come to pass less violently, in other words, whether the Revolution was necessary, has been and is still much debated. Whatever one's position, the Revolution undoubtedly cast a long shadow over the subsequent two centuries, not only in France but around the world. Subscribers to revolutionary doctrines as well as conservatives, whose ideology was born of a determination to prevent revolution, would not be who they are if it were not for the French Revolution.

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See also Napoleonic Empire; Revolution—Haiti

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Revolution—Haiti

The revolution in Haiti began in 1791 and ended in 1804 with the establishment of the Republic of Haiti. It is the only slave revolt in history that led to the founding of an independent nation. The Republic of Haiti was the second republic (after the United States) established in the Americas.

Haiti is a small island nation that occupies about one-third of the island of Hispaniola in the Caribbean Sea. It was claimed for Spain by Columbus in 1492 and became a Spanish colony. The indigenous Indian population was soon wiped out by disease and the hardships of slavery and was replaced by slaves imported from West Africa. In 1697 Hispaniola was divided into French and Spanish sectors, with the French colony called Saint Domingue. Saint Domingue quickly became France's richest colony, with a large slave force working on plantations to produce sugar, coffee, cocoa, indigo, tobacco, cotton, sisal, and other agricultural products, all of which flowed exclusively to France. At the time the revolution began, the colony's population comprised about 20,000 whites, 30,000 free people of color (including many of mixed African and French ancestry), 500,000 black slaves, and at least 10,000 Maroons (escaped slaves who lived in settlements in the mountains). Slaves outnumbered nonslaves by about ten to one.

The start of the revolution is conventionally dated to 21 August 1791, but the origins of the revolt go back further in time and are complex. First, people in the colony were already divided about their allegiance to France. For a number of years prior to 1791, many whites and free people of color had been

becoming more and more disenchanted with French rule and especially French control of the economy, with all goods flowing to and from France. However, there were also divisions in both groups over loyalty to France, with some remaining strong supporters of French rule. Second, the slave system in Haiti was especially harsh (slaves in other colonies feared being sent there), and there had been frequent slave revolts, while the number of slaves fleeing to Maroon settlements in the mountains was increasing each year. Third, the French Revolution of 1789 weakened French control and created a cry for freedom in Haiti. Finally, Haitian slaves had developed a rural culture of their own centered on their religion (vodun) and extended families. Although often depicted as witchcraft, vodun was and remains a religion with its own set of beliefs, practices, and religious specialists.

What history now sees as the revolution began following a vodun ceremony in which a vodun priest named Boukman and several other men were designated leaders of the revolt. The bloody and destructive revolt pitted black slaves against white plantation owners. Interventions by the French failed, and whites and mulattos fled to the north. Some calm prevailed in 1796 when the religious healer Toussaint Louverture (c.1743–1803) took control in the north and restored order and stimulated some economic activity. In 1801 Napoleon sent 34,000 troops to the island under the command of his brother-in-law, Charles Leclerc. This force failed to retake the colony, although Louverture was taken to France where he died the next year. The following three years were marked by unrest, rebellions, massacres, and general civil war. On 1 January 1804, a new leader,

My grandfather was a voodoo priest. A lot of my life dealt with spirituality. I can close my eyes and remember where I come from. • Wyclef Jean (b. 1972)



January Suchodolski (1797–1875), *Battle at San Domingo* (n.d.). The slave revolt in Saint Domingue, on the island of Hispaniola in the Caribbean Sea, eventually led to the creation of the Republic of Haiti in 1804.

Jean-Jacques Dessalines (c.1758–1806), declared the independent Republic of Haiti. In 1806 Dessalines was assassinated, leading to renewed north-south civil war, with Henry Christophe (1767–1820) rising to power. Christophe instituted authoritarian rule, and fighting continued on and off until Christophe's death by suicide in 1820.

The years of revolt, massacres, and civil war left Haiti in a dismal state. At least 150,000 people died during the revolution. The new nation had no money, and its plantations and plantation system were in ruins. Land was distributed to individual farmers, but many of the plots were too small to be economically viable. The republic was short-lived and was followed by a series of dictatorships: between 1843 and 1915 Haiti had twenty-two leadership changes. Most of the people remained extremely poor, although there was a small, rich elite that ruled from the north. Mulattos fled to the north and dominated trade, collecting taxes on both imports and exports.

Haiti's situation was not helped by the hostility of the major world powers—the United States, Britain, Spain, and France—all of whom still benefited from slavery and saw the successful revolt as a threat to their coercive labor systems. The United States

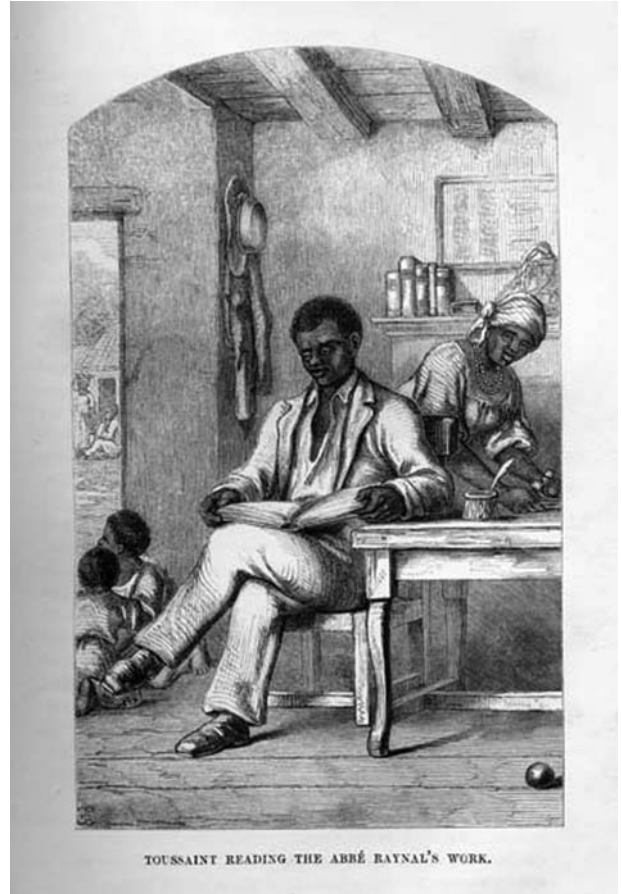


Illustration of Toussaint Louverture reading the work of Abbé Guillaume Raynal, the French historian who examined the effects of colonialism on indigenous populations.

was right in this regard, as many slave revolts in the United States were modeled on those in Haiti. Haiti also became the focus of debates about the wisdom of emancipation for slaves and the ability of former slaves to rule themselves. The political instability and weak economy also meant that Haiti remained agricultural (even into the twenty-first century), while Europe and other nations in the Americas industrialized.

In 1838 France granted Haiti recognition after Haiti agreed to pay France 150 million French francs, an outlay that further damaged Haiti's already weak economy. The United States offered recognition in 1862; it occupied the island from 1915 to 1934 following years of Haitian political instability. After series of weak governments in the following decades,

the nation came under the dictatorial rule of the Duvalier family from 1957 to 1986. Since then, it has remained poor and has continued to experience political instability, despite or because of (depending on one's point of view) the intervention of the United States. Yet despite its many serious problems, Haiti has developed a rich artistic and literary tradition that is recognized around the world. Haitian people continue to demonstrate their resilience to the world as they rebuild their country and their lives after a devastating earthquake in January 2010,

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See also French Empire; Labor Systems, Coercive; Napoleonic Empire; Raynal, Abbé Guillaume; Slave Trades; Sugar

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Revolution—Iran

The Iranian Revolution of 1979, also known as the Islamic Revolution, involved the overthrow and exile of the country's Pahlavi-dynasty monarch, Mohammad Reza Shah. Led by Ayatollah Ruhollah Khomeini, the revolution gave rise to the founding of the Islamic Republic of Iran, with Khomeini assuming the role of Supreme Leader, the most powerful religious and political figure in Iran.

The Iranian Revolution of 1979 was a defining moment in modern Iranian history. It was a precursor to bringing Islam and Shi'a clerics into the center of political authority, an unprecedented notion in the Middle East and the Islamic world of modern times. (Shi'a Muslims are the branch of Islam comprising sects that believe Ali and the prayer leaders as the only rightful successors of the Prophet Muhammad.) The Iranian Revolution had its origins in several preconditions that were intertwined with other issues: political oppression, modernization/Westernization of Iran, and foreign dependency, eventually leading to the collapse of Mohammad Reza Shah's political order and its replacement by an Islamic republic.

Political Oppression

Political oppression in Iran can be traced to Reza Shah, founder of the Pahlavi dynasty. His autocratic role, particularly after 1930, is readily identifiable as an undermining of the constitution, especially when one notes how the deputies of the Majles (Parliament) were handpicked and how the appointments of the ministers were based upon personal loyalty to the shah (sovereign), not to the general public. In

addition, events brought about changes to the political atmosphere of Iran during World War II. Germany invaded the Soviet Union, and Iran, having already declared neutrality, refused the Soviet and British request that the allied forces be allowed to transport lend-lease material through its territory to the Russians. This refusal by Iran turned the request into an ultimatum and eventually led to invasions and occupation by England and Russia. Reza Shah was forced into exile and replaced with his twenty-two-year-old son, Mohammad Reza Shah.

The young shah's lack of political experience inaugurated a period of political freedom that subsequently produced organized political parties with the authorization to publish their own newspapers, naturally giving birth to a new era of ideological rivalry between political contenders. This rivalry ultimately underwent a series of internal conflicts among the nationalists who dominated the Majles under the leadership of Dr. Mohammad Mosaddeq and the pro-shah faction. To consolidate the nationalists' position in the government, Dr. Mosaddeq in 1949 created the National Front, a coalition representing different groups and political parties. Its primary goal was to restrict foreign interests, particularly the British domination and exploitation of the Iranian oil industry, as well as to safeguard the 1906 constitution that restricted the power of the monarch. The National Front's popularity reached great heights when Dr. Mosaddeq gained the approval of the Majles to nationalize the Anglo-Iranian Oil Company in 1951 and soon thereafter became the prime minister of Iran. British officials called for a boycott of Iranian oil, and through worldwide diplomatic maneuvers, major oil companies agreed to boycott Iranian oil.



Jimmy Carter with King Hussein of Jordan, the Shah of Iran, and Shahbanou (empress) of Iran, on 31 December 1977, two years before the start of the Iranian Revolution of 1979.

This boycott nearly brought the Iranian economy to a standstill. The economic hardship of the early 1950s caused a severe strain on the implementation of all of Mosaddeq's promised domestic reforms and, in turn, precipitated a decline in his popularity.

Fearing the spread of nationalization of domestic industries throughout the Middle East, along with the spread of Communist ideology in Iran, particularly through the popularity of the Tudeh (the masses) Party, the U.S. CIA and British intelligence executed a military coup d'état against Dr. Mosaddeq's government in August of 1953. After the coup the shah was returned to Iran from his self-exile and resumed control over the nation. He also settled the oil dispute through a consortium of eight European and U.S. companies by agreeing to fifty-fifty profit sharing by the Anglo-Iranian Oil Company. With the throne restored and the support of the United States, the shah began to take extreme measures to ensure the longevity of his dynasty. The first step toward this goal was the creation of an internal security force, with the help of the U.S. CIA and FBI, known as "SAVAK" (Sazeman-e Amniyyat va Ettela'at-e Keshvar or Organization for State Intelligence and Security). Its aim, for all intents and purposes, was to crush and demoralize opposition of any political nature, manipulate the behavior of citizens, and control and redirect public opinion in the interest of the regime.

In 1958, in response to mounting pressure for democracy, the shah created a two-party system consisting of the Melliyn (Nationalist) and Mardom (People) parties, neither of which constituted a worthy opposition party. However, in 1975 the two-party system merged into a single-party system known as "Rastakhiz" (resurgence), with membership required for all government employees and other people who were eligible to vote. Elections to the Majles were held; however, candidates had to have approval of SAVAK. Therefore, true representation of the people, via parliament, never emerged under the shah's regime. Mass censorship of television broadcasting, newspaper circulation, books, and journals and imprisonment of intellectuals, students, and trade unionists boiled over into total political frustration, resulting in mass demonstrations, strikes, and armed resistance against the shah's regime by the late 1970s.

Modernization/Westernization

The oil settlement of 1953 gave the shah the revenue to continue his father's aspirations of modernization. Since the First Seven-Year Plan (1948–1955) did not achieve its expectation, the shah initiated a second Seven-Year Plan which began in 1955. However, due to corruption and mismanagement, the plan did not achieve its expected goals. To demonstrate his popularity among Iranians and decrease the pressure for

reforms from the administration of U.S. president John F. Kennedy, the shah announced his six-point program popularly known as the “White Revolution” (or the “Revolution of the Shah and the People”) in 1963. It encompassed land reform, the sale of government-owned factories to finance land reform, women’s suffrage, the nationalization of forests, a national literacy corps, and profit-sharing plans for recruits in industry.

The goals of land reform were twofold: to gain support from the peasants living in agricultural villages of Iran and to eliminate the big landlords as an influential class. Although some big landlords lost their prominence, many retained their large holdings and became modernized commercial farmers and eventually were incorporated into the shah’s political elite. Land reform also failed to give sufficient amounts of land and resources to the majority of peasants; thus, a massive migration to the cities began, but the cities were not equipped to cope with the massive influx.

The national literacy corps was another important component of the White Revolution. The shah realized that for Iran to become modernized, the people of Iran would have to become better educated. Thus, high school graduate conscripts were recruited to spend fifteen months, in lieu of their compulsory military service of two years, in rural villages or small towns teaching in primary or adult literacy schools. With the help of the literacy corps and the opening of more schools, technical colleges, and universities, the shah succeeded in increasing the national literacy rate from 14.9 percent in 1956 to 74.1 percent by 1976. This increase was a major accomplishment by any standards. Nonetheless, these reforms undermined the religious schools and were resented by the cleric class, who had until then held the monopoly on education through their parochial schools. In addition, a higher literacy rate meant that political awareness in the cities, rural areas, and small towns would not be uncommon.

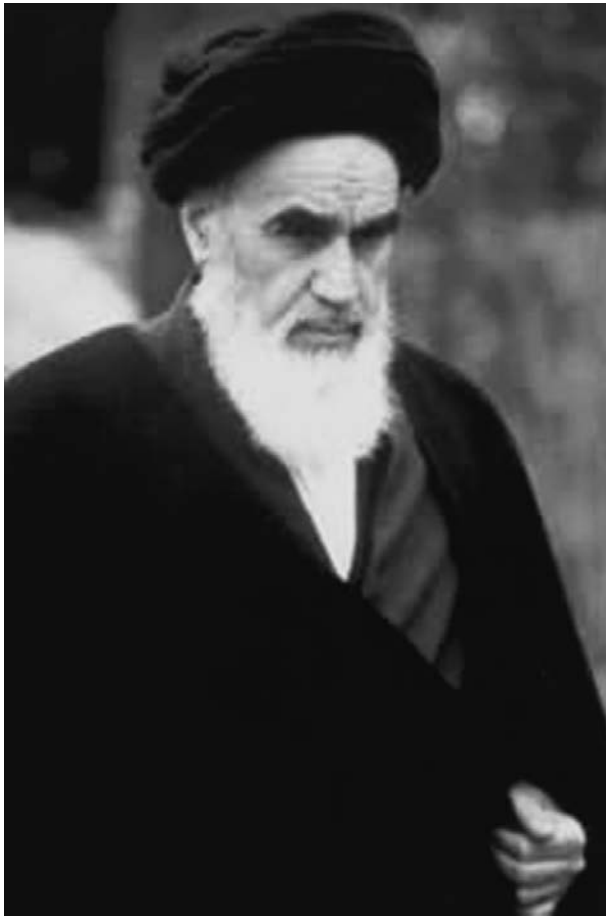
The women’s suffrage component of the White Revolution changed the political status of Iranian woman forever. Clerics and conservative families who did not like the emancipation of Iranian women opposed

this suffrage. Consequently, uprisings occurred in the theological seminaries and among shopkeepers in major cities. Clashes between the government and the opposition resulted in imprisonment and exile of the opposition leaders, including a less-prominent clergyman, Ruhollah Khomeini (1902–1989), who would go on to play a major role and become the leader of the 1979 revolution.

Along with the aforementioned reforms, other social and economic reforms were undertaken to further modernize the country. Among the most notable reforms was improvement of the infrastructure of Iran, including the construction of better medical facilities, improvement in the accessibility to health care, reforms in family laws, and expansion of women’s rights. The modernization and secularization of Iran made the shah’s leadership powerful and secure; however, at the same time his autocratic rule disassociated him from an important segment of society. Although the economic and social reforms brought many improvements, they also alienated many groups, such as the Bazaaris (traditional merchants), who consisted of hundreds of thousands of major merchants, shopkeepers, and artisans who could not compete in a Western-style economy. Lack of a viable political platform also alienated many intellectuals and students.

Foreign Dependency

The British and Soviets had dominated Iranian politics until the early 1950s, but the United States began to alter the role of the two competing powers in Iran after the 1953 military coup. The Truman Doctrine aimed to impede the spread of Communism in Southeast Asia and the Middle East. Because Iran had an extensive border with the Soviet Union, successive U.S. administrations saw Iran as a candidate for being influenced by Communist ideology. The first sign of the U.S. administration’s curbing Soviet influence came in October 1955 when Iran signed and joined the Baghdad Pact along with Iraq, Turkey, Pakistan, and Great Britain. Creation of this pact would ensure Iran of the U.S. military and economic assistance that it badly needed. This pact, along with an earlier



Ayatollah Khomeini, leader of the 1979 revolution.

U.S.-Iran mutual defense agreement, set up Iran to receive great quantities of military equipment.

During 1972 the tide turned in favor of the shah. Great Britain had pulled out of the Persian Gulf due to worldwide military cutbacks, and this vacuum was soon filled when the administration of U.S. president Richard Nixon underwrote the shah as the policeman of the Persian Gulf. This underwriting gave Iran *carte blanche* to purchase up-to-date non-nuclear weapons from the United States. During the 1973 meeting of the Organization of Petroleum Exporting Countries (OPEC), when the shah pushed to increase oil prices, in light of the 1973 Arab-Israeli War and an ongoing oil embargo, the timing was right for him to strengthen his presence as a leader in the region. With increased OPEC oil prices, the Iranian oil revenue augmented from \$2.3 billion in 1972 to \$20.5 billion in 1977, dispersing any monetary obstacle that might have prevented the shah from strengthening his military forces.

With the increase in oil revenue, Iran's annual military budget increased from \$1.8 billion in 1973 to \$9.5 billion in 1977, and the size of the military increased to 410,000 troops. The purchase of arms from the United States alone totaled \$6 billion by 1977. In 1976 the two countries signed a bilateral agreement that anticipated that non-oil and non-military trade between the two countries would reach \$15 billion by 1981. By 1978 more than fifty thousand U.S. military advisors and civilians were residing in Iran with extraterritorial rights (a privilege of immunity from local law enforcement of the host country). Ironically, the shah had now reinstated the same extraterritoriality act that his father had so fervently abolished in 1928. In general, the Iranian people never forgave Mohammad Reza Shah for that reinstatement.

Other factors leading to the Iranian Revolution included inflation, widespread corruption, inequities in income distribution, and the failure of political reforms. Hence, by 1978 a rapidly growing and resounding discontent existed among a majority of Iranians. Strikes and demonstrations became daily occurrences throughout 1978 and as a result hundreds died in clashes with riot police forces. The shah's inability to curb the situation encouraged the opposition to become more vigorous in their demand to end the monarchy. With the hope that a new government may be able to solve the political problems, the shah appointed one prime minister after another. They were, however, either old acquaintances or army generals who were already despised or mistrusted by the opposition. His final attempt was to ask Dr. Shahpur Bakhtiar, an opposition figure that had gone to jail for his anti-shah activities, to form a new government. Even though, on 3 January 1979, the parliament gave its approval to the new government, it was too late for Bakhtiar to gain the trust of the people and to remedy the situation. As a result, the shah realized that his departure from the country might help ease the discord, so on January 13, 1979, he named a Regency Council to take his place while he was out of the country. His departure on 16 January 1979,



however, marked the end of the Pahlavi era and the monarchy in Iran.

Meanwhile, Ayatollah Ruhollah Khomeini who was unceremoniously forced out of Iraq, where he had been in exile since 1963, was given permission to go to Paris. Suddenly the world's major media personalities discovered a simple religious man who opposed the tyrannical leadership of his native country. Khomeini's message was broadcast to the world and specifically to Iranians via various media outlets. His message was very simple: abdication of the shah and reinstatement of the Iranian Constitution of 1906. In Paris, Ayatollah Khomeini set up an Islamic Revolutionary Council with the task of establishing a transitional government, and a few days after his arrival in Iran on 1 February 1979, he appointed Mehdi Bazargan, a devout Muslim and supporter of Dr. Mossadeq and an anti-shah activist, as the prime minister of a provisional government, even though Dr. Bakhtiar's government was still in power. Dr. Bakhtiar and his government became increasingly unpopular to the point that he was forced underground and eventually fled the country on 10 February 1979.

As with any other political revolution, in Iran a period of uncertainty and political chaos ensued. Almost overnight, and continuing throughout the month of February, hundreds of Islamic Revolutionary courts headed by clerics were set up throughout the country to deal with the former regime's loyalists. High-ranking military officers, former prime ministers, ministers, and any who opposed the new government were summarily tried and executed without having any legal representation. Along with the Islamic courts, the formation of a Revolutionary Guard Corps with recruits drawn primarily from the lower classes and those loyal to Ayatollah Khomeini and Islam, was set up to defend the revolution against any possible military coup or civilian opposition. In order to abolish any sign of the old regime, on 30 and 31 March 1979, Ayatollah Khomeini declared a national referendum to choose the future form of the Iranian government. The choice was either monarchy or an Islamic republic. With this limited

choice, after the people had just gotten rid of the monarchical system, they overwhelmingly approved the formation of an Islamic republic over a monarchy. Soon after, the Council of Experts, mostly composed of clergy, was set up by Ayatollah Khomeini to draft a new constitution. The most debatable aspect of forming the new constitution was the principle of Velayat-e Fqih (the rule of jurist consult). In Shiism, it is believed that in the absence of the twelfth Imam—who was the direct descendant of prophet Muhammad through his daughter, Fatima, and his son-in-law and cousin Ali, and went into occultation and will return as the Mahdi or Messiah—the most learned jurist, one who knows the divine law and the will of the Mahdi, should be the supreme head of the government. With the approval of the new constitution, Ayatollah Khomeini was declared as such a jurist and as head of the new government was given more power than any other previous leader in modern Iran.

By November 1979, it was Ayatollah Khomeini through his mouthpiece, the Islamic Revolutionary Council, who was running the country, not Prime Minister Bazargan and his cabinet. The final showdown between the two political rivals came to a head with the seizure of the American Embassy by so-called "Students Following the Line of the Imam [Khomeini]." Bazargan and his moderate supporters adamantly opposed and condemned this act and demanded an end to the seizure of the embassy and the release of American Embassy personnel. But Ayatollah Khomeini eventually supported the students and called it Iran's second revolution. Two days after the takeover of the American Embassy, Prime Minister Bazargan resigned and Ayatollah Khomeini and his high-ranking clerics began to consolidate their political, economic, and social power in Iran.

In an attempt to take advantage of instability following the revolution, in September 1980, neighboring Iraq went to war with Iran seeking to end the revolution before it could take firm hold. Despite some early gains, Iran managed to recapture most of its lost territory by mid 1982, but the war dragged

on at great cost to both sides until August 1988. In effect, the war served to shore up support for the new government and the Islamic Revolution more generally.

The legitimacy of the Iranian government and the role of the Supreme Leader and the Guardian Council have not really come under serious challenge until the disputed presidential election of June 2009. Marred by claims of fraud, the disputed election result triggered mass demonstrations against the conservative incumbent, Mahmoud Ahmadinejad, and in support of opposition reform candidate, Mir-Hossein Mousavi. The protests met with a violent response from authorities and resulted in an unconfirmed number of deaths. While the election result is likely to stand, thirty years after the revolution and the establishment of the Islamic republic, the

legitimacy of the government is seriously being called into question.

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Revolution—Mexico

The Mexican Revolution (1910–1920) stemmed from several sources: the alienation of elites who saw their political authority dwindling, the bitterness of peasants and workers who faced economic setbacks and famines, the dictatorial nature of the regime that had promised democracy, and the rise of economic nationalism. Among its successes was the return of more than 25 percent of the nation's land to the peasantry and rural workers.

During the first years of the twentieth century a wave of political upheavals swept across much of the world. The principal centers of upheaval—Russia and Iran in 1905, China in 1898 and 1911, and Mexico in 1910—were all centers of ancient civilizations undergoing radical transformations from

long-standing systems of cooperative industrial and agricultural production to modern capitalism and foreign influences. In Mexico during the years immediately preceding the upheavals, foreign capitalists backed by most of the domestic elite had taken over the communications, transportation, military, mining, timber, and textile industries, while both groups had taken over formerly village-owned agricultural and ranching lands on a massive scale. At the same time the government had repressed popular resistance and greatly increased dictatorial powers at the expense of the popular classes.

The new elite amalgam promoted commercial production at the expense of the rural workers who had enjoyed wide land-use rights for hundreds of years. The amalgam reorganized the peasants and rural workers, moving them from less commercialized



Mexican insurrectionists aim rifles from a mountain during the Mexican Revolution circa 9 March 1911.
Library of Congress.



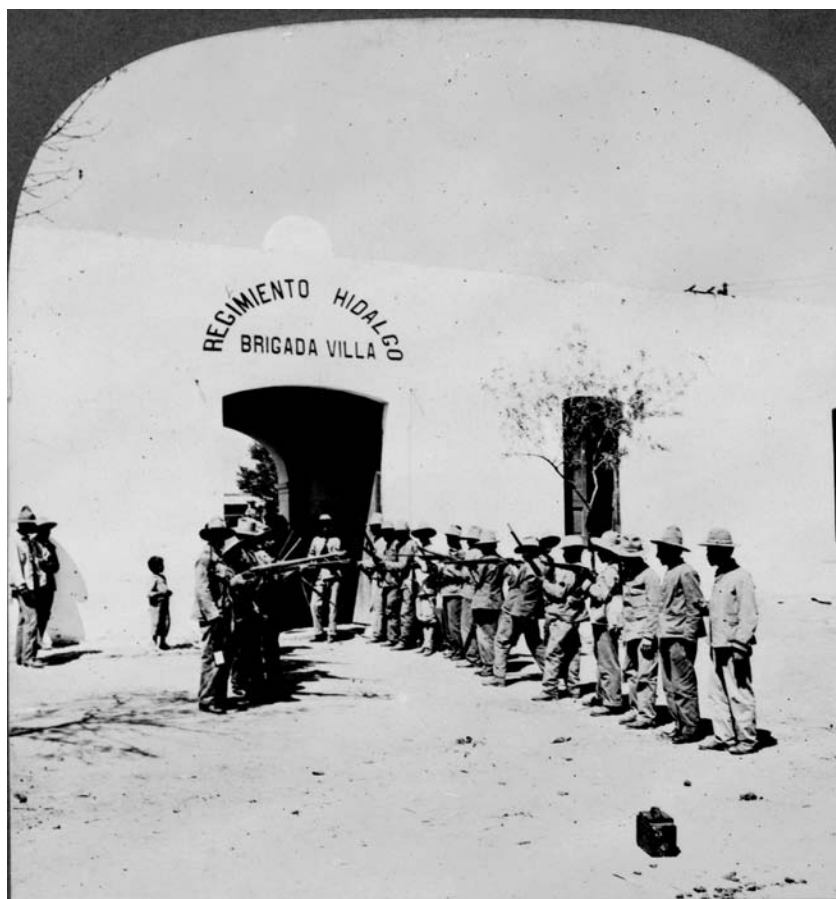
Ex-president of the Republic Francisco I. Madero leaves the National Palace on 9 February 1913 with the forces of General Félix Díaz. A dead soldier lies on the street in the foreground. Library of Congress.

village properties and commercial estates, small mines, and artisan-run patios into larger capitalized entities. Foreign-born supervisors (low level management such as foremen) monopolized local authority and enjoyed wage differentials over the workers at an average of twenty-to-one, while managers (those who head an entire plant, mine, or other operation) earned as much as two hundred times their workers' wages. Foreign skilled workers enjoyed preferential treatment in an apartheid setting of segregated housing, unequal salaries, and discriminatory work assignments.

The Mexican Revolution (1910–1920) stemmed from several sources: the alienation of the provincial and local elites who saw their political authority eroded, the dashed hopes of the peasants and workers who faced economic setbacks and even crushing famines instead of the promised well-being, the increasingly dictatorial nature of the regime instead of an expected development of democracy, and the rise of economic nationalism. The revolution began on 20

November 1910, when Francisco Madero, a man of wealth from the northern state of Coahuila, called for all Mexicans to rise up and overthrow the dictatorship. He promised political democracy, equality before the law, and agrarian reform.

Three main groups emerged in the struggle against the dictator Porfirio Díaz. The first group, reflected by Madero and later by Coahuila Governor Venustiano Carranza and the Sonoran oligarchs Alvaro Obregon and Plutarcho Elias Calles, comprised the regional and local elites, who banded together for federalism, local and states' rights, and a nationalism with a more balanced distribution of power between themselves, the national government, and the foreigners. The second group comprised the leaders of the rural working people: Emiliano Zapata, Francisco "Pancho" Villa, and myriad others. The rural masses, which made up 80 percent of the population, had seen their share of land ownership fall from 25 percent to 2 percent under privatization, and their leaders sought



Armed soldiers line the entrance to General Francisco “Pancho” Villa’s headquarters in Juarez, 1914. Library of Congress.

the return of the land to the communities. The third group included the heads of organized labor, many of them anarchists. During the revolution they created the 150,000-member Casa del Obrero Mundial (House of the World Worker) and committed 5,000 soldiers and more than 500 women field nurses, known as *acratas* (those opposed to all authority) to the struggle. They wanted workers self-management in the factories, land for the peasants, and a reduced role for foreign capitalists. The differences between these three groups and the defenders of the ancient regime led to a complex civil war.

Madero Assumes Power

By the spring of 1911 widespread revolts by rural workers and peasants in support of Madero seized local power and were growing larger. Diaz quickly resigned with an admonition that “Madero has unleashed a tiger—let us see if he can ride it.” Assuming power in late 1911, Madero went to war with rural revolutionaries led by Emiliano Zapata in the sugar plantations

of south-central Mexico. Madero refused to return the privatized lands or to restore local governments. Then, in February 1913, the army staged a *golpe de estado* (coup d’état) and killed Madero. This killing led to the nationwide civil war. The rebels made Madero a martyr and rallied the public. This uprising spread rapidly and took on special strength in the North, where the rebels could buy arms by selling confiscated cattle to U.S. dealers. Meanwhile, U.S. President Woodrow Wilson provisioned Mexican dictator General Victoriano Huerta with arms until September.

During 1913 and 1914 the Villistas, an armed movement centered on the states of Chihuahua and Durango, formed under the leadership of town elites, cowboys, miners, and lumberjacks in favor of agrarian reform and political freedom and against debt peonage (form of bondage in which the laborer is held in place through the employer’s control of his debt accounts which are not paid off) and segregation. Meanwhile, the state elites of Coahuila, Sonora, and Sinaloa who had supported Madero rallied behind Venustiano Carranza, the former governor of Coahuila. Carranza, like



This broadside shows a full-length portrait of General Porfirio Díaz, facing left in military uniform. The text conveys sympathy for Díaz, calls him a hero of the Mexican nation, and asks for his return to his country from Paris. Library of Congress.

Madero, favored political liberalism. During 1913 and early 1914 Villa's forces marched southward until they controlled most of the North. Then, in April 1914, U.S. armed forces occupied Veracruz with heavy civilian casualties. During the summer the military government collapsed, but in November the U.S. military decided to support Carranza, and a new civil war began. The middle- and working-class-led Zapatistas and Villistas faced the forces headed by Carranza and the northern elites.

In a monumental step Alvaro Obregon, the military commander of Carranza's forces, gained the support of the Casa del Obrero Mundial by promising that the Mexican Revolution would be the first step toward worldwide proletarian revolution. Disorganized and poorly armed, Carranza's forces fled to the state of Veracruz. There, on 23 November 1914,

U.S. general Frederick Funston supplied them with ammunition and arms. By the end of 1914 Obregon commanded more than twenty thousand troops calling themselves "Constitutionalists" because they planned to reinstate the liberal constitution of 1857. As Obregon's troops defeated the Villistas and Zapatistas, Obregon allowed the Casa del Obrero Mundial activists to organize the workers in each city that his forces captured.

The Tide Turns

In January 1915 the fight between the Constitutionalist and Villista armies at El Ebano turned the tide in favor of the Constitutionals. Using several thousand "red battalion" troopers from the Casa del Obrero Mundial, Obregon crushed the Villistas by using the modern artillery and machine guns provided by the United States. Meanwhile, Carranza announced an agrarian reform program designed to undercut support for the Villistas and Zapatistas. In the spring of 1915 the Villistas and Constitutionals fought the largest battles of the revolution at Celaya and Leon. The indirect fire of Obregon's artillery and machine guns inflicted decisive defeats on the Villistas. The Villista army dissolved into guerrilla bands, and many soldiers returned to their lives in the small towns and countryside of the North. Reduced to guerrilla warfare, Villa remained a political force, mandating agrarian reform laws, the confiscation of the great estates, and labor laws regulating the northern mining and timber industries.

During 1916 Carranza consolidated his power. He demobilized the Casa del Obrero Mundial and its 350,000 members and red battalions, which totaled more than 4,000 troops. Carrying red and black flags in public demonstrations the Casa del Obrero Mundial proclaimed the goal of workers' control of production, and during the spring of 1916 it paralyzed Mexico City with a general strike. During the summer, however, the army crushed the Casa del Obrero Mundial during a second strike. In the North Villa began executing U.S. citizens, and in March he raided Columbus, New Mexico, to lure President

Taking it as a whole, Mexico is a grand city, and, as Cortes truly said, its situation is marvellous. • **Edward Burnett Tylor (1832–1917)**

Wilson into an invasion and expose Carranza as a traitor. U.S. general John “Blackjack” Pershing failed to catch Villa, but Carranza and Obregon had a more sophisticated agenda.

In February 1917 delegates from every sector of society promulgated a new constitution that satisfied most aspirations. It stipulated national ownership of natural resources, frontiers, and coastlines; universal male suffrage; land reform and municipal autonomy for the rural working class; and social justice for industrial workers as fundamental objectives for the new government. The revolution defeated the caste system that still characterizes much of Latin America; returned more than 25 percent of the nation’s surface, including much of the best land, to the peasantry and rural workers; initiated schooling for the indigenous population; and created a system of civilian government in contrast to the military dictatorships in support of oligarchy (government by the few) that still plague much of the Western Hemisphere.

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chat

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Revolution—Russia

The Russian Revolution of 1917 was an event of enormous significance in twentieth-century world history. It marked the end of the distinctive society of czarist Russia, the world's largest country at the time, and the beginning of the first large-scale effort to construct a modern socialist society.

To many oppressed people in the world the Russian Revolution of 1917 represented a beacon of hope, promising that capitalist exploitation and imperialist domination need not be permanent. To most Western capitalist societies, however, the revolution was a threat of epic proportions—challenging private property, existing social structures, parliamentary democracy, and established religion. Its triumph in Russia initiated a deep rift in the global community between Communist countries and the capitalist democracies of the West.

Collapse of Czarist Russia

The first phase of the Russian Revolution occurred in February 1917, when the last czar, Nicholas II, abdicated the throne, marking the end of the Romanov dynasty that had governed Russia for almost three centuries. What had brought czarist Russia to this revolutionary turning point? Factors surely included the ancient inequalities, conflicts, and divisions of Russian society—the great gulf between a small land-owning nobility and a vast peasant class; the dominance of Russians over the empire's many other peoples; the absolute authority of the czar over all other groups in society.

Perhaps more important were the reforms that Russia's nineteenth-century czars made as they



After his death in 1924, Lenin became the focus of a quasi-religious cult, as reflected in this famous Soviet propaganda poster announcing: "Lenin lived, Lenin lives, Lenin will live." Poster by V. S. Ivanov.

attempted to modernize their country and catch up with the industrializing West. They ended serfdom in 1861, but the lives of most peasants did not improve dramatically. They promoted rapid industrial growth but did not anticipate the political demands of a growing middle class or the rising wave of protests by exploited urban workers. Despite modest political reforms and elections to a national parliament



Russians lie dead and wounded in the street after being shot with a machine gun manned by Bolshevik forces on the roof of a building.

(the Duma), the czar's government was exceedingly reluctant to share political power with other groups in society. As a result, various groups of revolutionaries emerged—many of them committed to socialism. Their activities only worsened the growing tensions of Russian society. But the pressures of World War I—massive casualties and economic breakdown—prompted mass demonstrations in the capital, St. Petersburg. Women, workers, students, and soldiers took to the streets in February 1917. Even the czar's most loyal supporters deserted him. These circumstances caused Nicholas II to vacate the Russian throne.

Social Upheaval

When the Russian monarchy collapsed, power was assumed by a provisional government, a coalition of leading middle-class liberals from the Duma and representatives of several mainstream socialist parties, the Mensheviks and Socialist Revolutionaries.

Although this new Russian government dismantled much of the old czarist state and promised a democratic constitution, its failure to end the economic chaos, to distribute land to the peasants, and to remove Russia from World War I opened the gates to a massive social upheaval during the summer and early autumn of 1917. Soldiers deserted in growing numbers; peasants began to seize the estates of their landlords; urban workers created highly popular grass-roots organizations called “soviets” to manage local affairs and to challenge official state authorities; minority ethnic groups demanded autonomy or independence. Russia was coming unglued and the provisional government increasingly discredited.

Bolshevik Takeover

These circumstances created an opening for a small radical socialist party known as the “Bolsheviks,” led by the highly disciplined and ferociously revolutionary

Vladimir Ilyich Lenin (1870–1924). As the only major socialist party that had not affiliated with the provisional government, it alone was untainted by the failures of that government. Thus, the Bolsheviks grew rapidly in popularity and in numbers of party members, especially in the large cities and among workers and soldiers. Their program, drawn up by Lenin, was far closer to the mood of the masses than that of the provisional government. It called for immediate peace, confiscation of land-owners' estates, workers' control in the factories, self-determination for non-Russian nationalities, and "all power to the soviets," which meant the overthrow of the provisional government. Lenin insisted that the Bolsheviks seize formal state power from the increasingly unpopular provisional government. On the night of 24–25 October, Bolshevik-led armed forces took control of major centers in St. Petersburg, but they did so in the name of the All-Russian Congress of Soviets, which was then assembling in the city. Thus, the Bolsheviks presented their takeover as a defense of the revolution and as a way of bringing a government of the soviets to power. So unpopular had the provisional government become that people put up little initial resistance to what the Bolsheviks called the "October Revolution." During the next several months Bolshevik-led soviets in many other cities also seized power and joined the revolution, at some times peacefully and at other times violently.

Civil War

Few people thought that the radical Bolsheviks could maintain power. Within six months the Bolsheviks found themselves in a bitter civil war against a variety of enemies—supporters of the czarist regime, middle-class liberals who favored the provisional government, and even a number of socialists who were offended at the Bolsheviks' unilateral seizure of power. Three years of bitter fighting ensued before the Bolsheviks staggered to victory in 1921, their hold on Russia, soon to be renamed the "Soviet Union," finally secure. Their opponents were divided, and some of them—known generally as the "Whites"—wanted to restore lost properties to the landlords. The Bolsheviks'

identification with the popular soviets and their willingness to endorse peasant seizure of land gave them an edge in competing for mass support. Their ability to integrate a number of lower-class men into the newly formed Red Army and into new institutions of local government provided a measure of social mobility for many. Because a number of capitalist powers, including Britain, France, the United States, and Japan, briefly entered the conflict on the side of the Whites, the Communists could present themselves as patriotic defenders against foreign intervention. The Russian Revolution had brought to power a Communist party—the Bolsheviks—which now proceeded to construct the world's first socialist society.

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See also Communism and Socialism; Lenin, Vladimir Ilyich; Marx, Karl; Revolutions, Communist; Stalin, Joseph

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Revolution—United States

The American Revolution (1775–1783) is significant in world history for several reasons: the opportunity to weaken Britain's position drew the French monarchy into the conflict, which contributed to a financial crisis and the ensuing French Revolution; the rebellion inspired later changes in British colonial policy (at least where white settlers predominated); and the principles embodied in the Declaration of Independence inspired revolutionaries and nationalists elsewhere in the world.

The American Revolution took place between 1775 and 1783 and pitted colonists of the thirteen British colonies along the Atlantic coast of North America against Great Britain. The revolution was triggered by increased British efforts to control the colonies from 1763 onward, efforts largely designed to expand revenues for the British treasury. New taxes and regulations on colonial economic activity infuriated many colonists, accustomed to their own semi-independent colonial legislatures and considerable commercial latitude. Patriotic societies formed, and leaders began to invoke Enlightenment ideas about liberty and about popular control over government. (The Enlightenment was a philosophic movement of the eighteenth century marked by a rejection of traditional social, religious, and political ideas and an emphasis on rationalism.) Specific issues, such as the indebtedness of many southern planters to British banks, played a role as well. The patriotic Continental Congress assembled and began discussing independence in 1774. Outright clashes between armed militia groups and British soldiers began in Massachusetts in 1775. George Washington was named commander in the summer of that year.

Perhaps one-third of the colonists actively supported the ensuing struggle for independence, whereas another large minority preferred loyalty to the Crown. (Many Loyalists—also called “Tories”—fled to Canada and were stripped of their property.) Partisans included Virginia planters and New England political radicals, who agreed on Britain as a common enemy but disagreed about social change. A number of farmers, in what was still a largely agricultural society, participated in the struggle, as did some African Americans; the first colonist killed in the struggle was, in fact, an African American sailor. The colonies declared independence in 1776.

Fighting occurred in both North and South, with British troops, bolstered by German mercenaries, often holding the upper hand. Britain was hampered by cautious tactics but also by frequent overconfidence against the amateur colonial forces. The colonists had numbers on their side—although the actual number of combatants was small, with rarely more than fifteen thousand in the colonists' ranks at any given time. Many militiamen were part-time and ill trained, and funding was also a problem. France, and to a lesser degree Spain and the Netherlands, provided funds and weapons and direct military support after 1776, and this support was crucial in the latter stages of the revolution.

By 1781 fighting concentrated in Virginia, where the British general Charles Cornwallis had to yield to a combined French-American force at Yorktown. Desultory fighting continued for two years before a peace was signed in Paris to recognize the new United States, with territory running from Florida (ceded by Britain to Spain) to Canada, from the Atlantic to the Mississippi River. Britain feared even greater losses to its empire if war were to continue.



Nathaniel Currier,
*The Destruction of Tea
at Boston Harbor* (1846).
Lithograph. Contrary to
Currier's iconic depiction,
few of the men dumping
tea into the harbor
were disguised as
Native Americans.
Library of Congress.

Significance

The significance of the American Revolution in world history rests on several bases. It was part of the ongoing colonial struggle among European powers because the opportunity to weaken Britain's position drew the French monarchy into the conflict. The revolution ultimately inspired later changes in British colonial policy toward greater flexibility and decentralization where white settlers pre-dominated; Canada became the first beneficiary during the first half of the nineteenth century. French expenditures in the war contributed to financial crises at home and helped lead to the need to call the Estates General (assembly) to consider new taxes and then to the French Revolution of 1789.

The example of colonial independence, the strong principles embodied in the Declaration of Independence and other writings by U.S. leaders such as Thomas Jefferson, and the institutions ultimately established by the Constitution all inspired revolutionaries and nationalists elsewhere. (During a brief period of confusion, after 1783, the United States attempted a loose confederation; the later establishment of a federal system, with checks and balances among legislature, executive, and judiciary would have the real influence in the long run.) French revolutionaries invoked the revolution in 1789 but also in 1830 and 1848; in the last revolution, a U.S.-style presidency was sought, although the effort misfired. The U.S. example loomed

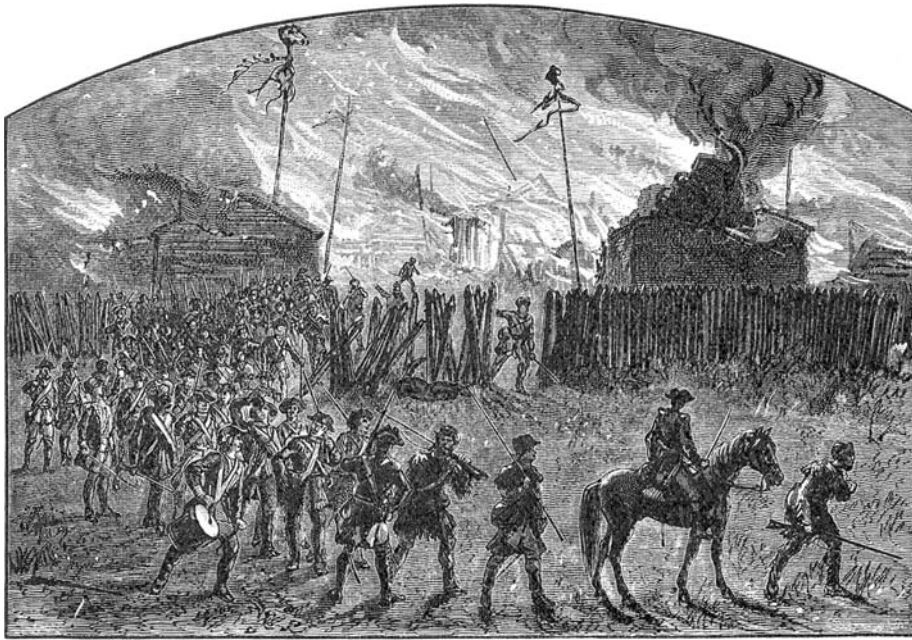
large in the Haitian and Latin American struggles for independence (1798 and post-1810, respectively) because it provided the first modern instance of decolonization. The South American liberator Simón Bolívar, particularly, cited U.S. precedent in his hopes for a greater Colombia, free from Spanish control.

The U.S. political philosopher Thomas Paine summed up this aspect of U.S. influence, although with some exaggeration, claiming that the revolution “contributed more to enlighten the world and diffuse a spirit of freedom and liberty among mankind, than any human event that ever preceded it.”

Comparative Analysis

The revolution also deserves comparative analysis. It was not a major social upheaval, although a new generation of leaders did wrest power from their elders. Despite revolutionary principles, and some ensuing emancipations in northern states, slavery was not systematically attacked. Radical urban leaders such as Sam Adams in Boston were mainly controlled in favor of greater unity against the British, and the social structure and relations between men and women were not significantly altered. The revolution was far less sweeping than its later French counterpart. It was also unusually politically successful, compared with later independence struggles elsewhere, without a long, disruptive aftermath as in many revolutions and the Latin

He that rebels against reason is a real rebel, but he that in defence of reason rebels against tyranny has a better title to Defender of the Faith, than George the Third. • **Thomas Paine (1737 1809)**



Both the British and the Americans destroyed Native American villages during the revolution. This drawing shows the burning of an Iroquois village in New York State.

American independence movements. Good leadership and considerable political experience in colonial legislatures may help explain this success. The quick resumption of close economic ties with Britain after the war encouraged the U.S. economy. “New nation” difficulties, so common during the nineteenth and twentieth centuries, were limited in the United States, although rifts between North and South, united during the revolution, would soon resurface.

Finally, the revolution was, of course, a founding event for the United States itself. American nationalism, only tentatively developed before the revolution, was given a considerable boost, and the new political institutions established by the Constitution worked through their formative period during the 1790s and early nineteenth century with impressive success. Opportunities for westward expansion, initially in the territories of the Midwest and deep South, followed from the revolutionary settlement as well. The United States did not

emerge from the revolution as a major world power; indeed, it largely stayed free of major foreign entanglements. But the nation did begin to set its own course.

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See also United States of America

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Revolutions, Communist

The great Communist revolutions of the twentieth century, especially those of Russia and China, drew upon the eighteenth century “liberal” or “democratic” revolutions of America and France. But the Communist revolutions, executed by highly organized parties guided by Marxist ideology, were committed to an industrial future. They pursued economic as well as political equality, and they sought the abolition of private property.

During the twentieth century Communist parties came to power in a number of countries and in a number of ways. In Russia (1917) and China (1949), Communist parties seized power as part of vast revolutionary upheavals that swept away long-established societies and political systems. In sparsely populated Mongolia an independence movement against Chinese control turned for help to the Soviet Union in the early 1920s and subsequently established a Communist state closely allied to the Soviet Union. After World War II Communist regimes were established in several countries of central and Eastern Europe, largely imposed by Soviet military forces that had liberated these countries—eastern Germany, Poland, Czechoslovakia, Romania, Hungary, Bulgaria—from Nazi rule. The local Communist parties that the Soviets installed in power initially had some popular support deriving from their commitment to reform and social justice and from their role in resistance to the Nazis. But in Yugoslavia and Albania Communist parties genuinely independent of the Soviet Union also came to power with considerable popular support.

After Japan’s defeat in World War II, its Korean colony was partitioned, with the northern half coming



This Chinese Communist poster—“Women can hold up half the sky. Surely the face of nature can be transformed”—reflects the Communist commitment to engaging women in the task of building socialism and its promise of a modern industrial future.

Poster by Wang Dawei, 1975, Tianjin.

under Soviet and therefore Communist control. In Vietnam a much more locally based Communist and nationalist movement under the leadership of Ho Chi Minh battled Japanese, French, and later

Workers of the world unite; you have nothing to lose but your chains.

• **Karl Marx (1818–1883)**

U.S. invaders and established Communist control first throughout the northern half of the country and after 1974 throughout the whole country. The victory of the Vietnamese Communists spilled over into neighboring Laos and Cambodia, where Communist parties took power during the mid-1970s. In the Caribbean Fidel Castro led a revolutionary nationalist movement against a repressive and U.S.-backed regime in Cuba and after coming to power in 1959 moved rapidly toward Communism and an alliance with the Soviet Union. Finally, a shaky Communist regime took power in Afghanistan in 1979, propped up briefly only by massive Soviet military support. At its maximum extent during the 1970s, Communism encompassed about one-third of the world's population and created a deep division in the world community.

Communist and Democratic Revolutions

The great Communist revolutions of the twentieth century, especially those of Russia and China, drew upon the “liberal” or “democratic” revolutions of the eighteenth century, such as the American (1776) and particularly the French (1789). Communist revolutionaries, like their French counterparts, believed that violent upheavals could open the way to new and better worlds constructed by human hands, but they worried lest their revolutions end up in a military dictatorship like that of Napoleon after the French Revolution. Like the French Revolution, those of Russia and China also involved vast peasant upheavals in the countryside, an educated urban leadership, the overthrow of old ruling classes, the dispossession of landed aristocracies, the end of ancient monarchies, and hostility to established religion. The Communist revolutions in Russia and China, like the French, “devoured their own children.” All three turned on some of their most faithful followers: in the French Terror (Reign of Terror, a period of the revolution characterized by executions of presumed enemies of the state); in Communist leader Joseph Stalin's purges in the Soviet Union; and in Chinese

Communist leader Mao Zedong's Cultural Revolution (1966–1976).

But the Communist revolutions were distinctive as well. They were executed by highly organized parties guided by a Marxist ideology; they were committed to an industrial future; they pursued economic as well as political equality; and they sought the abolition of private property. In doing so they mobilized, celebrated, and claimed to act on behalf of society's lower classes—exploited urban workers and impoverished rural peasants. The propertied middle classes, who were the chief beneficiaries of the French Revolution, numbered among the many victims of the Russian and Chinese revolutions. Communist revolutions, unlike the French and American revolutions, also made special efforts on behalf of women, granting them legal and political equality, sponsoring family reform, and actively mobilizing women for the workforce. Whereas the French and American revolutions spurred political democracy—although gradually—all of the Communist revolutions generated highly repressive authoritarian governments that sought almost total control over their societies, exercised by Communist Party elites or by single leaders such as Stalin, Mao Zedong, or Castro.

Comparing the Russian and Chinese Revolutions

Despite a common Marxist ideology and a disciplined party determined to achieve power, the Russian and Chinese revolutions differed in many ways. In Russia the Communists (Bolsheviks) came to power less than a year after the Romanov czarist regime collapsed in 1917, whereas the Chinese Communist Party had to struggle for decades after the demise of imperial China (1911/12) before seizing power. Thus, Russia's civil war occurred *after* the Communists took control (1918–1921), whereas in China prolonged conflict between the Communist Party and the Guomindang (Chinese Nationalist Party), led by Chiang Kai-shek, took place *before* the Communists seized power. Furthermore, Russia's Communists based themselves in the cities and drew their most devoted followers from the urban working class, whereas China's revolution

occurred primarily in the country's vast rural hinterland, with peasants as a primary source of recruits. This difference reflected the much greater industrial development of the Russian economy. Russia's peasants did join the revolution in the summer of 1917, but they did so spontaneously and without the active rural involvement of the Communist Party that was so important in China.

World war nurtured both of these revolutions, although in different ways. In Russia the Communists gained credibility by opposing their country's participation in World War I, arguing that it was an imperialist conflict that socialists scorned. However, in China the Communists gained much popular support by vigorously leading their country's opposition to Japanese aggression in World War II. China was a victim of imperialist aggression rather than a participant in it, and the Communists cast themselves as defenders of the nation far more decisively than did their Russian counterparts. Furthermore, because theirs was the first Communist revolution, the Russians faced almost universal hostility from established capitalist states. Later revolutions in China, Vietnam, Cuba, and elsewhere had the support of an established Communist power—the Soviet Union—in their struggles. They were joining an already established Communist world.

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See also Revolution—China; Revolution—Russia

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Ricci, Matteo

(1552–1610)

JESUIT MISSIONARY

Matteo Ricci, a missionary respected for his expert knowledge of China and the West, was the first Jesuit to live in Beijing. His deep understanding and tolerance for Chinese beliefs aided his missionary work and allowed for a greater acceptance of Catholicism among his converts.

The Jesuit missionary Matteo Ricci (1552–1610) is a leading figure in the history of the West's interaction with China. Despite the fact that few religious converts were made during his twenty-seven years in China, Ricci did lay the foundation for the early Catholic presence in the Middle Kingdom (the literal translation of Zhongguo, the name for China dating to ancient times), and his scholastic abilities, including his incredible memory and mastery of Chinese language and philosophy, along with his knowledge of mathematics, cartography, and astronomy, impressed many members of the ruling class. Through his translations he introduced the basic tenets of the Christian faith to China, most notably in his work, *The True Meaning of the Lord of Heaven*, as well as the math and logic of Euclid. Matteo Ricci is remembered for his role in pioneering the early cultural relations between Europe and China.

Born in the Italian city of Macerata, Ricci received his early education at home. In 1561, he entered a local school run by a religious order called the Society of Jesus, commonly referred to as the Jesuits, and seven years later he left Macerata to study law in Rome. In 1571, however, Matteo abandoned his legal studies and joined the Jesuit Order. Under the tutelage of the famous scholar Clavius, he studied mathematics and astronomy in addition to his religious training, which he received at Jesuit colleges in Florence and Rome. In



An historic print showing the Jesuit missionary Matteo Ricci (left) and the Chinese scholar Xu Guangqi (right). Collection of the Beinecke Rare Book and Manuscript Library, Yale University.

1577 Matteo left Italy and, after a brief stay at the University of Coimbra in Portugal where he studied Portuguese, he arrived in the port of Goa in India. While in Goa he taught Latin and Greek at the local Jesuit college and continued to prepare for the priesthood. Ordained in July 1580, Father Ricci was dispatched two years later to Macao on the coast of southern

China where he immediately began an intensive program of studying both written and spoken Chinese.

In 1583, Matteo Ricci accompanied Father Michele Ruggieri on a mission to establish a Catholic presence inside China. They settled in Zhaoqing, the administrative capital of the southern provinces of Guangdong and Guangxi, careful not to draw unnecessary attention to themselves while they worked to secure friendship from the ruling class. Abandoning an early strategy of integrating into Chinese society by wearing the orange robes of Buddhist priests, Fathers Ruggieri and Ricci donned the traditional costume of the Confucian literati elite instead. Recognizing that it was this class of society whose toleration, if not assistance, they required, the Jesuit missionaries worked to gain their acceptance by portraying themselves as scholars, moralists, and philosophers, rather than as religious priests.

While in Zhaoqing, Ricci mastered not only the basics of the Chinese language but also the philosophy of the ruling class. Relying on his tremendous memory, he could recite passages from the Four Books of the Confucian codex as well as selections from the classics of ancient literature and history along with volumes of commentaries on Chinese philosophy. This was a remarkable achievement given that no substantial dictionaries or language guides existed at the time. In the summer of 1589, Ricci and Ruggieri were forced to leave Zhaoqing after being expelled by an official who was hostile to the presence of foreigners. The Jesuit fathers then moved north of Guangzhou (Canton) to the town of Shaozhou where they remained for the next six years.

In 1595, after a total of twelve years in the south, Ricci was able to secure permission to travel north into the heart of China. Although he could not gain entry to the capital of Beijing, he did establish himself in the city of Nanchang in central China. Here he continued to cultivate friendships with members of the literati, and in 1597 he was named the superior of the China mission. In the fall of 1598 he was finally allowed to accompany a prominent Chinese official on a trip to the imperial capital. Although his first visit to Beijing was brief, Ricci was convinced that

the city was the same as Khanbalic, the capital of Cathay (an anglicized version of “Catai,” an alternative name for China) that had been described by the adventurer Marco Polo three centuries earlier. Father Ricci’s belief that Polo’s Cathay and Ming-dynasty China were one and the same was confirmed a few years later by his fellow Jesuit, Father De Goes, who travelled to China overland from India noting the accuracy of Polo’s descriptions of the region.

After leaving Beijing, Ricci settled in the secondary capital of Nanjing on the Yangzi (Chang) River where he continued his study of Chinese language and philosophy. He also reworked an earlier version of a map of the world that he had drawn while in Zhaoqing, and this extremely detailed map greatly impressed the local Confucian scholars. After nearly two decades in China, Ricci was at last granted permission to travel to Beijing, and despite efforts by the powerful eunuch Ma Tang to stop his visit, he entered the Chinese capital in January of 1601. The Ming emperor, who was impressed by the Jesuit’s gifts, which included a painting that utilized the technique of perspective, something untried up to this time by Chinese artists; two clocks that struck on the hour; and a music instrument called a spinet, granted him permission to reside in Beijing permanently. Ricci spent the final nine years of his life in the Ming capital.

During his time in Beijing, equipped with a command of written Chinese after years of dedicated study, Ricci began to translate European texts for publication. In addition to publishing his revised map of the world, he also oversaw the publication of many of these texts, including a summary of the Christian faith in a work called *The True Meaning of the Lord of Heaven* (1603), the first six books of Euclid’s *Elements of Geometry* (1607), and *The Ten Paradoxes* (1608).

In the end it was not Ricci’s religious teachings but his scientific knowledge—as demonstrated by his mastery of astronomy and use of sundials, clocks, and prisms—that impressed the Chinese court. His deep understanding of Chinese culture, combined with his willingness to accommodate his appearance and religious views to the traditions of the Confucian literary elite, paved the way for later generations of

Jesuit missionaries in China. However, Matteo Ricci's contention that the Chinese practice of Confucian rites, or "ancestor worship," was not a religious practice but a social custom was overturned a century later by the Congregation of Rites in Rome in 1704, a decision that ended an earlier period of cultural accommodation and toleration.

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See also Missionaries

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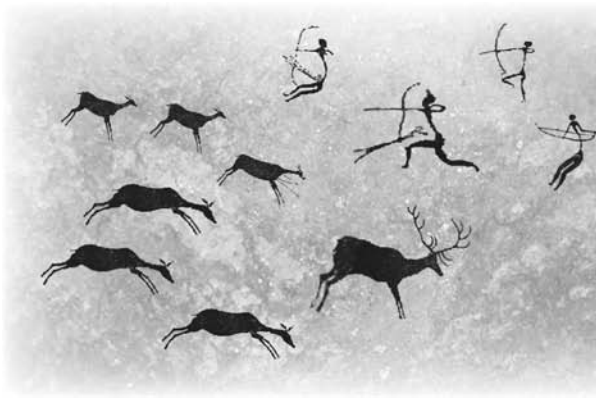
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Rights, Property

Concepts of owning property (whether tangible or intellectual) and the contracts drawn up to regulate its use have taken shape in diverse forms throughout history. Examining property and contract practices of three groups—hunter-gatherers of the foraging (Paleolithic) era, agrarian “landed” communities, and industrial capitalist societies—demonstrates how property rights are closely connected with important values and structural aspects of a society.

Much contemporary political and popular discourse posits “property” as modern capitalist private property whose owner has the right to use the property, to exclude others from it (or regulate their use of it), and to alienate it. Private property is frequently seen as natural, desirable, or inevitable because it allows us to express or follow our self-interest, to do as we please with what we own, or to enact the final stage of a linear developmental history of which contemporary private property is the culmination. The history of property and contracts, however, shows that property has taken many different forms and a contract is but one type of exchange.

In thinking about the diversity of property practices, some important questions need to be asked. Who can own property? Private property can be owned by an individual person, a partnership, a corporation (a “legal person” in the eyes of the law), a family, a group, a tribe, or the state. “Common property” is open for use by a specific set of people, such as all townspeople. Sometimes not all individuals are eligible to own property: historically women (or married women), children, prisoners, and noncitizens have been disqualified.

What can be owned as property, in what ways can it be used, and can it be alienated (i.e., transferred by gift or contract)? Personal property, tools, shelter, and family burial grounds have frequently been owned by individuals or families, and in many societies they could not be freely sold but had to remain within the family, guild, or citizenry. Land uses have frequently been regulated, and sale prohibited. Some societies permit property in human bodies (children, wives, slaves), and others in human intellectual products, like written texts, songs, or cartoon characters.

Property practices are usually closely connected with important values and structural aspects of a society. The rules governing, and distribution of, property affect and reflect economic growth and decay, wealth and poverty, and political power and social status, as well as individual opportunity and psychological resources. Not surprisingly, then, property rights have been claimed, exercised, and contested throughout history with serious disagreement and often violence.

To explore the diversity of property and contract practices, it may be helpful to look at examples of property among hunter-gatherers, agricultural peoples, and industrial capitalist societies.

Property among Hunter-Gatherers

The earliest human communities were hunter-gatherers who lived primarily by hunting and gathering what nature provided, and sometimes also cultivating land. They lived in many parts of the world and, indeed, inhabit a few areas still. Contrary to standard myths, hunter-gatherers did have notions of property. For instance, Native Americans had



Native American (Siksika) girl with horse and pony, Montana. Before white settlers came to the American West, villages or tribes understood what marked their territorial boundaries and those of neighboring tribes.

Photo by Walter McClintock (1870–1949).

understandings concerning personal (or individual), familial, and tribal property. A bow made by a male Huron was likely to be considered his, and the basket made by a female Iroquois to be considered hers. At the same time, material accumulation was relatively unimportant to a Native American, while traditions of gift giving were extremely important to building and maintaining the political structure of a tribe. For instance, the chief distributed food and other resources to the members of the group—in a potlatch, for instance—in order to assure their well-being and solidify his social and political dominance, and one chief hosted another chief, or allowed another tribe to hunt on his property, to solidify intertribe relations. Similarly, familial clans maintained usufruct rights to planting fields and hunting grounds, but they would not prohibit others from entering or even from obtaining nonagricultural foods.

In addition, every village or tribe understood what marked their territorial boundaries and those of neighboring tribes. These boundaries were fluid, as tribes frequently exchanged territorial rights. As William Cronon, a scholar of the American West, puts it, these territorial transactions were more diplomatic than economic: Native Americans did not treat land and possessions as commodities to be traded in a marketplace. So land transactions between Native Americans themselves—in comparison to transactions between Europeans—“had more to do with sharing possession than alienating it” (1983, 67).

Agriculturalists and Landed Property

Even from the earliest times some places seemed better suited for agriculture than hunting and gathering. Agriculture has a long history in the Fertile Crescent, China, India, and the Nile River valley, where property boundaries were established and, by sophisticated geometry, reinscribed after each flood season. Because one acre devoted to farming or domesticated livestock can feed ten to one hundred times more people than a hunter-gatherer acre, agriculture generated food surpluses and settled civilizations, frequently headed by kings, ruled by bureaucrats, and marked by laws, many concerning landed property. Because it constituted power, land frequently could not be freely bought or sold; because it needed to be cultivated, workers might be owned as slaves or tied to the land by unbreakable contract as serfs. Some critics, of whom Rousseau is perhaps the most famous, have argued that agricultural property leads to a rich and powerful upper class, a downtrodden (frequently owned) and unhealthy laboring class, more work for all, and periodic famines when a major crop fails.

Others saw in the fixed, landed property of agriculture the possibility and goal of community. During the later years of the Zhou dynasty (1045–256 BCE), after the age of Confucius, the famous philosopher Mencius (c. 371–c. 289 BCE) looked back nostalgically to the Golden Age of Sages when—he believed—peace, order, and equality abounded because the



Page about trespassing from *Webster's Encyclopedia of Useful Knowledge and World Atlas* (1889), a book of general practical knowledge, including how to improve penmanship, handle legal issues, and make macaroni and cheese.

state had been founded on principles of equal land distribution. Hoping for the return of a similar age, he advocated the restoration of the “well-field” system of equal land holding. Thus, according to Mencius’s ideal and as the Chinese character suggests, each well-field was to encompass one *li* square, consisting of nine hundred *mu*. The well-field would thus be divided into nine equal parts, each consisting of 100 *mu*. From this, the eight peripheral plots would be given to eight families while the central plot would be owned by the state. Thus, all of the eight families would have to work the central, state-owned plot as a form of tax to the state. While Mencius believed such a system fostered equality, it did inevitably require a two-class system of “gentlemen” (magistrates, officials, and so forth) and “countrymen” (farmers). Even though most scholars doubt the historical accuracy of Mencius’s well-field system, it became a very popular model for later land reformers.

Similar visions—with a plurality of classes or social divisions—occurred in India and in medieval Europe, where the manor was the primary economic unit. The lord was understood to be the owner of his manor, and thus the peasants who lived on his land had to pay him rent by working on his land; peasants who farmed for a long time had effective tenure (or “copyhold”) to farm the land without being evicted by the lord, although the peasant could neither sell the land he lived on nor exchange it with another peasant or freeman. Mirroring the manorial system, feudal lords and vassals practiced fealty, in which a small lord would pledge his military allegiance to a greater lord in return for the greater lord recognizing and protecting his estate. Thus mutual obligations and duties bound together great lords, vassals, and peasants.

Trade, Global Expansion, and Capitalism

In China, medieval Europe, and most if not all agricultural societies, merchants engaged in trade. In classical Greece, Aristotle (384–322 BCE) distinguished merchant property from that of others in his *Politics*. Heads of households, Aristotle stated, exchange goods (and money) in order to buy goods to satisfy the household’s needs. Merchants, on the other hand, exchange goods in order to make money on the exchange; so the goal of exchange for merchants is profits. Within the limits set by laws, traditions, and religion, merchants bought and sold goods as commodities. Around the fifteenth century, European traders, with the support of their rulers, explored and expanded their trade, buying and selling commodities globally. With the development of commercial societies in England and Holland in the seventeenth century, land itself was coming to be seen not as inalienable by nature or tradition but as something that could be bought and sold; when these European societies colonized others, they brought with them and imposed their own ideas of property. As Locke stated, “in the beginning all the world was America,” waiting for Europeans to claim common or uncultivated land as their own private property or buy land from Native Americans who thought they were sharing its use.

Property rights are not the rights of property; they are the rights of humans with regard to property. They are a particular kind of human right. • David Friedman (b. 1945)

European expansion since 1492 and the economic dominance of European countries like Great Britain and then the United States has meant that capitalist practices of private property and free contract have been imposed or adopted throughout much of the world. Sir William Blackstone, the leading British legal theorist, in the 1760s pronounced the absoluteness of private property as “that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe” (1979, 2), language that suggests individual control of the material world and freedom of action (and that ignores the state’s power to tax and to fund public goods). With the development of corporate capitalism in the twentieth century, much individual property is now held as shares of stock and other financial instruments, so control and action have devolved to corporate managers, and the individual shareholder has become an “almost completely inactive recipient” of income (Berle 1954, 30–31).

Many have criticized capitalist private property. Marx sought to abolish private property because it limited individuality and freedom, alienating individuals and subjecting them to impersonal economic laws, Proudhon because property as theft subverted justice. Other critics, like the American utopian writer Edward Bellamy in *Looking Backward*, thought that national ownership of property would produce a more efficient and equitable economy with more leisure time. Arguments about whether private property increases freedom, efficiency, equity, and justice can be expected to continue, and the twenty-first century will probably see some new debates about property linked to changes in global trade (as the “free trade” disputes expand to include, for instance, distorting subsidies for private agricultural property in the developed world), environmental problems (as property’s relation to ecological degradation is examined), and intellectual property in an information society.

Intellectual Property and Copyright

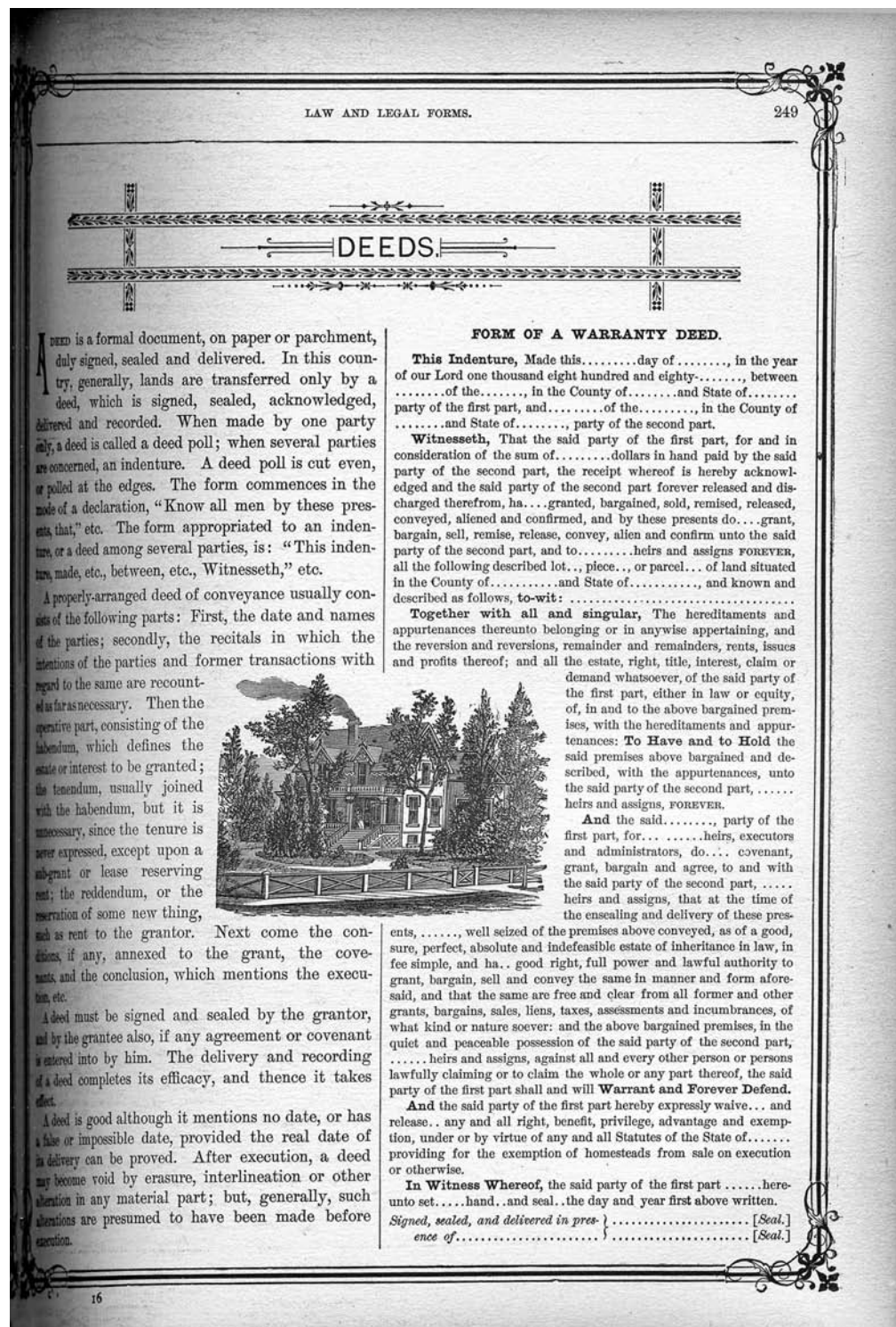
Copyright, an aspect of intellectual property, can serve as a good current example of ongoing contestations of

and changes in property. The three major intellectual property rights—patent, trademark, and copyright—each protect different types of intellectual property in the United States. A *patent* grants an inventor the exclusive right (i.e., monopoly) to produce and sell his invention for a given period of time—usually a standard seventeen years. A *trademark*, which must be renewed every ten years, is a name, design, word, or cluster of words that signifies a firm’s identity to consumers: think of McDonald’s big yellow *M*, the “golden arches.” Copyright is an author’s legal right to control the production and distribution of her work—published or unpublished—for a legally established period of time, which has recently been extended to the author’s life plus seventy years thereafter.

Copyright protects an author’s *expression*, not his ideas or theories. That is to say, for example, Albert Einstein could never copyright his general theory of relativity because it was an idea, but he did possess copyrights for the books and essays in which he *expressed* the ideas of relativity. Although most authors register their work with the U.S. Copyright Office, one’s mere creation of a work is enough to establish one’s copyright over it. In most cases the owner of a work’s copyright is the work’s author, and the “author” is the primary creator of the work. The author may by contract reassign or sell his copyright to another party.

Copyright law has come under criticism recently for many reasons. As with laws governing many types of property, the law is subject to interpretation about what constitutes infringement of copyright. Currently, the U.S. Copyright Office defines infringement as any action involving the reproduction, distribution, performance, or making public of a copyrighted work without the express permission of the copyright owner. But one may be exempt from infringement charges if the reproduction is done by a nonprofit library, archive, or educational institution and is considered to be *fair use*. The boundaries between fair use and copyright infringement can be unclear or contested, for the law does not draw a clear line between the two.

Copyright law originally was intended to protect authors from having others copy and sell their



Page describing property deeds from Webster's *Encyclopedia of Useful Knowledge and World Atlas* (1889).

work for profit. With the explosion of file sharing, "peer-to-peer" (P2P) networks, copyright law and its enforcement have changed significantly. Statutes such as the "No Electronic Theft" Act (1997) and the Digital Millennium Copyright Act of 1998 state that individuals who reproduce or distribute copyrighted

material—even if they have no intention of profiting from it or are unaware of any harm they may cause—are subject to civil and criminal prosecution. The ninth circuit court of appeals in the case of *A&M Records v. Napster* (2001) reasoned that the Audio Home Recording Act (1992)—which exempted

from prosecution individuals using digital or analog devices to make musical recordings for their personal use—did not apply to individuals who reproduced copyrighted works on computers, and hence peer-to-peer networks such as Napster. In particular, file sharing seems to be most commonly practiced by younger, cyber-savvy generations, and thus the Recording Industry Association of America (RIAA) has increasingly made peer-to-peer networks on college campuses the target of their lawsuits. In May of 2003, four college students settled a lawsuit in which they agreed to pay the RIAA sums varying from \$12,000 to \$17,000. While actions taken against file sharers have had some effect on file sharing, it remains to be seen how copyright law, the market, and file sharing will evolve in response to peer-to-peer networks.

The new statutes have effects beyond file sharing. Because creators have copyright in their works, whether registered or not, and because many ordinary works lack a known or easily available public record of who currently owns their copyright, many works of culture from about 1920 are in a kind of limbo. They may be important or valuable culturally or as works of art; they may be disintegrating, as their pulp paper rots or their celluloid decays. But when, as is frequently the case, their ownership is unknown, no one will be willing to reprint or republish them—or even to preserve them in digital form—because of the possibility that the copyright holder will come out of obscurity and sue for infringement, even if the holder had no intention of preserving or publishing the work.

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See also Capitalism; Communism and Socialism; Feudalism; Global Commons; Indigenous Peoples

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The geographer Lewis Mumford's observation—that all great historic cultures thrived by traveling along the natural highway of a great river—is particularly resonant today, as the world's rivers bear the brunt of human manipulation. Pollution and habitat loss (two main side effects of hydraulic engineering), as well as climate change, pose unprecedented challenges to agriculture, manufacturing, urban water supplies, and wildlife conservation.

By common definition, a river refers to water flowing within the confines of a channel (as suggested by its Latin root, *ripa*, meaning “bank”). More precisely, a river forms the stem of a drainage system that transports water, soil, rocks, minerals, and nutrient-rich debris from higher to lower elevations. In a broader sense, rivers are part of the global water cycle: they collect precipitation (snow, sleet, hail, rain) and transport it back to lakes and oceans, where evaporation and cloud formation begin anew. Energized by gravity and sunlight, rivers sculpt the land around them, wearing down mountains, grinding rocks, and carving floodplains through the earth's crust. As carriers of water and nutrients, rivers also provide complex biological niches for fish, sponges, insects, birds, trees, and many other organisms.

Rivers can be compared by basin size, discharge rate, and channel length, although there are no universally recognized statistics for any of these dimensions. The Amazon forms the world's largest drainage basin at approximately 7 million square kilometers, followed distantly by the Congo (3.7 million square kilometers) and the Mississippi-Missouri (3.2 million square kilometers). As regards discharge rate,

the Amazon once again stands supreme at around 180,000 cubic meters per second, followed by the Congo (41,000 cubic meters per second), the Ganges-Brahmaputra (38,000 cubic meters per second), and the Yangzi (Chang) (35,000 cubic meters per second). At around 6,650 kilometers, the Nile is the world's longest river, followed closely by the Amazon (6,300 kilometers) and the Mississippi-Missouri (6,100 kilometers). Other rivers with large area-discharge-length combinations include the Ob'-Irtys, Paraná, Yenisey, Lena, Niger, Amur, Mackenzie, Volga, Zambezi, Indus, Tigris-Euphrates, Nelson, Huang He (Yellow River), Murray-Darling, and the Mekong. Two rivers—the Huang and Ganges-Brahmaputra—also stand out for their huge annual sediment load, which makes them especially prone to severe flooding. There is no agreed-upon minimum size, length, or volume for a river, but small rivers are usually called streams, brooks, creeks, or rivulets. Great or small, rivers that form part of a larger drainage system are known as tributaries, branches, or feeder streams.

Although rivers vary greatly in size, shape, and volume, most rivers share certain characteristics. A typical river has its headwaters in a mountainous or hilly region, where it is nurtured by glaciers, melting snow, lakes, springs, or rain. Near the headwaters, swift currents prevail and waterfalls are common, owing to the rapid drop in elevation or the narrowness of the valley through which the river flows. As a river leaves the high region, its velocity typically slackens and its channel begins to meander, bifurcate, or braid. Often its floodplain broadens as it picks up tributary waters. As the river reaches its mouth, it usually loses most of its gradient. It becomes sluggish, allowing some of its sediment load to settle to the bottom, clogging



Edwin Lord Weeks (1849–1903), *Water Carriers of The Ganges* (n.d.). Oil on canvas. The Ganges, long a sacred site for Hindu ritual, is threatened by sewage and fertilizer pollutants.

the channel. The river responds by fanning around the sediment deposits, classically forming the shape of a delta (the fourth letter in the Greek alphabet, Δ), before emptying in a lake, sea, or ocean.

Unique climatic and geographic conditions determine a river's annual discharge regime (its seasonal variations in water quantity), but as a rule rain-fed tropical rivers flow more steadily year-round than do snow-fed temperate rivers. A river is called perennial if it carries water all or almost all of the time, and intermittent or ephemeral if it does not. A water-carved channel in an arid region is often called an arroyo or dry gulch if it carries water only on rare occasions. For hydrologists, the term *flood* refers to a river's annual peak discharge period, whether it inundates the surrounding landscape or not. In common parlance, a flood is synonymous with the act of a river overflowing its banks. In 1887, a massive flood on the Huang caused the death of nearly a million Chinese people. In 1988, flooding on the Ganges-Brahmaputra temporarily displaced over 20 million in Bangladesh.

Human Manipulation of Rivers

Rivers contain only a minuscule portion of the total water on earth at any given time, but along with lakes, aquifers, and springs they are the principal sources of fresh water for humans as well as for many plants and animals. Rivers are therefore closely associated with the emergence of settled agriculture, irrigated

crops, and early urban life. The great civilizations of Mesopotamia (literally “the land between the rivers”) from Sumer to Babylonia emerged beginning around 4500 BCE along the Tigris and Euphrates floodplains of modern-day Iraq. Egypt, as the Greek historian Herodotus once famously noted, was “the gift of the Nile.” The Huang spawned early Chinese civilization, just as the Indus produced the first cultures of southwest Asia, and the river valleys of coastal Peru shaped urban life in the Andes. “All the great historic cultures,” the geographer Lewis Mumford noted with only slight exaggeration, “have thriven through the movement of men and institutions and inventions and goods along the natural highway of a great river” (McCully 1996, 9).

For most of human history, river manipulation was slight, consisting mostly of diverting or impounding a portion of a river's water for the purpose of irrigating crops. Even modest modifications of this type, however, can have severe environmental consequences. In arid regions, salinization is a common problem. Unless properly drained, irrigated fields slowly accumulate the minuscule amounts of dissolved salts naturally found in soil and water. Over time this salt buildup will eventually render the fields incapable of growing most crop species. Siltation is a common problem caused when farmers and pastoralists deforest or overgraze river valleys, inadvertently setting in motion excessive erosion downstream. As the silt settles to the channel bottom, it elevates the

Otto Johann Heinrich Heyden (1820–1897), *The River Nile with the Gizeh Pyramids* (n.d.). Oil on canvas.



river above the landscape, making it more prone to flooding.

Ancient Roman, Muslim, and Chinese engineers possessed a sophisticated understanding of the art of hydraulics, as the still-extant aqueducts, canals, and waterworks of Rome, Baghdad, Beijing, and other Eurasian cities amply demonstrate. But river engineering as a mathematical science first emerged in Europe between 1500 and 1800 CE. The crucial breakthrough came when Italian engineers calculated the formula for determining the amount of water flowing in a river at any given time by measuring width, depth, and flow rate. Thereafter, water experts knew how to “tame” a river—that is, manipulate its banks, bed, and velocity in order to contain floods, reclaim land, and promote navigation—with a greater degree of precision, and therefore a higher chance of success, than had previously been feasible.

Today’s methods for controlling rivers are remarkably similar to those employed in the past—chiefly the construction of dams and weirs, the reinforcement of banks, and the straightening (and often widening) of channels—but materials and techniques have improved greatly over the past two centuries. Modern dams are designed to store water, regulate minimum channel depth (usually in connection with a lock), generate electricity, or perform all three tasks. Reinforced banks help keep the water in a designated channel, thereby reducing the frequency of flooding and opening up former floodplain for agricultural, urban, industrial, and other human uses. Channel

straightening gives a river a steeper gradient and thus a faster discharge rate; by reducing the total length of a river, it also facilitates the transportation of goods between ports. Collectively, these engineering methods transform a mercurial and free-flowing stream (a “floodplain river”) into a predictable deliverer of energy, goods, and water (a “reservoir river”). Nowadays, the Nile and Yangzi produce kilowatts for industries and cities, just as the Mississippi and Rhine transport freight for companies and consumers, and the Colorado and Rio Grande deliver water for farmers and homeowners.

Environmental Consequences of Hydraulic Engineering

River engineering fosters bank-side economic growth by opening up arable land, reducing floods, promoting trade, and generating electricity, but it also has a disruptive impact on riverine environments. The problems can be divided into two interrelated types: those that compromise the purity of the water in the channel (water pollution) and those that reduce the amount of living space in its channel and floodplain (habitat loss). Both typically result in a reduction in a river’s biodiversity.

River Pollution

Water pollutants can be divided into three broad categories: nutrient-based, chemical, and thermal. The



most common nutrient-based pollutants are fecal matter from untreated human sewage and agricultural runoff from phosphorus and nitrogen fertilizers. When introduced into a lake or river, these organic substances serve as food for phytoplankton (free-floating algae), which are huge consumers of the water's dissolved oxygen. If the river moves slowly, and if the "algal blooms" are large or frequent enough, the river will gradually become eutrophified (oxygen-depleted), with negative consequences for other organisms that require dissolved oxygen for respiration. The Po and Ganges are examples of sewage-fertilizer rivers.

The most pernicious chemical pollutants include heavy metals (zinc, copper, chromium, lead, cadmium, mercury, and arsenic), and chlorinated hydrocarbons such as polychlorinated biphenyls (PCBs) and dichlorodiphenyltrichloroethane (DDT). These

substances bioaccumulate; that is, they pass unmetabolized from simple organisms to more complex organisms, magnifying in concentration as they move up the food chain. The Mersey, Rhine, Hudson, Ohio, and Donets are all examples of industrial-chemical rivers.

Thermal pollution is a problem on rivers that have numerous nuclear-, coal-, or oil-generated power plants on their banks. The heated wastewater from the plant-cooling facilities artificially raises the water temperature, and the higher temperature in turn affects the type of species capable of living in the streambed. The Rhône and Rhine are examples of thermal rivers.

Most of the world's manipulated rivers can loosely be labeled "agricultural" since the majority of engineering projects are geared toward land reclamation



Rafts on the Yangzi River, China. Photo by Joan Lebold Cohen.

No man ever steps in the same river twice, for it's not the same river and he's not the same man. • **Heraclitus (544–483 BCE)**

(flood control) and the lion's share of dam water is still utilized for the purpose of irrigating crops. As industrialization spreads globally, however, chemical pollutants are increasingly becoming the single greatest threat to river systems; indeed, few rivers remain completely free of any trace of industrial contaminants. Today, the cleanliness or filth of a river is often more determined by the average income of the humans who live on its banks than by the number of farms and factories in its watershed. Wealthy nations have invested in urban and industrial sanitation plants over the past fifty years, and water quality has correspondingly improved. Poorer countries, unable to afford these techno-fixes, have seen their rivers continue to deteriorate.

Habitat Loss

Water pollution compromises a river's biological robustness by killing off organisms and by creating an unfavorable environment for nourishment and reproduction. But it is the engineering projects themselves that account for most of the habitat loss on rivers and are thus primarily responsible for the drop in biodiversity. Natural ("untamed") rivers contain an abundance of diverse biological niches: headwaters and tributaries, main and secondary channels, deep pools and islands, banks and bed, and marshes and backwaters. Channels provide longitudinal passageways along which organisms travel, while river edges provide access routes to the adjacent marshes and floodplains where many organisms find their nourishment and reproduction sites. Floodplains nurture trees, shrubs, and reeds, which help stabilize the channel bank while providing shade and protection to other organisms. A river basin hosts a complex web of life, ranging from simple organisms such as fungi, bacteria, algae, and protozoa, to more complex organisms such as flatworms, roundworms, and wheel animals, and on up to mollusks, sponges, insects, fish, birds, and mammals.

Engineering alters a basin's natural structure in ways that are detrimental to many species. Dams and weirs block a river's longitudinal passageways,

making it difficult for organisms to take full advantage of the channel's living space. Migratory fish are particularly hard hit because their life cycles require them to move from headwaters to delta and back again. Most famously, salmon disappeared from the Columbia, Rhine, and many other rivers when dams were built on their banks. Reinforced banks have a similar impact: they sever the links between a river's channel and its floodplain, depriving many organisms of their feeding and breeding sites. As a river loses all or part of its natural channel, bed, banks, islands, backwaters, marshes, and floodplain, it is transformed into a narrow and uniform rather than a broad and diverse biological site. Typically this results in a precipitous drop in both the number and type of species that it supports.

Aside from reducing the total amount of living space on a river, engineering can also trigger dramatic population upsurges in certain species, creating an ecological imbalance. The zebra mussel—a hearty algae eater and rapid reproducer—has migrated from its home in the Caspian Sea to the industrial rivers of America and Europe, displacing local mollusk species along the way. Similarly, after the completion of the Aswan Dam in the mid-1930s, snails infected with deadly schistosomes (parasitic worms) began to colonize the Nile's new irrigation canals, debilitating and killing Egyptian farmers and fishermen.

Responding to environmentalists and to reformers from within their own ranks (such as Gilbert F. White), engineers have developed new and more sophisticated methods of river manipulation over the past thirty years. More attention is now paid to preserving the original river corridor as channel beds and banks are fortified and dredged. Dams and weirs are fitted (or retrofitted) with fish ladders to ease fish migration. More floodplain is left intact. In some cases, rivers have even been re-meandered and rebraided so that they better replicate the natural conditions that once prevailed on their banks. Nevertheless, the recent Three Gorges Dam project on the Yangzi—the largest dam-building project of all time—serves as a reminder that the environmentally unfriendly practices of the past are still in widespread use today.

Most climate scientists predict that global warming will have far-reaching impacts on river systems worldwide. High mountains such as the Alps and Himalayas may begin to shed their snowpack earlier each spring. Higher evaporation rates may cause some regions to experience significant alterations in their annual precipitation patterns. Warmer water temperatures may make some rivers inhospitable to salmon and other cold-water fish. Rising sea levels may partially or wholly inundate the Netherlands, Bangladesh, and other delta regions. Although the effects on rivers will vary from region to region, collectively these changes will pose unprecedented challenges to agriculture, manufacturing, urban water supplies, and wildlife conservation.

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See also Biological Exchanges; Climate Change; Erosion; Nature; Water; Water Energy; Water Management

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Roads

The first roads were built to facilitate the movement of armies over uneven landscapes. Paved road systems reached new levels of sophistication during Roman times but fell into disrepair with the fall of the empire. The dawn of modern road building began with the invention of the automobile, evolving into today's intricate networks of street and highway systems.

Roads that allow marching men and wheeled vehicles to move easily across indefinite distances have existed for thousands of years. The earliest roads were built for military use, since rulers were eager to move armies as fast as possible to meet hostile forces wherever they might appear. But merchants and other travelers immediately benefitted from roads as well, and over time everyday use for peaceful purposes matched and eventually outweighed their military significance.

Road construction is not easy, for roads must often cross flowing water and/or dry streambeds and usually need specially constructed bridges to do so safely. On dry ground, rain erodes soft earth and forms puddles that quickly turn into impassable mud holes unless builders construct a pavement of flat stones, compacted gravel, concrete, or asphalt. Drains are often needed to keep the road surface intact for any length of time. In addition, since the invention of automobiles and trucks, curves and slopes must be designed to accommodate vehicles moving at high speed. This sometimes requires building tunnels, leveling hill crests, and moving millions of tons of rock.



Jan Asselyn (1610–1652), *Italian Landscape with the Ruins of a Roman Bridge and Aqueduct*. Oil on canvas. Many feats of Roman engineering—such as bridges and aqueducts—still exist as majestic ruins; with the fall of the empire Roman roads fell into disrepair.

Early Roads

Babylonian and Assyrian kings built the first road systems historians know of in modern Iraq. They did so for military purposes, beginning when horse-drawn chariots became supreme on battlefields after about 1400 BCE. The Persians later built a so-called royal road that ran all the way from their capital at Susa to the shores of the Aegean Sea, a distance of about 2,857 kilometers (1,775 miles). Xerxes's army used that road when invading Greece in 480 BCE, and the Greek historian Herodotus wrote that it took ninety-

three days to travel its length, an average of about 31 kilometers (19 miles) a day.

Other early empires in China and India also created lengthy road systems, but canal boats in China later became the main means of long distance transport, being cheaper and far more capacious than overland carriage. Roads assumed local, short-range significance in China thereafter, and when camel caravans became normal for long distance trade and raid (c. 200 CE), road building in the arid zones of central and western Asia lost its earlier importance. Wheeled vehicles became marginal wherever camels prevailed, so even the famous Silk Roads that connected China with western Asia after about 100 BCE were no more than a network of unimproved caravan tracks.

Roman Roads

Around the Mediterranean, however, the Roman Empire relied on a system of elaborately constructed roads designed primarily for military use but important for trade as well. Roads were a standard 8-meters (twenty-six-feet) wide, topped with multiple layers of

flat stones and gravel to produce a surface on which relays of horses could pull light, two-wheeled chariots as much as 120 kilometers (75 miles a day), while heavy carts were content to travel 24 kilometers (15 miles) a day. At its apex the Roman state maintained about 85,295 kilometers (53,000 miles) of such roads in Europe, western Asia, and North Africa, using them primarily to deliver supplies for army garrisons stationed along the frontiers.

In sub-Saharan Africa, Australia, and the Americas, where human portage was the prevailing form of transport, roads were not needed since human feet could traverse uneven ground just as well as camel hoofs. But, in Peru, Incan rulers constructed a road system rivaling that of the Roman Empire, presumably for military reasons. Two main roads ran from Ecuador southward for about 3,219 kilometers (2,000 miles), one along the coastal plain and a second inland through the high Andes. They were linked by side roads built along suitable river valleys. Incan roads were as much as 7.62 meters (25 feet wide); suspension bridges crossed wide ravines; and flat stone surfaces smoothed the way for human traffic and llama caravans.



Canaletto, *Grand Canal: The Rialto Bridge from the South* (1727). Oil on copper. Roads that need to cross flowing water require specially constructed bridges.

The road was new to me, as roads always are going back.

• Sarah Orne Jewett (1849–1909), *The Country of the Pointed Firs*

In Eurasia, the collapse of the Roman Empire (430 CE) disrupted road maintenance, and traffic soon decayed. The East Roman, or Byzantine, Empire—centered in Constantinople (later called Istanbul)—relied mainly on ships and navigable rivers for transport and gave up the effort to station troops on distant land frontiers, so eastern Europe, too, saw Roman roads deteriorate. Economic revival and population growth after about 900 increased trade, but for a long time no public authority existed that was capable of restoring a road system in any of the separate kingdoms and principalities into which Europe divided. Local cities did something to pave streets and public spaces, but overland hauling remained short range, slow, and expensive. Inland communities were almost self-sufficient for food and other essentials. Seafaring and boats moving along the slow-flowing rivers of the north European plain provided the principal means of transport.

Modern Systems

After 1650 or so the situation began to change when privately constructed, stone-surfaced toll roads, carrying swift passenger coaches and heavy freight wagons, proved profitable in a few unusually busy

locations. But Roman-style construction of multi-layered stone roads was expensive, so large-scale road building depended on the invention of cheaper methods of construction. After 1750, experiments began in both France and England using relatively thin layers of loose rock and gravel—as little as 224 millimeters (10 inches)—laid on top of ordinary soil raised above the level of adjacent ground and drained by ditches on either side. In England, John Loudon McAdam (1756–1836), appointed surveyor general of metropolitan roads in Great Britain in 1827, attached his name to this cheaper way of building roads, and a boom in “macadamized” road construction ensued. But the advent of railroads, beginning in the 1830s, soon eclipsed toll roads for most long-distance traffic.

Other European countries and European settlements overseas imitated the cheaper form of French and English road building very quickly but still saw railroads eclipse toll roads. Only when trucks and cars became numerous in the 1920s did a new era of road building emerge. Concrete slabs and/or smooth asphalt topping quickly replaced gravel roads, reducing dust and speeding driving. In the 1930s, Italy and Germany pioneered the construction of limited-access superhighways with a median



Henry Alken (1785-1851), *A Coach and Four on an Autumn Road* (n.d.). Oil on panel.

strip to separate opposite traffic flows. This set a new standard for speed and safety and in Germany was also designed for military use. The United States, after 1956, caught up by building an interstate system of limited-access highways that links all major cities in the country; wherever cars and trucks abound similar throughways have speeded traffic. But as vehicles multiplied they often increased traffic congestion. How long our present road system will retain its importance depends on the cost and availability of gasoline and diesel fuel or on the development of alternative technologies.

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See also Automobile; Horses; Transportation—Overview

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Roman Catholicism

Roman Catholicism traces its origins to Jesus Christ of Nazareth (born between 6 BCE and 6 CE and died between 28 CE and 30 CE) and regards the bishop of Rome (the pope, as the successor of Peter) as the visible head of the church. Roman Catholics worship Jesus as the Son of God and the Second Person of the Blessed Trinity. The religion had a profound effect on the development of Western civilization.

Found today in some 235 countries, the Roman Catholic Church is the largest of the Christian churches, with a world population of about 1.147 billion (as of 2007), or 17 percent of the world's population. The largest number of adherents is found in Brazil, Mexico, Philippines, the United States, and Italy. (In the United States Roman Catholics comprise 22 percent of the population and constitute the largest religious body.) This article is concerned only with the Roman (or Latin) branch and is divided into four sections: basic teachings, major historical developments, contemporary trends and problems, and Roman Catholicism in the non-European world.

Basic Teachings

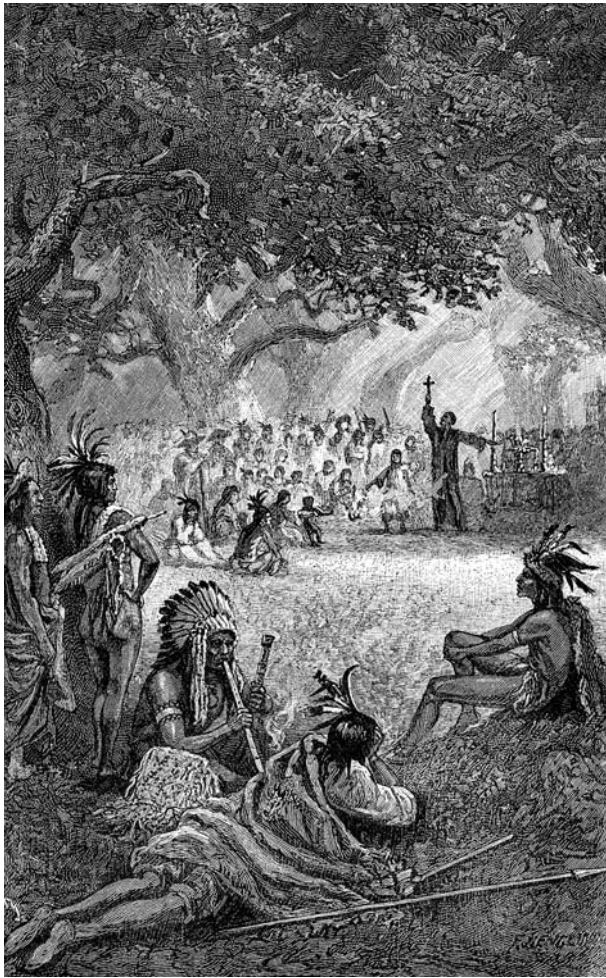
The teachings of Roman Catholicism rest upon Scripture (revelation as found in the Old Testament and New Testament), tradition, and the magisterium, the teaching authority of the church. Tradition has enabled the church to adapt to new realities. It is closely linked to Scripture, and the interpretation of both is considered the prerogative of the magisterium. The expression of the revealed truth in Scripture may take diverse forms, such as history, prophecy, parable,

and allegory. A literal interpretation is not required. Throughout the Christian era, reformulation and adaptation have been characteristic of Roman Catholicism in moral teachings, liturgy, and societal roles. The process has involved change and continuity, conflict and consensus.

The distinctive marks of Roman Catholicism are unity, holiness, catholicity, and apostolicity. Unity means that each individual transcends all cultures and classes; holiness signifies that the church is intrinsically sacred despite the sins of its members, either individually or as a body; catholicity is the universality of the church; and apostolicity denotes faith, ministry, and the sacraments in communion with Rome. The Roman Catholic Church recognizes elements of itself in other Christian churches, and it does not require that a state be Catholic or that it enjoy any privileged status. It accepts the principle of religious freedom, and it holds that salvation is possible for all who act in good faith, according to their consciences.

There is a definite hierarchy in the Roman Catholic Church. As the successor of the apostle Peter, the supreme ruler is the pope. Elected by the College of Cardinals since the Middle Ages, the pope resides in Vatican City, a minute but sovereign state in the center of Rome. The other bishops are also seen as the direct successors of the apostles, and most reside in geographical and organizational units known as dioceses. The pope and the bishops are joined together in a collegial body, but collegiality does not lessen the papal primacy or affect papal infallibility in matters of faith and morals.

Just as the pope has primacy over the bishops, the bishops have the final authority in their respective dioceses. After ascertaining their orthodoxy, a bishop



In the eleventh century Pope Gregory VII brought about major changes in the church by eliminating the laity's role in choosing bishops.

ordains priests and deacons, who become his assistants. Priests must be male, and since the fourth century, enter upon a lifetime of celibacy. Deacons, also male, may be married. Most priests reside in ecclesiastical units called parishes. In addition to bishops, priests, and deacons there are monks and nuns who are members of religious orders and normally take vows of poverty, chastity, and obedience.

The "People of God" includes not only the clergy and the religious but the laity as well. Married or single, engaged in secular professions or occupations, lay persons are said to share in the mission of the church. As lay apostles, they assist bishops and priests in the conduct of church affairs, but they cannot act independently or in opposition to their religious superiors. Despite some softening by Vatican II (1962–1965) and more lay participation,

the church remains an authoritarian, hierarchical structure.

As defined by the Council of Trent (1545–1563), the vehicles of divine grace that enable a Catholic to attain salvation are the seven sacraments: baptism, penance, the Eucharist, confirmation, matrimony, Holy Orders, and anointing of the sick. Only those who have received Holy Orders are authorized to administer all seven sacraments. Other basic teachings of Roman Catholicism are the Trinity (the presence of three Persons in one God: the Father, the Son, and the Holy Spirit), the immortality of the soul, the resurrection of the dead, justification by faith and good works, an afterlife of reward or punishment, and special veneration of the Virgin Mary as the Mother of God. There is also veneration of the saints, but Catholics are directed not to pay an exaggerated attention to the saints.

The expression of Roman Catholicism takes the form of the liturgy, the rites and ceremonies of the church. The most important act of worship is the Mass, which is composed of the Liturgy of the Word (readings from Scripture) and the Liturgy of the Eucharist (Holy Communion). Like other aspects of Roman Catholicism, the liturgy, especially the Mass, has been adapted to regional environments, and the uniqueness of each culture is respected. Since Vatican II the vernacular has been used extensively, and although Gregorian chant is considered proper to the Roman liturgy, other forms of music are permitted.

Major Historical Developments

The beginning of the Roman Catholic community, as of other Christian bodies, is dated from the appearance of Jesus Christ to the apostle Peter after his crucifixion, burial, and resurrection. The apostles, like Jesus, were Jewish, as were the first Christians. What distinguished these early Christians from other Jews was their conviction that Jesus was the Messiah, that he had been resurrected from the dead. After the martyrdom of the Deacon Stephen, about 33 CE, these Christians, who had maintained close ties with the Temple, scattered and preached the Gospel wherever

they settled. With Paul (died c. 67 CE), Christianity came out of its Jewish mold, and Paul's missionary labors in the Mediterranean world made it the religion of the Gentiles.

Christianity spread rapidly in the Roman Empire. Women, especially widows and unmarried women, were active in the evangelization of pagan areas. Whether as preachers, deaconesses disbursing charity, or leaders of groups studying devotional literature, these women made their mark on the early church. Their influence, however, was short-lived; by the third century their activities had been curtailed, and they were gradually excluded from any clerical function. The patristic writings disparaged women. Saint Augustine of Hippo considered women innately inferior to men and saw them as symbols of carnality and original sin.

Another important development of Christian antiquity was the emergence of the concept of the primacy of Rome. Although Jesus had conferred preeminence on Peter among the apostles, he did not directly establish a papacy in Rome. Peter was almost certainly martyred in Rome, and thus Rome became a sacred place, a new Jerusalem for early Christians. The prestige of the bishopric of Rome because of its association with Peter was enhanced by the fact that Rome was the political and cultural center of the vast Roman Empire. In an age of heresies such as Arianism, Montanism, and Pelagianism, the bishop of Rome was frequently called upon to condemn unorthodox teachings and mediate jurisdictional disputes.

The first pope to claim primacy for Rome was Damascus (366–384 CE) at a council in 382 CE. Leo I (440–461 CE) made the formulation of the doctrine, which stated that the pope had the plenitude of power over the universal church. Papal authority was subsequently augmented by papal missionaries who evangelized new kingdoms. It was also strengthened by the secession of Eastern Orthodoxy, first in the ninth century and then in 1054 in a final and permanent break.

To the concept of the primacy of Rome was added that of the primacy of the pope over secular rulers as well. Thus in the eleventh century Pope Gregory VII

(1073–1085) and his successors ended the control of feudal lords and kings over the selection of bishops and abbots, but in the process, brought about major changes in Roman Catholicism. Secular and sacred domains were sharply delineated, and the role of the laity in the selection of bishops, which dated back to Christian antiquity, was completely eliminated. Absolute papal monarchy over the whole of Christendom reached its apogee under Innocent III (1198–1216) and Boniface VIII (1294–1303). In his quarrel with John of England, Innocent III claimed that temporal authority depended on spiritual authority. Boniface VIII went even further, maintaining in *Unam Sanctam* (1303) that every human being had to be subject to the pope in order to be saved.

Despite the extravagance of papal statements, Roman Catholicism contributed much to the development and achievements of Western civilization. The concepts of popular sovereignty and limited government were part of Catholic political thinking, and canon law, which was applicable whenever a sacrament or a cleric was involved, was the most humane and equitable law of the times. In education, first the monastic schools and then the cathedral schools and the universities made formal schooling more accessible than ever before, though men, and especially those destined for a clerical life, were the principal beneficiaries. However, until the High Middle Ages, talented women in female monastic establishments received a high level of education and made contributions to theology, philosophy, and literature.

Gothic art and architecture, the magnificent works of Dante and Chaucer, and liturgical art, music, and drama all owed their inspiration to Roman Catholicism. In the universities the scholasticism of Thomas Aquinas (1225–1275) provided a systemization of Catholic theology and philosophy that was to last well into the twentieth century. Members of religious orders, such as the Benedictines, Franciscans, and Dominicans, provided social services and medical assistance.

Marring these achievements were coercion in religious matters through the Inquisition, established by Boniface VIII, and the persecution of Jews. The



cruelty of the medieval Inquisition, which could employ torture to obtain confessions of guilt and could sentence those convicted of heresy to death by burning at the stake, varied considerably, depending on times and places. Wherever and whenever it existed it was a dreaded institution. As for anti-Semitism, ever since the beginning of the Christian era, Jews had encountered hostility when living among Christians, because they were considered guilty of deicide, of rejection of the Messiah.

As commerce and trade entered the medieval world, and as the proportion of Jews to Christians in these areas, especially money lending, increased, so did aggression against Jews. Jews were accused of avarice and economic exploitation, as well as of more serious charges, such as child murder and alliance with Satan. The worst of the persecutions took place during the Black Death of 1348/49, when Jews from Spain to Poland were accused of having deliberately caused the plague. In vain did the Avignon Pope, Clement VI (1342–1352), denounce this persecution, pointing out that the plague was striking Christian and Jewish communities indiscriminately and offering Jews a haven in Avignon.

The most traumatic event in the history of Roman Catholicism was the Protestant Reformation, which made the Roman Catholic Church a distinct and separate entity in the Christian world. By the beginning of modern times, the Renaissance, the scandal of the Great Western Schism ([1378–1417], when there were two or three who claimed to be Pope), the notorious immorality in the church from top to bottom, and the prevalence of superstitious practices produced skepticism among intellectuals, anticlericalism among the common people, and fodder for nationalistic rulers. The indulgence controversy following Luther's posting of the Ninety-Five Theses united all who had reason to oppose the papacy, and by the end of the century Lutheranism, Anglicanism, and Calvinism had cost the church the allegiance of half of Europe.

The Council of Trent (1545–1563) was convoked to deal with this crisis. Adopting a very rigid, defensive position, the Council defined the sacraments, especially those that had been questioned by the

Protestant reformers, and upheld traditional teachings regarding papal primacy, the hierarchical structure of the church, justification, the nature of the Mass, clerical celibacy, and both tradition and Scripture as the deposit of faith. Latin was retained as the mandatory language of the Roman Church. The legacy of Trent was a very conservative Roman Catholicism.

During the scientific revolution of the seventeenth century, members of the curia opposed the heliocentric theory proposed by Galileo and brought about his condemnation (to be reversed by Pope John Paul II in the 1980s). During the Enlightenment in the eighteenth century a climate of opinion that endorsed religious freedom, the power of reason, the possibility of a heavenly city on Earth, and a natural religion ran counter to the tenets of Catholicism. The era of the French Revolution and Napoleon (1789–1815) inaugurated a period when secular nationalism became the new religion. Almost all modern trends and movements were declared anathema by Pope Pius IX (1846–1878) in the *Syllabus of Errors* (1864). This pontiff convened the First Vatican Council (1869–1870), which formally defined the doctrine of papal infallibility in matters of faith and morals, much to the consternation of many Catholic theologians, ecclesiastics, and lay persons of the period.

Early in the twentieth century, Pope Pius X (1903–1914) railed against "Modernism," excommunicated "Modernists," and suppressed liberal Catholic theologians and historians. His successor, Benedict XV (1914–1922), ended the hunt for "Modernists." He also permitted Italian Catholics full participation in politics, something that had been forbidden by previous popes because Italy had been unified at the expense of the Papal States. During the era of totalitarianism, Roman Catholicism came under attack by Italian Fascism, Nazism, and Communism.

World War II broke out during the reign of Pope Pius XII (1939–1958), a controversial figure. As the war developed and Nazi atrocities, especially against Jews, became known, he was expected to speak out on behalf of Jews. For reasons that became the subject of heated debate after the war in both Catholic and non-Catholic circles, he alluded to the genocide of

A peaceful man does more good than a learned one. • **Pope John XXIII (1881–1963)**

Jews only in general, not specific, terms, even while providing Jews with money and refuge in the religious houses of Rome.

Contemporary Trends and Problems

With Pope John XXIII (1958–1963), Roman Catholicism embarked upon uncharted waters. A compassionate and approachable man, John XXIII's most momentous act was the convocation of a general council, known as Vatican II (1962–1965). In his inaugural address to the three thousand bishops and theologians drawn from all over the world, he declared that the "Church could and should adapt to the needs of the world." His message was one of *aggiornamento*. During the four sessions held between October 1962 and December 1965, every aspect of Roman Catholicism was explored, with a view to creating more openness and flexibility.

The Decree on the Church, instead of identifying the Roman Catholic Church with the Church of Christ, stated that the Church of Christ "subsisted" in the Roman Catholic Church. Papal infallibility was to some extent weakened by the introduction of the concept of collegiality—that is, the pope and bishops shared responsibility for the church. Even more revolutionary were the decrees on religious freedom, Jews, and relations with the other Christian churches. The Decree on Religious Liberty stated that every person "has a right to religious liberty." The Decree on Other Religions asserted that Christ's passion (the suffering culminating in the Crucifixion) could not be "blamed on all Jews then living, without distinction, nor upon the Jews of today." It deplored "the hatred, persecutions, and displays of anti-Semitism directed against Jews at any time and from any source." The Decree on Ecumenism called for dialogue with the Protestant churches to achieve agreement on theological differences. In this decree, the focus is not on a "return" to the Catholic Church, but on the spirit of Christ at work in the churches and communities beyond the visible borders of the Roman Catholic Church.

The air of optimism that pervaded Vatican II soon dissipated in the post-Vatican years. The dialogue

with Protestant churches made little progress with respect to such issues as papal primacy and infallibility, the nature of ordination, the relationship between Scripture and tradition, the nature of the Eucharist (a memorial service or transubstantiation) and the role of Mary in the Divine Plan. The "silence" of Pope Pius XII regarding the Holocaust was an irritant in many Jewish circles, despite the repeated apologies by Pope John Paul II (1978–2005) for the sins of the church against Jews.

Within the Roman Catholic Church there was increasing polarization, some Catholics believing that Vatican II had gone too far and others countering that it had not gone far enough. The positions of Pope John Paul II were generally conservative. Traditional morality in such matters as divorce, premarital sex, contraception, abortion, homosexuality, euthanasia, and genetic engineering was affirmed. The role of women in the church and clerical celibacy occasioned fierce controversy.

In the 1980s and 1990s, as traditional religious orders declined and the number of priests declined dramatically, women assumed liturgical and administrative positions in the church, serving as chaplains, seminary professors, and spiritual directors. Inevitably the question of the ordination of women came up. In an effort to end the discussion, John Paul II in *Ordinatio Sacerdotatis* unequivocally stated that the church did not have the authority to ordain women.

A revival of the issue of clerical celibacy was provoked by the priest sex scandal that rocked the Roman Catholic Church, especially its American branch. It became evident at the turn of the century that for decades bishops had moved priests who sexually abused children from one parish to another in an effort to avoid scandal. In 2002 the Vatican and the American hierarchy adopted stringent measures to purge the clerical ranks of offenders and to ensure the protection of children, but the extent of priest sexual abuse raised the question of clerical celibacy as the possible cause of such offenses. But the Vatican denied a link between celibacy and pedophilia and/or homosexuality, and reaffirmed the validity of a ban on marriage

for priests. The priest sex scandal, no longer confined mostly to the United States, resurfaced on Vatican soil some five years after the German-born Cardinal Joseph Ratzinger was elected as Pope Benedict XVI on 19 April 2005. Amid a papacy already beset with controversies that had offended Muslims, Jews, Anglicans, and many Roman Catholics, Benedict XVI and his direct subordinates were accused in early 2010 of neglecting to alert civilian authorities or discipline priests involved in sexual abuse when he was archbishop in Germany.

As the twenty-first century unfolded, discord and polarization seemed to foretell a new crisis for the church, paralleling that of the Reformation era. Yet most Catholics refused to abandon the church and sought instead a new identity, respectful of the past but adapted to the needs of society.

Roman Catholicism in the Non-European World

Until the sixteenth century Roman Catholicism was co-extensive only with western and central Europe. During the Age of Discovery, religious orders, always the church's pioneers in evangelization, reached out to the far corners of the world. The first missionaries to the Americas, Africa, and Asia were the Franciscans and Jesuits, soon joined by Augustinians, Dominicans, Carmelites and others. As early as 1622 the papacy set up the Sacred Congregation for the Propagation of the Faith. In the nineteenth century the older orders were augmented with new ones, such as the Missionaries of Africa and the Missionaries of the Divine Word, orders formed specifically for work in the non-Western world. Consciously or unconsciously, these missionaries were conduits for the expansion of important elements of the Western world.

Catholicism achieved its greatest success in Latin America (Spanish and Portuguese America). From its earliest settlements in the Americas, the Spanish crown had a papal mandate to Christianize the lands it colonized. Beginning in 1573 Spain established *la mision*, whereby the native Indians were placed under

the direct care of missionaries, protected by Spanish troops. Most missions flourished, notably the Jesuit Reductions of Paraguay and the Franciscan missions of California and the U.S. Southwest. The native peoples adopted not only the religion of the Spanish but also their language, culture, and occupations. As a result, native culture was all but obliterated, and inhumane treatment of the Indians occurred, despite government regulations to the contrary and the strong defense of the Indians vocalized by such missionaries as the Franciscan Junipero Serra and the Jesuit Pedro Claver.

Spanish rule ended early in the nineteenth century, but the church and especially the hierarchy retained its dominant role in society. As the masses gradually became estranged from the church because of its wealth, anticlerical legislation was enacted in many of the Latin American states. The church-state quarrels ended in separation of church and state, although restrictive legislation if not persecution persisted in many countries, notably Mexico.

Catholicism had to contend with internal dissension as well as external hostility. From the 1960s to the end of the century, liberation theology divided the church. According to this theology the church's primary obligation was to improve the socioeconomic status of the masses. Liberation theology encountered the opposition of both Latin American and Vatican prelates, who contended that it was too sympathetic to Marxist models and that its base communities ("the popular church") were anti-institutional.

The history of Catholicism in Brazil, originally a Portuguese possession, does not differ radically from that of Catholicism in Spanish America, although the Brazilian brand of Catholicism had a greater admixture of ancient heathen elements. From the first Portuguese settlements in the sixteenth century, Franciscans and Jesuits preached the Gospel, at the same time building churches and establishing schools and charitable institutions. Catholicism prospered especially between 1680 and 1750. Decline followed when the anticlerical ministry of the Marquis of Pombal expelled the religious orders. The missionaries were readmitted in the nineteenth century, but the



emergence of an independent Brazil and the subsequent disestablishment of the church under the Republican constitution of 1889 prevented attempts to recoup previous losses. In the twentieth century recurring economic crises and military governments further hampered advances in the Catholic Church. Liberation theology was embraced by many churchmen as a way to end the socioeconomic injustices that plagued Brazilian society, but, as elsewhere, this theology had to be jettisoned. In the early years of the twenty-first century, some 75 percent of Brazilians continued to call themselves Roman Catholics, giving Brazil the largest Catholic population in the world. Latin America as a whole had the largest block of Roman Catholics in the world: 473 million. The monopoly held by the church in this part of the world, however, has been threatened by the inroads of Protestantism, especially evangelical Protestantism from the United States, as well as urbanization, consumerism, and globalization.

In North America, New France (Canada) became Catholic owing in large measure to the zeal of the Franciscans and Jesuits who accompanied the French colonizers and established a real bond with the natives. When France surrendered Canada to England in 1763, it was with the assurance that the rights of the Roman Catholics would be protected. The church continued to flourish; by 2000, about 45 percent of the population was Roman Catholic.

In the United States Roman Catholicism was first introduced by the Spanish missionaries in the areas controlled by Spain, such as California in the West and Florida in the East. In English colonial America Catholicism grew from a small group of English Catholics who settled in Maryland in 1634. The American Catholic Church was strongly committed to separation of church and state. Annual episcopal conferences dealt with problems peculiar to the American environment, such as the assimilation of immigrants, trusteeism, and the threat presented by nativism. Lay Catholic generosity and the labors of religious orders, especially female orders, contributed to the success of

the church. By 2000 it was the largest religious body in the United States.

Roman Catholicism can be said to have achieved only moderate success in Africa. North Africa was solidly Muslim when the Europeans first sought settlements in Africa. Missionary activity in central and southern Africa was initiated by the Portuguese in the sixteenth century. The advent of the slave trade and intertribal warfare were serious obstacles to the evangelization of the Portuguese outposts. By the mid-nineteenth century, as European imperialistic rivalry heated up, most of the natives who had been converted had reverted to paganism. Another wave of evangelization began with the White Fathers in the last quarter of the nineteenth century. Large areas of the Congos (French and Belgian) were converted, as well Uganda. Military coups, tribal warfare, in which Catholics of one tribe slaughtered Catholics of another tribe, and Cold War politics all had devastating results for Catholic churches. Vatican II was a mixed blessing for the African churches. On the one hand it led to a hierarchy that was almost entirely African and it also provided Mass in the vernacular, with the addition of traditional singing and dancing. On the other, the prelates who replaced the Europeans tended to be more conservative, and the downplaying of sacramentals, such as medals and holy water, eliminated a previous point of contact with traditional religions. By the beginning of the twenty-first century, Catholics comprised about 16 percent of the total African population. These Catholics were to be found mostly in Angola, the Democratic Republic of the Congo (former Belgian Congo), the Republic of the Congo (former French Congo) and Uganda. Noteworthy in the history of African Catholicism is the general lack of acculturation as well as deviation from Roman Catholic norms in various areas, such as priestly celibacy, monogamy, and mixed marriages.

In Asia the greatest success of Roman Catholicism was achieved in the Philippines, where Catholicism was introduced by Governor Miguel de Legazpi and

the Augustinians in 1565. Through the friars (Augustinians, Franciscans, and Dominicans) and the Jesuits, Spanish culture was easily transplanted to the Philippines, encountering resistance only in the southern islands, where Islam had been established since the fourteenth century. The Spanish missionaries taught the natives better agricultural and horticultural techniques, introduced arts and crafts, and strongly influence architecture. Respectful of Philippine traditions, they produced some excellent studies of Philippine history and culture. No attempt was made to suppress Tagalog, one of the major languages of the islands. Despite difficult times brought on by decades of foreign occupation (American and Japanese), dire poverty, and terrorist organizations, Catholicism was the religion of 83 percent of the population as of 2008.

Little headway was made by Roman Catholicism in the rest of Asia: Roman Catholics numbered less than 3 percent of the total Asian population as the twenty-first century opened. The main reason for the failure of Roman Catholicism to make inroads in countries such as China, Japan, and India was that missionaries encountered ancient and proud civilizations that made the missionaries seem culturally inferior as well as possible political threats. A contributory factor was the failure of papal authorities to allow the missionaries sufficient flexibility in dealing with Asian religions until it was too late.

A survey of Roman Catholicism in the non-European worlds indicates that it was very successful in Latin America, moderately successful in Africa, and

except in the Philippines, a failure in Asia. The degree of implantation of Western culture varies with time and place.

Elisa A. CARRILLO

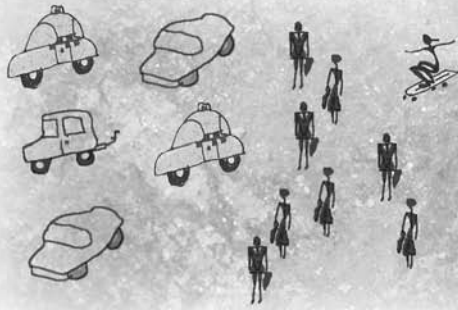
Marymount College of Fordham University

See also Augustine, Saint; Missionaries; Paul, Saint; Religion and War; Ricci, Matteo; Urban II

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Roman Empire

The Roman Empire refers to the post-Republican phase of ancient Roman civilization following the rise of its first emperor, Augustus, in 27 BCE. With its power centered in ancient Rome, the empire reached its greatest extent under Trajan around 117 CE, when it took in all of the lands around the Mediterranean, the Black Sea, Mesopotamia, and extended into Britain.

Originating as a conglomeration of small pastoral communities scattered across seven neighboring hills along the Tiber River of Italy, Rome grew to become the capital of an empire that encompassed all the territories bordering on the Mediterranean Sea, extending from the British Isles to the Arabian Peninsula. Roman imperial authority combined the exercise of political and economic dominance with cultural and ideological sovereignty, enforced through strength of arms. The concept of “empire” in English-language usage ultimately derives from the Latin word *imperium*.

The Roman Republic

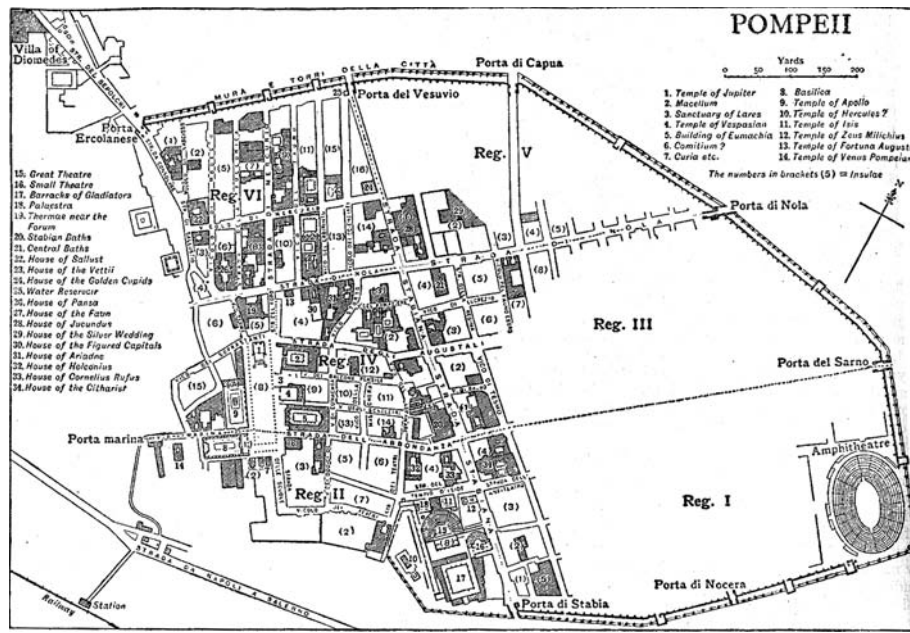
According to legend, the city of Rome was founded by Romulus and Remus, twin sons of the war god Mars, on 21 April 754/753 BCE. Archaeological evidence indicates that the site was occupied by pastoralists and farmers as early as 1500 BCE but not urbanized until the sixth century BCE under the influence of cities to the north (established by the Etruscans in the area now known as “Tuscany”) and to the south (founded by Greek colonists in southern Italy and Sicily). Originally unified under an Etruscan king, the indigenous Latin-speaking inhabitants of Rome had established

their city as a republic about 500 BCE. The republic’s basic law code, the Twelve Tables (451/450 BCE) defined and guaranteed the fundamental rights and responsibilities of all citizens, but the institutional structures of the state continued to evolve down to about 300 BCE.

The senior magistrates of the Roman republic were the two consuls, elected annually and given chief executive power in civil and military matters, including the command of Rome’s armies. Other annually elected officials in the republic included the praetor, who supervised the administration of justice; the quaestors, who oversaw the state’s finances; and the aediles, who maintained public order and the city’s infrastructure (markets, trade, roads, sanitation, and state-sponsored public entertainments). Every five years two censors were elected to take a census of the entire citizen population and its possessions and to organize any major allocations of the state’s resources that might be necessary. Of these allocations, the distribution of public lands and the construction of new public buildings were the most important.

The censors were also responsible for overseeing the membership of the Senate, appointing new senators, and removing infamous ones from office. The Senate embodied the supreme authority of the Roman state, supervised and disciplined the actions of the magistrates, and possessed ultimate jurisdiction over domestic legislation and the state’s foreign relations.

The Senate and executive offices were dominated by the patricians, Rome’s hereditary elite. The ordinary citizens, or plebeians, were largely excluded from executive power but exercised a voice in public affairs through their membership in one or both of two citizen assemblies. The centuriate assembly



Plan of Pompeii.
Archaeological excavation of the buried city provided much valuable information about life in ancient Rome.

encompassed all citizens whose material wealth was sufficient to require them to provide military service to the state. This electoral body voted for consuls, praetors, and censors. The tribal assembly included all free citizens and voted for quaestors and aediles. This assembly elected its own leaders, the tribunes, who represented the interests of the plebeians in state affairs and came to wield considerable power. The tribal assembly also had the right to propose, deliberate, and vote on new legislation, although such legislation had to be ratified by the Senate.

From Republic to Empire

From its inception the Roman republic was a society prepared for war, with all eligible male citizens expected to bear arms for the state. The Senate had the power to appoint a dictator, an official who would wield absolute power in the state for up to six months in order to see it through a severe crisis, usually violent in nature. The wars during the early centuries of the republic were mostly defensive, and in 390 BCE an army of Gauls briefly took Rome itself, but during the third century the republic began its expansion into a territorial empire. The entire Italian peninsula south of the Po River had come under Roman dominion by 264 BCE. The three Punic Wars fought between Rome and the empire of Carthage (264–241 BCE, 218–201 BCE, 149–146 BCE) led to the expansion of Roman

military power and political sovereignty beyond the Italian peninsula into both the western and eastern Mediterranean. This expansion, which was virtually complete by 30 BCE, brought wealth to the citizens of Rome and expanded the opportunities of the Roman elite to exercise political power as civil and military authorities in the newly acquired provinces.

The expansion also led to the breakdown of the republic's institutions. As Rome's military commitments expanded, the willingness of its propertied citizens to serve in long campaigns far afield declined. In 107 BCE military service was made voluntary, and propertyless citizens (the *proletarii*) were allowed to enlist. Fighting under a successful general, the poor could achieve at least the possibility of upward economic mobility. Goods distributed by commanding officers to their men included salaries, plunder, gifts, and plots of land parceled out from conquered colonies. Not surprisingly, loyalty to the general replaced loyalty to the state.

As a result, the first century BCE was marked by a succession of civil wars between Roman generals competing for dictatorial power over the state. These wars culminated in the conflicts between Julius Caesar and Pompey (49–46 BCE) and Marc Antony and Octavian (33–30 BCE). These wars were fought across the entire expanse of Rome's empire, from Spain through Italy to Egypt, and ended in the permanent imposition of monarchic rule upon the Roman state.



A high-relief sculpture of a Roman she-wolf from the classical period, in Assisi. According to myth, Lupa, a she-wolf, rescued Rome's future founders, the twins Romulus and Remus, from the banks of the Tiber; she suckled them back to health. Photo by Chris Howell.

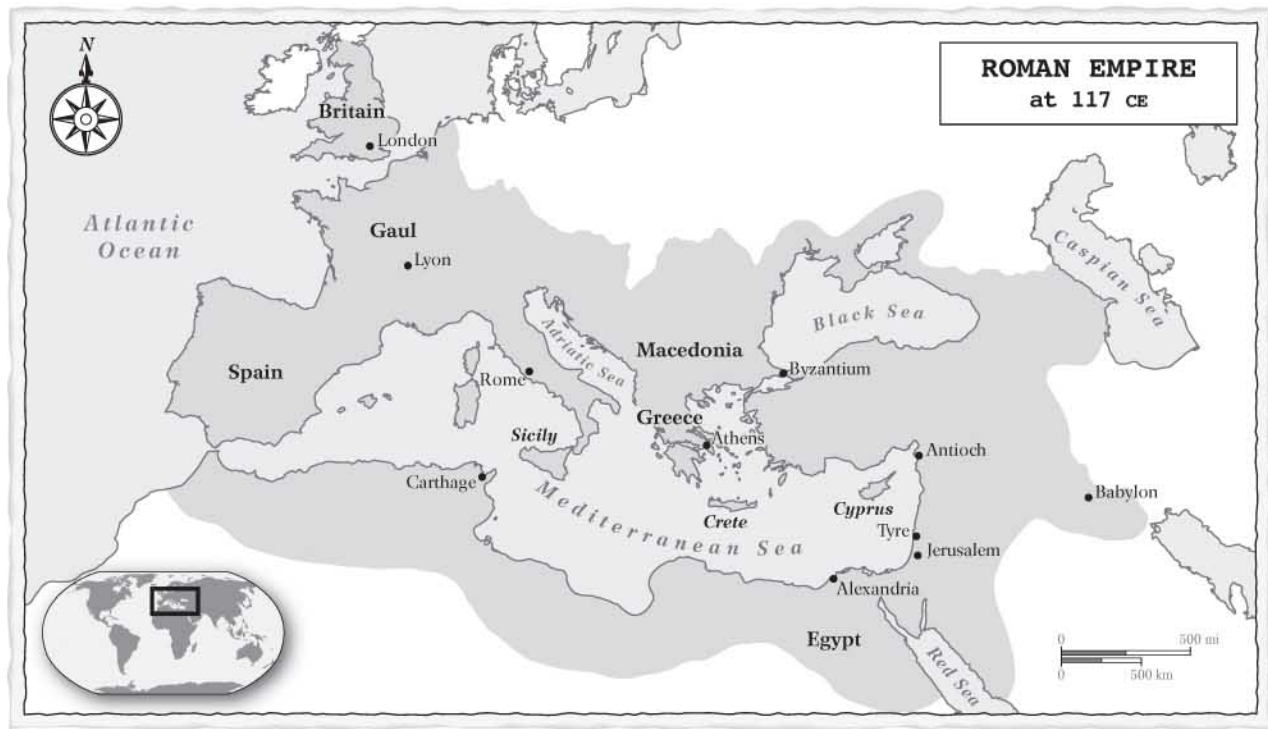
The Principate

After Julius Caesar had defeated the last supporters of his rival Pompey, the Senate embraced the ensuing peace and made Caesar dictator for life in 44 BCE. Although he was assassinated two months later by patrician conspirators claiming they were defending the constitution of the republic, Caesar's popularity among his soldiers ensured that the period of uncertainty led not to a restoration of rule by the Senate and popular assemblies but rather to a power struggle between two claimants to the command of Caesar's troops and political authority: his lieutenant Marc Antony and his adopted son Octavian.

Open war between the rivals broke out in 33 BCE and ended with the suicide of Marc Antony and his ally Cleopatra, whereas Octavian returned to Rome in triumph. In 28 BCE the Senate appointed him its *princeps* (leader) and in 27 BCE gave him the new title of "Augustus," signifying his supreme authority over the state. These new titles in effect created for Augustus (as Octavian was henceforth addressed) the constitutional power of dictator for life. Although the old institutions and offices of the republic remained in place, Augustus now wielded a permanent sovereignty over all aspects of the state, including the Senate, consuls, assemblies, tribunes, and armies. When he died in 14 CE, Augustus was able to pass on his office to his designated successor, Tiberius (reigned 14–37 CE).

The form of government established by Augustus is known as the "principate." Although the legal authority of the *princeps* was absolute, Augustus and his successors allowed much of the day-to-day administration of the state and its empire to remain in the hands of officers and institutions carried over from the republican period. Under the first two dynasties, the Julio-Claudians (14–68 CE) and the Flavians (69–96 CE), periods of apparent instability did not prevent the system established by Augustus from remaining intact. Despite the excesses attributed by contemporaries to Caligula (reigned 37–41 CE), Nero (reigned 54–68 CE), and Domitian (reigned 81–96 CE), the administrative structures of the principate continued to function in an orderly and effective manner. When a civil war broke out at the end of Nero's reign, each of the rivals claimed the title of "Augustus." No one considered the possibility of eradicating that office.

Overall, the first two centuries of the principate brought the Roman Empire the benefits of peace and material prosperity, reaching an apex under the reigns of Trajan (98–117 CE), Hadrian (117–138 CE), Antoninus Pius (138–161 CE), and Marcus Aurelius (161–180 CE). These emperors ruled over a population estimated at 50 to 70 million, linked together by roads, aqueducts, maritime travel and trade, and a shared imperial culture. Despite the era of general peace and prosperity, a significant portion of that population was decimated by the Antonine plague (165–180 CE), which occurred during the reign of Marcus Aurelius and is reputedly responsible for his death via some form of infection while at his army camp. Named after his family name, Antoninus, and also known as the Plague of Galen after the prominent Roman physician who documented the pandemic, it was brought back to Rome by soldiers returning from campaigns around Seleucia in the Near East. Infecting significant numbers of people across and beyond the boundaries of the empire, the plague is estimated to have wiped out up to one-third of the population in some areas. By some estimates the plague was responsible for as many as two thousand deaths a day and ultimately caused the deaths of millions of Romans. With a mortality rate as high as ten percent, the Roman army was



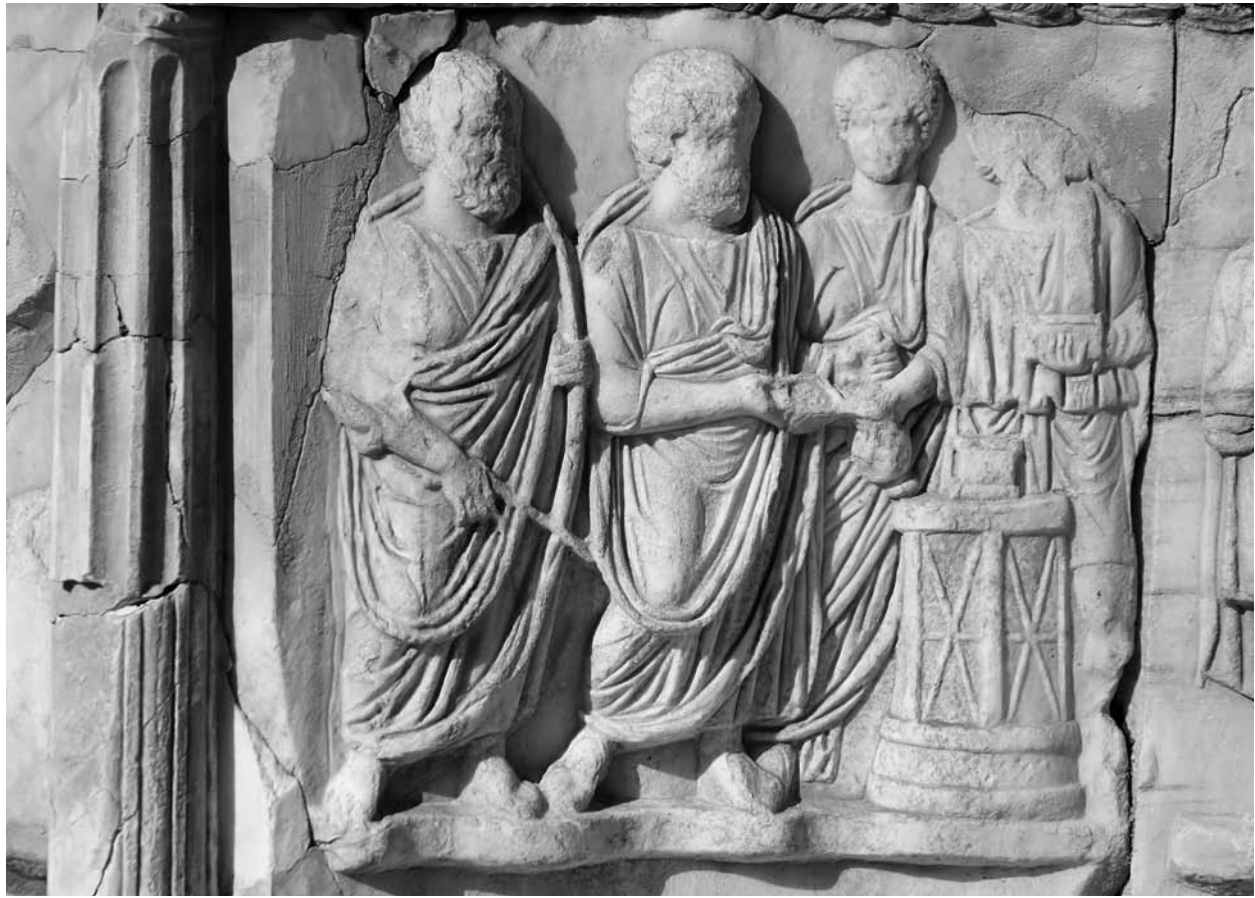
inevitably and severely affected by the plague. Some see the devastating results of the Antonine plagues as a key turning point in the rise and fall of the Roman Empire.

The two universal languages of the empire were Latin and Greek, and under the principate a large number of the empire's inhabitants spoke both. Much of the inspiration for Roman artistic and literary forms derived from Greek models, whose influence became paramount as soon as Rome first established its military dominance over Greece. The first full blossoming of Rome's cultural achievements coincided with the republic's unraveling during the first century BCE. Many of the finest surviving fruits of Roman literature and architecture, however, were produced under the principate. If the late republic can claim the historian Sallust, the poet Catullus, and the statesman Cicero, the principate can claim, among others, the poets Virgil, Ovid, Horace, and Juvenal; the historians Livy and Tacitus; the philosopher and dramatist Seneca; the essayist and biographer Plutarch; the medical theorist Galen; the astronomer Ptolemy; and the architects of the Colosseum and Pantheon. But if the prosperity of the empire derived in large part from the *Pax Romana* (the peace the Romans succeeded in imposing on the Mediterranean world

and used as justification for their imperialism), it also relied heavily on slave labor, a mainstay of the Roman economy since the conquests of the third and second centuries BCE.

Crisis and Recovery

On 31 December 192 CE, Marcus Aurelius's son and successor Commodus (reigned 180–192 CE) was murdered in a palace coup. He was the first emperor to meet a violent end since Domitian, who was assassinated in 96 CE. Claiming to be the incarnation of Hercules and the most skilled of gladiators, Commodus had emphasized the role of emperor as warrior above any other function of the office. All of the contenders in the subsequent civil war legitimized their claim to the imperial throne through acclamation by the empire's soldiers, each being supported by different contingents of the Roman army. The ultimate victor, Septimus Severus (reigned 193–211 CE), secured his title by presenting himself to the people as a military conqueror. The institutions of the principate gave way to an empire ruled and fought over by competing generals. The results were a marked economic decline, political chaos, and a serious destabilization of the empire's borders.



Wall decorated with Roman figures in the ancient city of Sabratha, in the northwestern corner of modern Libya. Romans occupied the city in the second and third centuries CE. Photo by Clara Natoli.

With military victory now the sole means of legitimating imperial authority, the emperors became substantially more bellicose. Warfare became the norm with the advent of sustained attacks on the empire's borders along several fronts, most threateningly by Germanic peoples along the north and Persians along the east. An emperor's defeat on the battlefield was likely to lead to his assassination, and a victory won by one of his generals proved almost as dangerous. The situation was not conducive to maintaining internal order or external defenses, and both suffered. Among the threats to Rome's territorial integrity, the most dramatic was the revolt of Zenobia, queen of Palmyra. She managed to rule over Syria, Anatolia, and Egypt for several years before being defeated by the emperor Aurelian in 272 CE. The years between 211 CE and 284 CE included a succession of some twenty emperors, averaging four years per reign.

The situation stabilized under the rule of Diocletian (reigned 284–305 CE). Although he came to

power as yet another military strongman, he managed to reorganize and thereby stabilize the structure of the Roman state. The most enduring of his reforms included the division of the empire into eastern (Greek-speaking) and western (Latin-speaking) administrative units, the introduction of centralized planning to the Roman economy, and the dramatic expansion of the imperial household staff into a civil bureaucracy that supplanted the obsolete republican magistracies and served as an effective counterweight to the power of the army. Constantine (reigned 306–337 CE) cemented the success of Diocletian's reforms with two revolutionary innovations of his own. The founding of the city of Constantinople (modern Istanbul, Turkey) provided the eastern half of the empire with a capital that possessed legal and symbolic parity with Rome. The transformation of Christianity, in turn, from a persecuted sect to the object of imperial patronage endowed the emperors with a new source of legitimacy independent of both the army and the

civil bureaucracy. The association of the one God with the one emperor provided an effective justification for the divinely instituted authority of imperial rule.

The reforms of Diocletian and Constantine, which transformed the Roman state legally and institutionally into an absolute monarchy, also brought about cultural revival and economic recovery to a society still suffering from the devastations of the Antonine plague. The theologian Augustine of Hippo, the historian Ammianus Marcellinus, the villas whose archaeological remains dot all the former territories of the empire, the numerous monumental Christian churches that survive intact, and the codifications of Roman law under Theodosius II (reigned 408–450 CE) and Justinian (reigned 527–565 CE) are just a few prominent examples of the artistic, literary, and intellectual accomplishments produced by both pagans and Christians between the fourth and sixth centuries.

The Fall of Rome

In spite of these achievements, the same period included a political fragmentation conventionally labeled “the fall of Rome.” The organization of the empire into administrative halves created, alongside the political divide, an increasingly pronounced linguistic and cultural separation between the Greek east and the Latin west. When a new wave of external invasions commenced during the final decades of the fourth century, the Eastern Roman Empire centered in Constantinople managed to survive. The Western Roman Empire, however, lost its territorial integrity and legal identity during the 400s as Germanic leaders established new kingdoms in Italy, France, England, and North Africa. However, historians have come to prefer to describe this process as a “transformation” rather than a “fall.” The material and intellectual culture of these new kingdoms remained recognizably that of Rome, while their kings borrowed their political ideology, symbols and rituals of rule, and administrative techniques from the Roman emperors. Furthermore many of these kings either descended from or themselves had been generals in the service

of the Roman army (which had relied increasingly on foreign auxiliaries and military officers since the third century). Finally, when the Western Roman Empire ceased to exist as a separate entity after the deposition of Romulus Augustulus in 476 CE, the emperor in Constantinople simply claimed legal authority over the entire Roman imperium for himself and his successors.

The Eastern Roman Empire survived as a sovereign state until 1453, having in the meantime provided a prototype for the revival by the Frankish king Charlemagne of a Roman Empire that endured in western Europe from 800 to 1806. After Constantinople fell, Russian czars and Ottoman sultans each proclaimed themselves successors to the Roman emperors. Their states survived into the twentieth century and thus, in a way, so did the Roman Empire. More significantly, the ideas, symbols, institutions, and laws of that empire have provided models for many other states and governing institutions through the centuries and continue to do so today. This partially explains why politicians, journalists, and scholars can productively use the events of Roman history to illuminate current social and political concerns.

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See also Art—Ancient Greece and Rome; Byzantine Empire; Caesar, Augustus; Caesar, Julius; Constantine the Great; Justinian I

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History is little more than the register of the crimes, follies, and misfortunes of mankind. • **Edward Gibbon (1737–1794)**

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Roosevelt, Eleanor

(1884–1962)

DIPLOMAT AND HUMANITARIAN,
WIFE OF PRESIDENT FRANKLIN D. ROOSEVELT

The unprecedented range of Eleanor Roosevelt's activities, both during her troubled marriage to President Franklin D. Roosevelt and after his death in 1945, made her nearly as controversial a figure as her husband. She was a long-time advocate of liberal causes such as child welfare, housing reform, and equal rights for women and racial minorities.

Anna Eleanor Roosevelt, one of the world's most widely admired and powerful women in her time, was the daughter of Elliott Roosevelt and Anna Hall Roosevelt and the niece of Theodore Roosevelt, the twenty-sixth president of the United States. She grew up in a wealthy family that attached great value to community service. It was, however, a family touched by tragedy. One brother died when Eleanor was nine, and both her parents died before she was ten. Relatives raised her and her surviving brother.

When she was fifteen, her family enrolled her at Allenswood, a girls' boarding school outside London. The headmistress's intellectual curiosity and taste for travel and excellence awakened similar interests in Eleanor. After three years, Eleanor reluctantly returned to New York in the summer of 1902 to prepare for her debut into society that winter. Following family tradition, she devoted time to community service, including teaching in a settlement house on Manhattan's Lower East Side.

Soon after Eleanor returned to New York, Franklin Roosevelt, her distant cousin, began to court her, and they were married on 17 March 1905 in New York City. Between 1906 and 1916, Eleanor gave birth to six children, one of whom died in infancy. Franklin's carefree ways and constant pursuit of fun contrasted

with her serious demeanor, making theirs an odd but fascinating pairing. It also spelled doom for their marriage.

Franklin's decision to enter politics forced Eleanor to take on the job of political wife, first in Albany, New York, and then after 1913, in Washington, D.C. She largely found the seemingly endless social obligations tiresome. America's entry into World War I in 1917 enabled her to resume her volunteer work. She worked for the Navy-Marine Corps Relief Society and the Red Cross. This work revitalized her and increased her sense of self-worth when it was suffering most. Eleanor had discovered that Franklin had been having an affair with her social secretary, Lucy Mercer. Devastated, she offered Franklin a divorce. Knowing it would destroy his political career and possibly cost him his mother's financial support, Franklin refused and agreed to stop seeing Mercer.

The marriage became one of convenience and friendship as it settled into a routine in which both spouses kept separate agendas while remaining respectful of and affectionate toward each other. Their relationship, however, had ceased to be an intimate one. Franklin continued seeing Mercer and others, and, in fact, died in Mercer's company at Warm Springs, Georgia, in April of 1945.

Franklin's determination to remain active in politics after contracting poliomyelitis in 1921 depended upon Eleanor's willingness to help keep his name in front of the public. The work dovetailed well with her desire to work for important causes. She joined the Women's Trade Union League and became active in the New York state Democratic Party. She began studying the Congressional Record and learned to evaluate voting records and debates as a member of



A formal portrait of Franklin D. and Eleanor Roosevelt with Anna and baby James, Hyde Park, New York, 1908. Franklin Delano Roosevelt Library, National Archives.

the Legislative Affairs Committee of the League of Women Voters.

When Franklin became governor of New York in 1929, Eleanor found an opportunity to combine the responsibilities of a political hostess with her own interests in social causes. The couple's time together in the governor's mansion left her well prepared for her new role after Franklin's election as president of the United States in 1932. Her twelve years as first lady challenged the prevailing attitudes of the day about a woman's role in a marriage and her place in the political process. Serving as Franklin's "eyes and ears," she traveled throughout the nation giving speeches and providing feedback to the president on the public's opinion on programs and social conditions.

The unprecedented range of Eleanor's activities and her advocacy of liberal causes, such as child welfare, housing reform, and equal rights for women and racial minorities, made her nearly as controversial a figure as her husband. In 1939, when the Daughters

of the American Revolution refused to let Marian Anderson, an African-American opera singer, perform in Washington's Constitution Hall, Eleanor resigned her membership in the organization and arranged to hold the concert at the nearby Lincoln Memorial. The event turned into a massive outdoor celebration attended by seventy-five thousand people. Her defense of the rights of African Americans, youth, and the poor helped to bring groups that had formerly been alienated from the political process into the government and the Democratic Party.

Eleanor instituted regular White House press conferences for women correspondents. Wire services that had not formerly employed women had to do so in order to have a representative present to cover the newsworthy First Lady. Beginning in 1936, she wrote a daily syndicated newspaper column, "My Day," and continued it until just a few weeks before her death in 1962 from a rare form of tuberculosis. After Franklin's death in 1945, President Harry S. Truman appointed her a delegate to the United Nations, where she served as chairman of the Commission on Human Rights (1946–1951) and played a major role in the drafting and adoption of the Universal Declaration of Human Rights in 1948. She remained active in the Democratic Party, working for the election of Democratic presidential nominee Adlai Stevenson in 1952 and 1956.

In 1961, President John F. Kennedy appointed her chair of his Commission on the Status of Women, a position she held until shortly before her death. She had not initially favored the Equal Rights Amendment, saying it would actually do more harm than good for women, but she gradually embraced it. While working for the United Nations and for President Kennedy, Eleanor circled the globe several times, meeting with most of the world's leaders. All the while, she continued to write books and articles. Her work during her White House years and after set a standard by which her successors would be judged.

James G. LEWIS

Independent scholar, Durham, North Carolina

See also Human Rights

Anyone who knows history, particularly the history of Europe, will, I think, recognize that the domination of education or of government by any one particular religious faith is never a happy arrangement for the people. • **Eleanor Roosevelt (1884–1962)**



Eleanor Roosevelt at dedication of the USS *Franklin D. Roosevelt* in New York City, 29 April 1945. Franklin Delano Roosevelt Library, National Archives.

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Roosevelt, Franklin Delano

(1882–1945) THIRTY-SECOND PRESIDENT OF THE UNITED STATES (1933–1945)

Both beloved and hated during his presidency (in office 1933–1945), Franklin Roosevelt expanded the powers of the U.S. government, instituted a number of regulations and reforms to give Americans a “new deal,” and helped preserve Western liberal democracy by aiding Britain during World War II, which created a bulwark against later Soviet aggression.

As the only child of James and Sara Delano Roosevelt, a noted, wealthy family, Franklin had a privileged, sheltered youth. While a student at the exclusive Groton School in Massachusetts, Franklin developed a sense of social responsibility. He graduated from Harvard University in 1904 and then attended Columbia Law School, where he was indifferent about grades. He dropped out of law school upon admission to the New York bar in 1907 and worked three years for a Wall Street law firm.

Personable and outgoing, Franklin married a distant cousin, the shy Anna Eleanor Roosevelt, on 17 March 1905. Her uncle, President Theodore Roosevelt (also Franklin’s cousin), gave the bride away. They had six children, one of whom died in infancy. The Roosevelts stayed active in New York social circles but at the same time devoted considerable energy to the plight of the less fortunate. Although a Democrat, Franklin admired the progressivism of his cousin Theodore and decided early upon a political career. He started by winning a seat as a Democrat in the New York state senate in 1910.

Roosevelt quickly built a reputation as a reformer by taking on the state’s Democratic political machine. For his support of Woodrow Wilson at the hotly contested 1912 Democratic National Convention,

Wilson appointed him assistant secretary of the navy. Roosevelt served from 1913 to 1920 and gained considerable administrative experience. The Roosevelt name and his progressive image won him the party’s vice-presidential nomination in 1920 on the ticket with the conservative Ohio governor, James M. Cox. Roosevelt mounted a vigorous campaign defending Wilson’s advocacy of U.S. membership in the League of Nations. The Democrats were soundly defeated, but Roosevelt never lost sight of the ideals behind the League.

In 1921, Roosevelt contracted poliomyelitis and permanently lost the use of his legs. Although he could have retired to the family’s Hyde Park, New York, estate, he refused to give up his aspirations for public office. Supported by Eleanor and others, he made his return to politics at the 1924 Democratic National Convention with a well-received speech called the “Happy Warrior” and won the New York governorship in 1928 by a narrow margin. His governorship drew on the progressive tradition of his cousin. Its accomplishments included the development of public power, civil-service reform, and social-welfare measures such as relief for the unemployed. Reelected by an overwhelming margin in the 1930 gubernatorial election, Roosevelt soon emerged as a viable opponent to run against the politically vulnerable Herbert Hoover in 1932. By capturing both the Southern and the progressive party elements of the Democratic Party, Roosevelt won the party’s presidential nomination and pledged to give the American people a “New Deal.”

In July 1932, Roosevelt’s Brain Trust, a group of advisors recruited from New York’s Columbia University, assembled to examine the causes and remedies of the Great Depression. Free from the pressures of

First of all, let me assert my firm belief that the only thing we have to fear is fear itself—nameless, unreasoning, unjustified terror which paralyzes needed efforts to convert retreat into advance. • **Franklin D. Roosevelt (1882–1945)**



Franklin D. Roosevelt and Eleanor Roosevelt en route to Washington, D.C., 8 November 1935. Franklin Delano Roosevelt Library, National Archives.

a political campaign, they began planning new government programs to help ease the economic burden in the face of economic collapse. Although he provided no specifics about the New Deal, Roosevelt did discuss conservation, relief, social insurance, and cheaper electricity. Given a choice between the grim, dour Hoover and an exuberant, confident Roosevelt, Democratic voters gave Roosevelt an overwhelming victory in November.

Roosevelt's New Deal program consistently made agricultural recovery and conservation top priorities. The Civilian Conservation Corps and other land management agencies restored lands ravaged by erosion and built recreation facilities in the national parks and forests. The Tennessee Valley Authority, which brought cheap electrical power to millions, focused on improving the living and working conditions of

folks living in that area. In addition, the New Deal sought to rationalize the business system by temporarily ending bitter economic warfare through the National Industrial Recovery Act and its fair practice codes. The New Deal also ended child labor and introduced unemployment insurance and a social security program that guaranteed income for retired Americans. It encouraged the growth of industrial unionism and national legislation to define maximum hours and minimum wages.

Not everyone supported his programs. Emergency expenditures for relief poured millions into the economy, leading to record federal deficits even though he had promised a balanced budget. If Congress or the courts balked at his programs, he used his executive powers to enact them. Some accused him of introducing a socialist agenda or of undermining free-market capitalism. He deflected the criticism well enough to win a record-breaking four terms.

In the 1930s, economic recovery took precedent over foreign policy. Nevertheless, the president sought to improve relations with Latin America through his Good Neighbor Policy. He had hoped to keep the United States out of World War II, which began in Europe in September of 1939, but when the New Deal began winding down, he turned his attention to foreign affairs. Adolf Hitler's stunning victories in Western Europe prompted Roosevelt's decision to seek a third term in 1940. Gradually he moved the United States towards a war footing through various programs to arm Britain and the Soviet Union. The Japanese attack on Pearl Harbor on 7 December 1941 and Germany's declaration of war the next day ended American neutrality.

During World War II, Roosevelt and British prime minister Winston Churchill personally determined Allied military and naval strategy in the West. To prevent a repeat of the problems after World War I, Roosevelt insisted on an unconditional surrender. He relied a great deal on the powers of personal persuasion, believing that he could control Soviet leader Joseph Stalin and foster Soviet-U.S. cooperation through a newly created United Nations. Instead, after the war Stalin imposed Soviet-style communist



American and Allied leaders at an international conference during World War II. National Archives.

governments throughout Eastern Europe. The strain of wartime leadership sapped Roosevelt's health. He died on 12 April 1945 of a cerebral hemorrhage.

Both beloved and hated during his presidency, Franklin Roosevelt transformed the nation by expanding the powers of the federal government. In the face of the potential collapse of the capitalist system, Roosevelt ushered in the welfare state, in part by managing the economy in order to achieve publicly determined ends. By aiding Britain in World War II, he helped preserve Western liberal democracy and created a bulwark against later Soviet aggression. In the process, he converted the Democratic Party to majority status through its appeal to urbanites, minorities, and working-class voters, and made it the party of liberal reform in the twentieth century.

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See also World War II

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Rubber

Between 1760 and 1940 rubber was converted from a trivial curiosity into a major international industry. It has become central to modern living and crucial to the waging of war. This transformation was not the result of a single breakthrough or even efforts in one country, but was the outcome of a gradual accumulation of technical advances and commercial developments across the world.

Rubber latex, obtained by cutting the bark of certain trees, was used in Central and South America for some fifteen centuries before the arrival of Christopher Columbus. It was made into balls and rubber shoes. Although Columbus and subsequent explorers saw these rubber balls, they did not see this strange material as having any significance. The French scientist Charles de la Condamine, who came across rubber during an expedition to Peru in the 1730s, was the first to suggest the potential uses of rubber such as waterproofed cloth. He called it *caoutchouc* (from the native name *cahuchu*, meaning “weeping wood”). François Fresneau, a French engineer who had lived in Cayenne, French Guiana, also promoted the use of rubber and discovered the value of turpentine as a solvent for rubber in 1763. The first important use of rubber (dating from 1769) was the removal of pencil marks. Rubber-coated cloth was crucial to the development of balloons in the 1780s and 1790s, and suspenders were being made by 1803. There were two important breakthroughs in the 1820s. The English businessman Thomas Hancock invented the masticator, which allowed better processing of rubber, in 1820, and he continued to revolutionize the industry for over two decades.

Meanwhile the Scottish chemist Charles Macintosh replaced Fresneau’s turpentine with a hydrocarbon solvent obtained from coal tar in 1823 and used the rubber solution as glue between two layers of cloth. This waterproof material produced a superior raincoat that soon became known as a mackintosh. In 1834, Hancock and Macintosh joined forces to form Charles Macintosh & Co. in Manchester; it became the leading rubber company in the world.

The Vulcanization of Rubber

Despite the efforts of Hancock and Macintosh, rubber was still a problematic material in the 1830s. In cold weather rubber (and rubberized cloth) became rigid, and in very hot weather it was sticky and could even melt. The American inventor Charles Goodyear (1800–1860) found the answer to these problems in 1839. He heated rubber with sulfur and white lead (which accelerated the reaction) to produce a harder material which could withstand changes in temperature. The process, which Goodyear called vulcanization, after the Roman god of fire, was then copied by Hancock, who improved the procedure. The extent to which Goodyear was indebted to the earlier work of Nathaniel Hayward and the morality of Hancock’s conduct remain controversial even today. However it came about, vulcanization laid the basis of the modern rubber industry. At first the uses of vulcanized rubber were relatively mundane, such as boots, overshoes, and air beds. Ebonite, a hard material produced by prolonged vulcanization of rubber, was important as an early plastic, used to make boxes and jewelry.

Rubber became an important material only after the development of the pneumatic tire by the Scottish



House of a wealthy rubber collector along the Madeira River, a tributary of the Amazon in Brazil.

veterinary surgeon John Dunlop in 1888. Dunlop reintroduced the pneumatic tire (it had originally been patented by the Scottish engineer Robert William Thomson in 1846) with the bicycle in mind. In 1895, Edouard and André Michelin took the important step of adapting their bicycle tire to the automobile, thereby establishing the major use of rubber in modern society. Nearly all of the leading rubber companies were founded in this period, including B. F. Goodrich (1880), Dunlop (1889), Michelin (1889), U.S. Rubber, formed by a merger of older firms and later renamed Uniroyal (1892), Goodyear, which had no connection with Charles Goodyear (1898), and Firestone (1900). By 1910, Akron, Ohio, had become the center of the American tire industry.

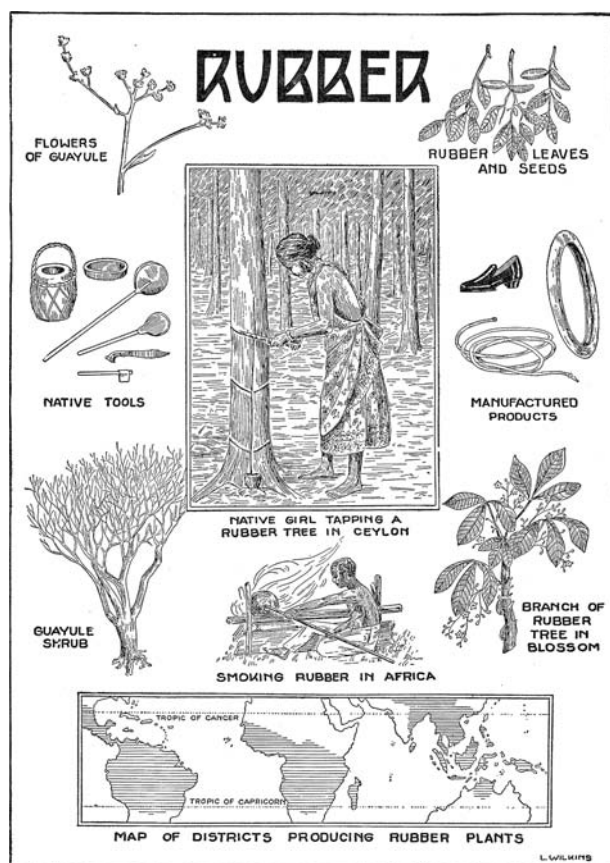
Rubber in the Far East

When the Michelin brothers invented the automobile tire, the sole source of rubber was tapping of wild trees in the Amazon River basin. The increased demand for rubber for bicycle tires was an economic bonanza for the Amazonian rubber traders, symbolized

by the lavish opera house at Manaus, Brazil, built in 1896. It was, and remains, impossible to establish rubber plantations in the Amazon basin because of the leaf blight that attacks rubber trees there if they are grown close together, yet the harvesting of rubber from wild trees alone was clearly unsustainable. The solution was the development of plantations in Malaya and the Dutch East Indies (now Indonesia). The British government had established plantations in Ceylon in the late 1870s by buying seeds in Brazil (the popular myth that they were smuggled out is incorrect), but the real breakthrough was the planting of rubber trees in Malaya in the late 1890s, following a fall in the price of the leading cash crop, coffee.

Synthetic Rubber

The industrial synthesis of this important natural material was a bold undertaking and took many years to attain success. The first synthetic rubber was made by the English chemist William Tilden in 1882, but it was not economical since it was made from turpentine, which was both expensive and relatively scarce.



An encyclopedia drawing summarizing all one needs to know about rubber, an important raw product during the colonial era.

When rubber prices were high in 1910, attempts to produce synthetic rubber were pursued in England, Germany, Russia, and the United States. The most successful was Bayer's "methyl rubber," made from acetone, which was used by Germany as a rubber substitute during World War I. Interest in synthetic rubber revived in 1925, as the result of an attempt by the British government to restrict exports from Malaya and Ceylon, and synthetic rubber production was started in the Soviet Union, Germany, and the United States in the 1930s. The Soviet industry made a weak synthetic rubber (polybutadiene) from ethyl alcohol and set up the first synthetic rubber factories at Yaroslavl' and Voronezh in 1932. By 1940 production had reached 40,000 to 50,000 tons. The German firm I.G. Farben (formed by a merger of Bayer with BASF and Hoechst in 1925) developed a new class of synthetic rubber called copolymers, one of which turned out to be suitable for tires, while another was oil-resistant and was used for gaskets and gasoline

hoses. When the Nazis came to power in 1933, they were keen to use these synthetics as a substitute for natural rubber. Within ten years, I.G. Farben had erected three factories and Germany was producing thousands of tons of synthetic rubber. After the war ended, information from the German plants (and deported chemists in the case of the Soviets) assisted the technical development of the American and Soviet industries.

Initial attempts to create an American industry faltered, but progress was rapid when America was cut off from the Far Eastern plantations after Pearl



Rubber latex, obtained by cutting the bark of certain trees, was used in Central and South America for some fifteen centuries before the arrival of Christopher Columbus.



A worker inspects a landing wheel of a transport plane at Willow Run. Photo by Howard R. Hollem. Library of Congress.

Harbor. Most of the U.S.-produced synthetic rubber, manufactured under government control and called GR-S (Government Rubber–Styrene), was petroleum-based, but some of it was made from maize-based ethyl alcohol to appease the vociferous farm lobby. The decision to keep most of the plants open after World War II was vindicated by the outbreak of the Korean War in June 1950, which was preceded by a rapid increase in the price of natural rubber. The technical improvements introduced during this period, polymerization at lower temperatures and addition of mineral oil, made GR-S competitive with natural rubber. As a result, the industry was privatized by Congress between 1953 and 1955.

The Modern Rubber Industry

West Germany adopted the American petroleum-based technology for synthetic rubber in the early 1950s. Over the next decade, synthetic rubber factories were established in Britain, Italy, France, Japan, and even Brazil, the original home of natural rubber.

Synthetic rubber overtook natural rubber around 1960. The American synthetic rubber industry maintained its leading position, despite growing competition from Japan. In tire manufacture, however, the Americans had failed to realize the importance of the radial tire, which had been introduced by Michelin in 1949.

The oil crisis of 1973 had a severe impact on the American industry. Its synthetic rubber production was hit by the quadrupling of the price of its raw material, oil. Radial tires (which can only be made from natural rubber) reduced fuel consumption of automobiles and sales soared in the 1970s, but then Firestone's radial tires were shown to be unsafe and had to be recalled. In the 1980s, all the plants in Akron were closed, Goodrich and Uniroyal merged their tire businesses and then sold the joint operation to Michelin, and Firestone was taken over by the Japanese firm Bridgestone. Since the oil crises of the 1970s, natural and synthetic rubbers have settled into an uneasy but enduring co-existence. It now appears unlikely either form will disappear completely. Whatever form it takes, rubber will continue to be important as long as we use automobiles, take flights, or just walk along the road.

Peter MORRIS

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See also Automobile

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Rumi

(1207–1273)

PERSIAN POET

The poems of the thirteenth-century mystic Rumi—who lived in what is now Turkey and wrote in Persian—preached ecumenism, compassion for one’s fellow being, and tolerance. The Mevlevi Sufi order of dervishes founded by Rumi danced and sang his verses and thus achieved ecstatic encounter with God. His works, translated into many languages, continue to inspire those in the Islamic heartland and beyond.

Jalal ad-Din ar-Rumi, known as Mevlana—the Turkicized form of the Arabic word *Mawlana*, which means “our master”—is one of the best-known figures of Muslim spirituality and devotional poetry worldwide. He established his own Sufi order, known as the Mevlevi, in honor of its founder. The Mevlevi Sufis (popularly called the Whirling Dervishes in the West) are based in Konya, Turkey, where Rumi lies buried. The order is distinguished by its special rites, which include music and a special whirling dance, designed to foster intense contemplation of the Divine Beloved (God).

Rumi was born in Balkh in present-day Afghanistan. His father was a well-known jurist, preacher, and Sufi mystic who combined knowledge of both the exoteric sciences, such as law and hadith studies, with the esoteric sciences, such as the study of spiritual techniques and practices. When Rumi was about twelve years old, his family fled Balkh in fear of the Mongols, who were drawing close to the city. They traveled through a considerable part of the Muslim world on their way to Mecca, and after performing the pilgrimage there, settled in Konya, where they were received warmly by the Seljuk ruler.

Rumi was given a sound Islamic education that stressed knowledge of the Qur’an, hadith (sayings of the Prophet Muhammad), Arabic grammar, religious law, principles of jurisprudence, Qur’an commentary, history, logic, philosophy, mathematics, and astronomy, among other subjects. From his father he also became acquainted with the practices and techniques of Sufism, albeit informally.

In 1231, when Rumi was twenty-four, his father passed away. Rumi, already recognized for his considerable learning, inherited his father’s position as professor in religious studies and preacher to the people of Konya. In 1232 the Sufi Burhan al-Din Tirmidhi who had been a disciple of Rumi’s father, moved to Konya, and Rumi began to receive formal training in the mystical ways of Sufism. Rumi’s association with Tirmidhi continued until the latter’s death in 1240.

For the next four years, Rumi continued his activities as a preacher and as a doctor of law in the Hanafi School of Islamic jurisprudence, gaining widespread renown for his erudition. He also continued his Sufi practices, becoming a master in his own right, which means that he traversed the various stations of the Sufi path and attained the mystical vision of God. His Sufi practices appear not to have had much effect on his outward life as a conventional scholar, jurist, and religious counselor to his people.

All this was to change in 1244 when a charismatic and mysterious individual by the name of Shams al-Din of Tabriz, popularly known as Shams-i Tabrizi, arrived in Konya and entered Rumi’s life. Rumi described the transformative aspects of this fateful encounter in his poetry:



Rumi's teacher, Shams-i Tabrizi, portrayed in an illustrated copy of Rumi's poem, the "Diwan-e Shams-i Tabriz-i," circa 1502–1504. Bibliothèque Nationale de France.

I was the country's sober ascetic, I used to teach from the pulpit—but destiny made me one of Thy hand-clapping lovers; My hand always used to hold a Koran, but now it holds Love's flagon; My mouth was filled with glorification, but now it recites only poetry and songs! (Chittick 1983, 3)

Rumi became inseparable from Shams as a friend and spiritual disciple. One prominent scholar said of Shams's influence on Rumi: "(H)e was transformed from a sober jurisprudent to an intoxicated celebrant of the mysteries of Divine Love. One could say that without Shams, there would have been no Rumi" (Chittick 1983, 3). This is only slight exaggeration;

the world might well have been deprived of what is now considered to be among the best-selling poetry of all time if the two had never met.

Roughly in the year 1247, Shams disappeared, perhaps killed by Rumi's followers, who were jealous of his influence over their master. Rumi was rendered completely bereft at the permanent loss of his beloved master and companion. But although Shams was no longer a physical presence in Rumi's life, he became immortalized as a fixed, phantom presence in the latter's heart and mind. From this year until Rumi's death in 1273, he stopped his public preaching and wrote poetry incessantly, many of which are Persian *ghazals*, or love songs, in which he often speaks of the pain of being separated from Shams. But Rumi frequently invoked the name *Shams* as the representation of the image of God, the Divine Beloved. The word *shams* means "sun"; by its invocation, Rumi referred to both his friend and "the Sun of the Sun," the Almighty who is the true Beloved and the Ultimate Reality.

Among his major compositions are the *Diwan-i Shams-i Tabrizi* (Collected Poems of Shams-i Tabrizi), which consists of about 40,000 *ghazals* and quatrains, and the *Mathnawi* (couplets), which contains roughly twenty-five thousand verses of mostly didactic poetry. Translations of a major part of his oeuvre into several Western languages are available, and they have helped to establish his reputation as a poet and thinker for the ages: one who preached ecumenism, compassion for one's fellow being, and tolerance in his exquisite poems.

Rumi, in fact, has become the best-selling poet in contemporary America, and his poetry continues to inspire traditional Sufis in the Islamic heartlands and beyond, New Age spiritual devotees, and other mystical practitioners in the West in their devotions. The Mevlevi Sufi order founded by Rumi exists to this day and its adherents perform their popular "folk dances" all over the world. Rumi has, furthermore, become a byword in certain circles for a tolerant, compassionate Islam that serves as an urgent antidote to the more militant version that dominates

the news today. Such a multifaceted legacy is a testimony to humanity's exceptional gift for addressing basic concerns in an accessible yet eloquently profound idiom.

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See also Islamic World

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Russian Soviet Empire

With the Mongols in decline by 1480, Ivan III declared himself Sovereign of All the Russias. His successors became “czars” (from “Caesar”) and Moscow the “third Rome”—thus the Russian Empire was born. Continued territorial and economic growth generated counter pressures that led to the empire’s undoing by 1900—until the Communist era and the emergence of the USSR as a superpower in the second half of the twentieth century.

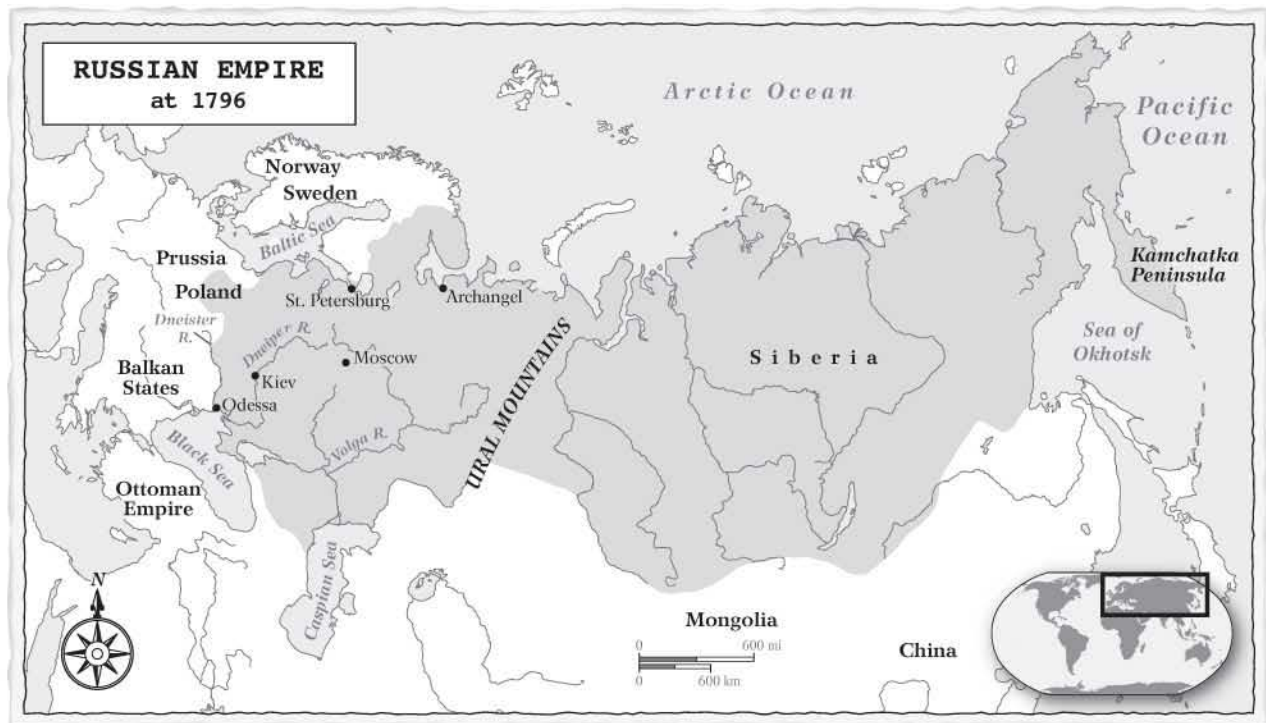
The Russian Empire has its origins in the rise of the Principality (*kniazhestvo*) of Moscow in the fourteenth and fifteenth centuries. The Muscovite Grand Princes successfully exploited their position as tax collectors for the Golden Horde, which ruled most of Russia in the wake of the Mongol conquest in 1240, to impose their authority over the successor states to Kievan Rus. By the early fifteenth century, Mongol power had begun to decline. At this time, Moscow emerged as the champion of Orthodox Christianity (the official religion of Kievan Rus since 988) and outmaneuvered Catholic Lithuania to legitimate itself as the “gatherer of Russian lands.” After 1480, Grand Prince Ivan III (reigned 1462–1505) ceased paying tribute to the Khan and proclaimed himself Sovereign of All the Russias. (Ivan had also seized upon the collapse of Constantinople in 1453 by marrying the last heiress to the Byzantine throne.) His successors were increasingly referred to as czars (derived from *Caesar*), while Moscow was proclaimed the “third Rome” and became the center of the Orthodox Christian world.

Henceforth, the czar would regard himself as a universal ruler, on a par with the Ottoman Sultan or

the Holy Roman Emperor. After the conquest in the 1550s of Astrakhan and Kazan—successor states to the Golden Horde—the czars also began to claim the descent from the Chingizid Khans, the dynasty of Chinggis (Genghis) Khan. They used the popular image of Mongol rule as arbitrary and beyond divine sanction to great effect in the imposition of autocratic rule over the whole of Russian society, although the roots of their despotism lay largely in the difficulty of extracting a sizable surplus, given the country’s poor soil and difficult climate. Autocracy reached an apogee with the establishment of the Oprichnina (literally “setting apart”), a policy that imposed the Czar’s unbridled terroristic rule over a quarter of the country and (to Ivan’s mind) constituted a model for the whole of Muscovy. All these factors have led many writers to conclude that Russian rule was a classic example of “Oriental despotism,” whose fundamental essence would remain unchanged through the Soviet period.

Autocracy and Isolation

In the sixteenth and seventeenth centuries, the Muscovite realm formed, by and large, a world unto itself—to some, a quintessentially Eurasian civilization. The disintegration of the Mongol-dominated system of the thirteenth and early fourteenth centuries resulted in a diminution of contacts and the growth of regional particularisms across Eurasia. Muscovy’s frontiers were not coterminous with those of any other core area, and its espousal of Orthodoxy greatly limited its exposure to the culture of proximate Muslim or Catholic powers. In the wake of Ivan the Terrible’s failure to push through to the Baltic Sea in the



Livonian War (1558–1583), the economic and demographic dislocations of the Oprichnina, and the Polish invasion, revolts, and dynastic crises of the “Time of Troubles” (1600–1613), Muscovy contracted. Its detachment was further compounded by the closure of its borders and the restriction of external trade by the Romanov czars of the seventeenth century. Some judge the failure to integrate into Europe at this time as an unmitigated disaster, responsible for the perpetuation of Russian autocracy and backwardness, though others contend that the failed incorporation allowed Russia to preserve political and economic independence. In fact, despite autocracy, the seventeenth century saw the empire attain its fastest rate of growth. Russia took advantage of the collapse of Mongol power to colonize lightly populated Siberia by 1649, and benefited from the decline of Poland by incorporating the Ukraine in 1667. Expansion was stimulated by a crusading mentality that encompassed a desire to win converts for Orthodoxy, as well as recognition of the czar as a universal ruler. But it was driven even more by the fur trade and the desire of marginalized groups—runaway peasants, convicts,

Cossacks, merchants, and religious schismatics—to flee autocratic control. Thus, the czars’ rule over the new Siberian towns, the Ukrainian Cossacks, and nomadic peoples such as the Oirats and the Nogais remained nominal.

An Expanding Empire

The character of the empire was partially transformed during the reign of Peter I (the Great, 1682–1725) and that of his successors. The thrust of the Petrine reforms was making Russia militarily competitive with European powers, but in order for this to be achieved the social and cultural foundations of the autocratic regime had to be altered. Peter introduced a standing army, a civil service, and a European-style technical-scientific infrastructure. On this basis, he eventually won the Great Northern War (1700–1721) against Sweden and gave Russia an outlet to the Baltic coast, where he established his “window on the West”—the new capital of Saint Petersburg. With Russia’s arrival as a European power, the czar now styled himself Emperor, while the country was renamed

History is politics projected into the past. • M. N. Pokrovsky (1868–1932)

from Rus to the Latinized Rossiia. A weakened Orthodox Church no longer constituted the empire's main source of legitimacy, which would now emanate from the manifest destiny to expand and the specifically Russian *mission civilisatrice* of the state itself. But Peter's reforms continued to rely on autocratic means—tributary extraction, mass population transfers, and a newly constituted political police. Subsequent rulers, though they may have freed the nobility (1762), granted the right for the free establishment of industries (1767), liberated the serfs (1861), and permitted the creation of a legislature (the Duma, in 1905), never relinquished their monopoly on political power.

Unlike the empires of western Europe, the Russian Empire was a contiguous and continental power that lacked easily defensible boundaries and therefore pursued a predominately territorialist rather than a maritime strategy. As a result, it pursued expansion in all directions and had to devote an overwhelming part of its state budget to its military. At the same time, Russia remained economically underdeveloped, and some of its colonies—notably Poland (dismembered between 1772 and 1815) and Finland (acquired in 1808)—exhibited greater economic and social sophistication than the Russian core area itself. New Russian territories in the east and south—Crimea (conquered by 1790), the region of Caucasasia (subdued by the mid-nineteenth century), and Turkestan (subjugated between 1850 and 1900)—did resemble European colonies, being administered through a mixture of economic extraction and development, civilizing paternalism, and the cooptation of local elites. Unlike Western possessions, however, they had relatively low populations, relatively more colonial settlers, and displayed far fewer differences in terrain, climate and ecology relative to the metropolitan power.

Because of its greater proximity to Europe, Russia was forced to respond to European military, economic, scientific, and technological innovations earlier, but this in turn accounted for its greater dynamism vis-à-vis other tributary and contiguous empires. The Russian Empire expanded at the expense



of the Ottomans in the Black Sea region and the Persians in Central Asia, and, by the nineteenth century, established hegemony over Chinese Manchuria. Still, its effort to extend its control by incorporating expanding Ukrainian and Belarussian populations—both Orthodox and both heirs of Kievan Rus—into its ethnic core proved less successful than similar efforts by China. The late-nineteenth-century policies of cultural Russification, which affirmed nationality as the third pillar of the regime alongside autocracy and orthodoxy, fared no better than the attempted federalism of the Habsburgs.

Continued territorial and economic growth generated increasing counter pressures that eventually led to the empire's undoing. Externally, its early successes contributed to the rise of more powerful rivals along its perimeter. In the west, Poland and Sweden were replaced by a united German Empire—an industrial powerhouse with a much larger population. In the south, France and Britain propped up the declining Ottoman and Persian empires, while in the east, a vibrant Japan filled the vacuum created by a retreating China. Victory against Napoleon in 1812–1815



This drawing from the late 1800s depicts a Russian peasant family. Although Russia was urbanized and industrialized, the idea of the Russian peasant was a common one throughout Europe.

established Russia as the main guardian of political reaction in Europe, but exposure to the ideas of the French Revolution infected its own elite with a dissident spirit. The humiliating defeats of the Crimean War (1855) and the Russo-Japanese War (1905) exacerbated social discontent, as did the rapid industrialization program pursued under Nicholas II at the turn of the twentieth century. The paradox of Russia as both backward and a colonial power widened its identity crisis. The Westernizer–Slavophile debate ultimately resulted in what some regard as a revolutionary synthesis and others as a dead end.

Communist Rule

Czarism succumbed to the combined pressures of World War I and urban unrest in 1917, but the Bolshevik Party, which came to power in the October Revolution later that year, reconstituted the empire. As Marxists, the Bolsheviks were dedicated to the replacement of the world capitalist system with proletarian democracy, but the practice of “democratic centralism” favored by their leader Vladimir Ilyich Lenin (1870–1924) promoted the Party’s control over and above that of the workers’ councils (soviets) in whose name they governed. During the ensuing Civil War (1918–1921), the Bolshevik base corresponded

to the old Muscovite core (with the capital reestablished in Moscow), and their eventual victory resulted not in worldwide revolution but in the reconquest of the czarist empire (minus Finland, Poland, and the Baltic states). Subsequently, the Bolsheviks focused their attention on Asia and proclaimed Soviet Russia as the global leader of the anticolonialist struggle. In the same spirit, in 1922, they established the Union of Soviet Socialist Republics (USSR), which recognized the formal sovereignty of the non-Russian republics (including the Ukraine, Belorussia, Transcaucasia, and Turkestan), and promoted their cultural autonomy by suppressing overt Russian nationalism. At the same time, central control was cemented by reconfiguring the Bolsheviks as the All-Union Communist Party, and the world’s first “affirmative action empire” came into being (Martin 2001).

The Communist Party’s monopoly on power, coupled with the country’s economic collapse following seven years of war, its international isolation as a socialist state, and the Marxist antipathy to market economics contributed to the USSR turning into a continuation of the Russian Empire. Under Joseph Stalin (1879–1953), who emerged as Lenin’s successor by the late 1920s, the pursuit of “socialism in one country” denoted gaining complete control of the domestic economy following the collectivization of the peasant land holdings, establishing Marxism-Leninism as the guiding ideology of all social and cultural life, constructing a cult of personality, and prosecuting mass purges and population transfers. The autarkic imperative of Stalin’s USSR resembled that of seventeenth-century Muscovy, and authors who characterize the former as a totalitarian state explicitly establish its links with earlier autocracy. Moreover, under conditions of monolithic rule, the heightened international insecurity of the 1930s, and especially the Great Patriotic War (the Russian struggle against the World War II Nazi offensive of 1941–1945), non-Russian elites and, in the case of the Crimean Tartars and Kalmucks, whole peoples were regarded as unreliable, and viciously persecuted, while Great Russian culture and Russification were promoted as important mobilizing forces.



The Novograd monument to celebrate Russia's 1000th anniversary, as photographed between 1860 and 1880.

Postwar Superpower and Beyond

The emergence of the USSR as a superpower in the second half of the twentieth century has led some scholars to regard the Soviet Empire as the culmination of a singularly successful and uniquely Russian alternative modernity. In the 1930s, Stalin oversaw the mobilization of the USSR's vast resources in the construction of a modern industrial base, and in achieving spectacular rates of economic growth. These factors enabled the Soviet Union to defeat Nazi Germany in World War II and subsequently to become a nuclear power and the main strategic competitor of the United States (though a *de facto* junior partner in the American-led world order). In the wake of the war, the USSR reincorporated the Baltics, the western parts of Ukraine and Belorussia, and Bessarabia, and conquered East Prussia.

Its newly acquired string of satellite states in Eastern and Central Europe, organized on the Soviet model, paralleled the more successful East Asian single-party regimes—Japan, Taiwan, and South Korea—constructed at the same time by the United States. Because it had now emerged as a predominantly urban country, its development model likewise proved attractive to many emerging states of the Third World, especially those ruled by native revolutionary movements (Yugoslavia, China, North Korea, Cuba, Vietnam). The Soviet Union also supported non-Communist clients in Africa, the Middle East, and South Asia. Soviet leaders attempted to develop a socialist division of labor within its sphere of influence, although in practice, exchanges often amounted to colonialist underdevelopment (as in cotton-growing Uzbekistan) and transfers of military technology.

Nevertheless, the realities of being an empire in the twentieth century weighed upon the Soviet Union to a much greater degree than its leaders or totalitarian theorists realized. Its success during the Cold War was largely conjunctural—a product of the temporary vacuum created by the wartime destruction in Europe and Japan. The Soviet “command-administrative” system proved incapable of long-term competition with Western and Asian economies under the conditions of “peaceful coexistence” promoted by Stalin’s successors. The stagnation of “socialist development,” partial cultural liberalization, the exposing of Stalinist crimes, and increased contacts with the outside world had the effect of demoralizing Soviet elites and undermining revolutionary legitimacy. By the mid-1980s, military overextension and economic contraction convinced sections of the governing elite that the empire had become prohibitively expensive.

Under Mikhail Gorbachev, who led the nation from 1985 to 1991, an attempt at structural reform (*perestroika*), intended to regenerate economic growth, end the Cold War, and restore faith in the Soviet system instead fully exposed the incompatibility of socialism and empire and transformed the USSR’s composition as a union of nominally sovereign republics into a liability. Gorbachev’s refusal to prop up and subsidize the unpopular Communist governments in Eastern Europe resulted in the revolutions of 1989, which, together with the erosion of Party power and economic chaos in the Soviet Union itself, prompted the rise of powerful secessionist movements in the individual republics, including the Russian Federation itself. In 1991, the new republican presidents dissolved the Union, but the collapse of the Soviet Empire was not welcome everywhere, and, by 2004, new imperial rumblings were evident.

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See also Art—Russia; Cold War; Communism and Socialism; Détente; Europe, Eastern; Lenin, Vladimir Ilyich; Marx, Karl; Revolution—Russia; Revolutions—Communist; Stalin, Joseph; World War II

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Sailing Ships

For nearly all of human history the most efficient way of conveying goods and people over great distances was by water, especially using wind power harnessed by sails to propel a vessel. Not until the advent of steam-powered ships during the nineteenth century did wind-powered sailing ships cease to be the dominant mode of fast long-distance transportation.

Sailing ships date at least to the ancient Egyptians and Phoenicians, although people probably used smaller sailing vessels earlier. Boats were crafted from reeds, skins, and wood, the earliest form of wooden boats being dugouts. Early sailing ships were built primarily of planks, with the planks either joined end to end by mortise-and-tenon joinery or joined in an overlapping fashion (clinker construction) and fastened by dowels or nails. Sails were made out of woven cloth (cotton, flax, or hemp), although some early Egyptian sails were made from papyrus fibers and other woven grasses. Many early sailing vessels were also outfitted with oars, which provided easier mobility and optional power when wind was absent. Early ships were lateen (square rigged). These methods provided more sail power but less maneuverability than modern rigging with triangular sails. Indeed, until the nineteenth century and the technology that powered ships by steam, using the wind to sail on rivers and seas was the most expedient way to move people (and the goods needed to sustain them) over long distances.

Antiquity–400 CE

Since the mid-twentieth century and the development of underwater archaeology, a huge expansion

in people's knowledge of sailing ships has allowed scholars to study the remains of ships from all periods of history. The earliest archaeological evidence for a water vessel is a birch paddle found at a prehistoric campsite in England from about 6000 BCE. The earliest evidence for a sailing vessel comes from a model sailing raft excavated in Chile. Rafts of logs bound together with a mast and sail were probably the earliest forms of prehistoric sailing watercraft. Skin boats, constructed of animal hides sewn together, were primarily found in northern cultures, particularly the Eskimo, Irish, and northern Russian. Eskimo kayaks and umiaks (open Eskimo boats made of a wooden frame covered with hide) were primarily rowed, although some evidence indicates sail use. Large versions of the Irish curragh, constructed of ox hide, were sailed and took early Irish travelers to the Hebrides, Shetland Islands, and even to Iceland. Reed boats were used primarily in the South Pacific, in the Americas, and among the Marsh Arabs of southern Iraq. Dugout technology is ubiquitous through world cultures, but in the South Pacific large dugouts have outriggers that have sails in addition to oars. Many scholars believe that these sorts of craft made possible human migration throughout the South Pacific.

Plank construction allowing larger ships developed independently in a number of places, including Egypt, England, and China. The earliest evidence comes from Egypt, where vessels were constructed out of cedar planks joined edge to edge but with no internal framing or keel. Because of the unique river conditions of the Nile River, one could float downstream with the current and return under sail upstream. The earliest surviving Egyptian boat, the royal ship of Cheops,



***Canja under Sail*, an illustration from a book about travels to discover the source of the Nile in the eighteenth century.** Schomburg Center for Research in Black Culture / Manuscripts, Archives and Rare Books Division.

dates to 2650 BCE and was excavated in 1954 from a burial pit alongside the Great Pyramid. Many artistic depictions feature Egyptian boats, including seagoing vessels. These depictions invariably show both sails and rowers. Around 1500 BCE Queen Hatshepsut ordered the construction of a fleet of large craft similar to the Nile craft with rowers, a single large mast, and a rudder for a voyage down the eastern coast of Africa. A pictorial account of the voyage remains at a temple in Deir-el-Bahari.

In 1982 researchers found an underwater wreck of an early Levantine (relating to the countries bordering on the eastern Mediterranean) commercial seagoing ship at Ulu Burun off the Turkish coast, dating to 1350 BCE. It was a sturdier craft than Egyptian craft of the time, with a large keel and planks lashed together. Egyptian wall paintings also reveal evidence for Minoan and Mycenaean ships, showing them to be similar in design to Egyptian ships but having only sails and no rowers.

The greatest ancient seafarers, the Phoenicians, sailed ships throughout the Mediterranean Sea, and evidence points to some voyages along the Atlantic coasts of Africa and France. In form, their merchant ships were more similar to Cretan ships than

Egyptian ships, with square rigging and often two banks of rowers. The Greeks developed a specialized high-speed warship, the trireme (a galley with three banks of oars, a sail, and a large battering ram on the bow just at the waterline), which could damage and sink enemy ships. The trireme had a single mast and sails that were square rigged, but during battle rowers were used for maneuverability and control. The Greeks used the trireme at the Battle of Salamis in the Saronic Gulf in 480 BCE, when the Athenians defeated a larger Persian fleet and won the Persian Wars.

Researchers have found Roman merchant ships in abundance in the Mediterranean and Black Seas; more than four hundred wrecks have been identified. Roman merchant ships relied exclusively on sail power and were used to transport all manner of goods, including wine, olive oil, marble, and grain. The majority of merchant ships were single or double masted, with square sails, and sometimes a triangular topsail on the main mast. The second mast, in front of the main mast, was rigged with a smaller steering sail called the *artemon*. These were medium-sized ships that could haul a cargo of around 300 metric tons. Most impressive in the Roman merchant fleet of the first and second centuries CE were the *navis oneraria* (transport ships) that carried grain from Egypt and North Africa to the Roman port of Ostia, sometimes 1,200 metric tons in a single voyage.

The earliest northern European planked boats date from 1217 to 715 BCE. They were relatively small river craft, about 14 meters long, called “Ferriby” and “Brigg” boats. They were discovered in the Humber River in Yorkshire, England, and have a complex, sewn-plank joinery. The earliest Asian evidence of planked construction dates to 50 BCE. The Hjortspring boat, discovered in a peat bog in Denmark, dates to 300 BCE and is constructed of plank with lashings holding the boat together and overlapping strakes (continuous bands of hull planking or plates on a ship). Experts think this boat was a forerunner of the clinker (overlapping plank) Scandinavian craft. All of these vessels exhibit shell-first construction, rather than frame-first construction, which would become the standard during the high Middle Ages.



Junks float majestically in the Huangpu River, Shanghai. Photo by Joan Lebold Cohen.

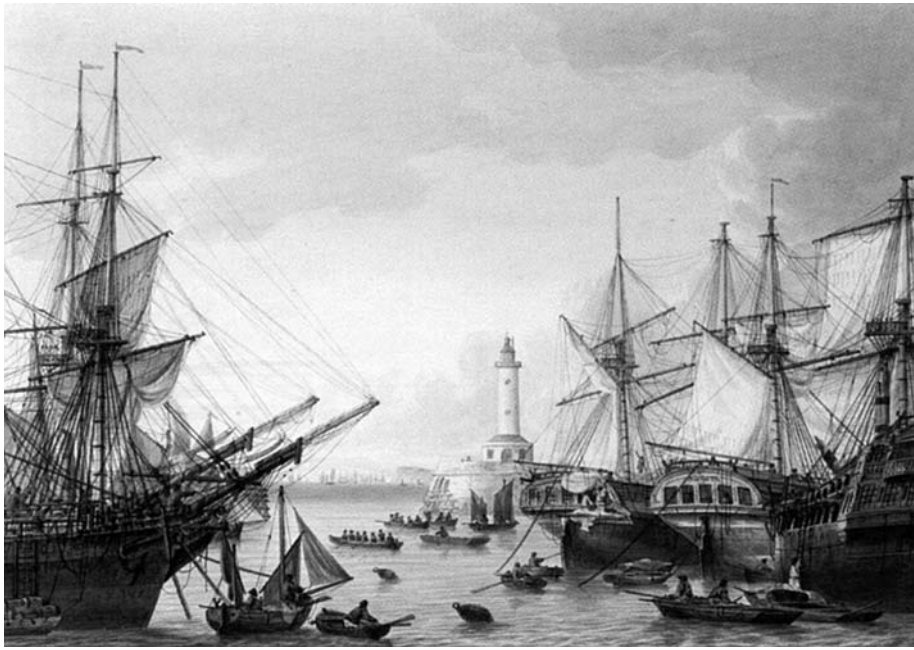
Byzantine ships continued Greco-Roman building practices, including mortise-and-tenon joinery of the planks, as evidenced by the Yassi Ada shipwreck of the seventh century CE, excavated by George Bass in the 1960s. The earliest known clinker boat, the Nydam boat (310–320 CE), is of northern European origin and is about 23 meters long with a double-ended hull, a feature that the Roman historian Tacitus mentioned as characteristic of Scandinavian boats in the late first century CE. These early Scandinavian boats were rowed rather than sailed; sails were not introduced in Scandinavia until around the seventh century CE. With the introduction of the sail the true Viking age began; Scandinavian sailors traveled throughout the North Sea and Baltic Sea and eventually ventured as far as North America and the Black Sea. The Norman invasion of England in 1066 CE, long after the Viking raids had ceased, was carried out using longboats (large oared boats) in the Scandinavian style.

Beginning during the twelfth century in the northern European towns of the Hanseatic League (a league

originally constituted of merchants of free German cities), a new kind of sailing vessel was created. The cog was a round merchant vessel with high sides, built for hauling cargo. Cogs included high structures called “castles” both fore and aft to house archers or gunners to help protect the ships from raiders. Single masted, square rigged, with a large centerline rudder in the stern, cogs required only a small crew to handle. By the twelfth century inexpensive, machine-sawn planks, made possible by the hydraulic sawmill, replaced split wood planks, and large ships that took advantage of this plentiful supply of planks appeared. Larger cogs were built with more masts, and by the 1400s clinker-plank construction gave way to edge-to-edge planking attached to internal framing.

1350–1700 CE

The Venetian galley, ranging from 39 to 50 meters long, often with two banks of oars and one mast with lateen-rigged sails, dominated the medieval Mediterranean beginning at the end of the ninth century.



Samuel Atkins (1780–1810), *Shipping In Ramsgate Harbour* (n.d.). Watercolor, brown ink, and pencil. The advent of the steamship meant the eventual demise of the sailing ship as a vehicle of trade.

By the fourteenth century Venetians began building “great galleys”—bigger, longer vessels with two masts for commercial and passenger traffic. During the sixteenth century a new Mediterranean ship emerged, the *galliass*, a huge galley designed for warfare. *Galliasses* had both oars and sails and crews of up to seven hundred. Six *galliasses* fought at the Battle of Lepanto in Greece’s Corinthian Gulf in 1571, helping to defeat the Ottoman Turkish fleet. Galleys and *galliasses* also formed part of the Spanish Armada in 1588.

The invention of the carrack during the mid-fifteenth century resulted from the combination of northern and southern shipbuilding influences. Carracks, created in the shipyards of Venice and Genoa, were large modified cogs, with three, four, or even five masts with a variety of sails, both square and lateen rigged. Multiple masts and combination rigging made carracks easy to control and faster than traditional designs. Another innovation was frame-first construction, where planks were nailed to the frame. Carracks were the largest merchant vessels of their time, hauling 362 metric tons, but by the sixteenth century they were hauling 907 metric tons. The English king, Henry VIII, beginning in 1509 built a fleet of “great ships,” including two large carracks. Both ships were heavily armed with artillery, and when the wreck of the *Mary Rose* was

discovered, two thousand arrows in neat bundles were found. Smaller and lighter than the carrack, the *caravel* also appeared during the fifteenth century, probably of Spanish or Portuguese origin. Primarily for commercial use, the *caravel* is known primarily for its use in the great exploration voyages of Christopher Columbus of Genoa, Italy, and Bartolomeo Dias and Vasco da Gama of Portugal.

Growing transatlantic trade during the sixteenth century resulted in the development of oceangoing vessels such as the galleon. Shorter than a galley, not as bulky or heavy as a carrack, the galleon had three or four masts, with both square and lateen rigging. It had high sides and castles for artillery. Large oceangoing sailing ships were also being developed in China as early as the tenth century CE. During the thirteenth century the Venetian traveler Marco Polo reported seeing four-masted merchant ships during his long stay in China. In 1973 a large thirteenth-century ship was found at Houzhou; it was about 35 meters long, with a keel and double cedar planking on the hull. Writings from the Ming dynasty (1368–1644) describe the voyages made between 1405 and 1433 by the eunuch admiral Zheng He in a fleet of nine-masted ships 120 meters long, although researchers have found no such ships. Chinese shipbuilding suddenly ended in 1550 with an imperial ban on overseas commerce.

A sailing ship is no democracy; you don't caucus a crew as to where you'll go anymore than you inquire when they'd like to shorten sail. • **Sterling Hayden (1918–1986)**

The founding of the Dutch East India Company in 1592 propelled the Dutch to the forefront of long-distance trading, eclipsing the Portuguese. The three-masted Dutch flute, a narrow merchant ship that was developed partially to avoid taxation related to the width of the vessel, remained the dominant cargo vessel into the eighteenth century and was soon being built in England, Germany, and Scandinavia. The English and French trading companies, created in response to Dutch maritime power, also owned their own fleets and militia. During the seventeenth century science entered the shipyards, particularly in France, with highly trained naval architects applying mathematics to ship design. Around 1670 the huge castles at the ship's stern began to shrink to reduce weight.

Large naval fleets came to the forefront in warfare during the seventeenth century. The capture of Gibraltar in 1704 by the British was one of the great successes of the British fleet and gave England control of access to the Mediterranean. During the eighteenth century the construction and outfitting of warships took center stage as the rivalry between European powers was waged on the seas through exploration, colonization, and naval battles. In addition to the large warships, battle frigates, adapted from lean, maneuverable commercial vessels, became an important element of the naval fleets of Britain and France.

In 1750 shipbuilders in the British colonies in North America developed an entirely new form, the schooner—a small, fast ship with only two masts that initially was used for fishing and trade. The Revolutionary War brought a military dimension to the schooner, which navies used to conduct merchant raids and run blockades. Later slave traders used schooners between Africa and the Americas, particularly after 1820, when slave trade was outlawed by many world governments. The fledgling navy of the United States began with the commissioning of six such ships in 1794, one of which, the U.S.S. *Constitution*, is still docked in Boston.

Longer masts as well as jibs (triangular sails set on a stay extending usually from the head of the

foremast) were introduced on European ships during the eighteenth century; all traces of forecastles and aftercastles disappeared; and poop decks were extended to cover the rudder and steering mechanisms, allowing the helmsman to be inside the ship. In 1760 the British introduced copper plating on the bottom planking of their ships to reduce the effects of corrosion and parasites on the hull.

The nineteenth century brought the rise of the large East Indiamen (50 meters long with a beam of 12 meters), which were built in England for cargo rather than speed—the round trip between England and China took about a year. Clipper ships appeared first in the United States in 1820 and were originally intended for the China tea and opium trade but were quickly adapted by British shipyards. One of the fastest British clippers, the *Cutty Sark*, is preserved in dry dock at Greenwich, England. Built in 1869 and famous for its speedy round-trip voyages from England to Shanghai, the *Cutty Sark* is 64 meters long and capable of sailing at 17 knots.

The Eclipse of Sail, 1850–Present

After regular transatlantic steam service began in 1838, only long-distance China trade remained open to sailing ships because steamers could not haul enough coal to make the journey to China and back. In 1869, with the opening of the Suez Canal in Egypt, steamers began to take over the China trade as well, marking the end of the dominance of sailing ships. By the dawn of the twentieth century sailing ships were used almost exclusively as training and pleasure craft, soon symbolizing luxury rather than efficiency.

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See also History, Maritime; Navigation; Piracy

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Saladin

(1137/38–1193)

MUSLIM RULER

Saladin, who ruled over Egypt, Syria, and Palestine in the late twelfth century, was revered in the Muslim Middle East for his military prowess, bravery, piety, largesse, and integrity, and he was romanticized for the same qualities in medieval literature of the Western. He remains today for Arabs a historical figure of near-mythic proportion.

Al-Malik al-Nasir Yusuf ibn Ayyub Salah al-Din (“righteousness of the faith”), or Saladin, was responsible for the near-total destruction of the Crusader Kingdom of Jerusalem; he founded the short-lived Ayyubid dynasty of Egypt and Syria, northern Iraq, and Yemen. He was widely regarded as the epitome of noble, pious, and martial virtues.

Yusuf ibn Ayyub was born in Tikrit (in present-day Iraq) to a Kurdish family in the service of the Seljuk sultanate that at that time ruled much of the region. His father entered the service of the ruler of northern Syria, ‘Imad al-Din Zangi, and was rewarded with the lordship of Baalbek in Lebanon. In the aftermath of European Christians’ failed Second Crusade (1145–1147), Zangi’s heir Nur al-Din took Damascus, fulfilling his father’s ambition to unite the three great Syrian provinces of Aleppo, Mosul, and Damascus. In the 1160s Saladin accompanied an uncle on a series of missions against Fatimid Egypt, which was regarded as a key territory for the containment of the Crusader Kingdom and which Zangi feared was becoming a Frankish protectorate. Yusuf distinguished himself in these campaigns, and on the death of his uncle in the course of the last of these missions, he managed to take control of the Syrian forces and have himself appointed as vizier to the

Fatimid caliph. Taking the honorific title al-Malik al-Nasir (“the king victorious by God”), he became de facto ruler of Egypt. Having consolidated his position in a series of military campaigns, he dissolved the Fatimid caliphate in 1171.



Saladin, King of Egypt, from a fourteenth-century manuscript in the British Library.

European merchants supply the best weaponry, contributing to their own defeat. • Saladin (c. 1137–1193)



After the Third Crusade, a new treaty granted Christian pilgrims access to Jerusalem. Here Saladin meets the Bishop of Salisbury.

These successes troubled Nur al-Din, who planned to reassert his authority over Yusuf, but died in 1174, before a mission could be launched. Over the course of the following twelve years, in a series of military and diplomatic campaigns, Saladin managed to gain control over Damascus and Aleppo and forced Mosul to submit to his authority. Thus secure and with sufficient manpower to draw on, he was able to launch a decisive campaign against the Kingdom of Jerusalem, which was suffering a period of divisiveness and disarray. After smashing the Crusader forces in a single battle at the Horns of Hattin (near Lake Tiberias) on 4 July 1187, Saladin was able to sweep the Franks from Palestine and western Syria, although his failure to take Tyre (on the coast of southern Lebanon) provided the protagonists of the Third Crusade (1189), Richard I of England and Philip II Augustus of France, with an embarkation point. The Franks captured Acre (on the coast of present-day northern Israel, about 60 kilometers south of Tyre) after a bitter two-year siege, and a new treaty granted Christian

pilgrims access to Jerusalem. Saladin died six months later in March 1193.

Saladin's success in uniting the Syrian military classes was due to a number of factors, not the least the force of his own personality: he famously exhibited Arab and Islamic virtues of military prowess, bravery, piety, largesse, and integrity. His skillful use of diplomacy with Franks, Byzantines, and Muslims allowed him to focus his energies, and his ideological program of jihad helped to galvanize popular political support in Syria and beyond. He was fortunate to be assisted by capable and trustworthy subordinates, including his prime minister and ideologue al-Qadi al-Fadil and his brother al-'Adil, who acted as governor of Egypt and who carried out the famous negotiations with Richard I. Saladin preferred to give positions of political responsibility to family members.

The same personal virtues that made Saladin attractive to the Muslim world prompted his adoption by medieval romance writers as a leading character and a paragon of infidel virtue, a paradox that literary

license rationalized variably as the result of a Christian mother, secret conversion, or other factors. In the Muslim world contemporary biographers, such as Baha' al-Din, painted a more realistic but also undoubtedly idealized portrait of Saladin as a pious yet pragmatic king and an advocate of holy war, an image that continues to resonate in the popular consciousness.

The Ayyubid dynasty that Saladin established was essentially a constellation of independent principalities governed by his kinsmen and their descendents. The most important principality was Egypt, which was ruled in turn by al-'Adil and his son al-Kamil, and which survived the thirteenth-century crusades before being supplanted by the Mamluks in 1250. The longest surviving branch of the dynasty ruled Aleppo until that city's capture by the Mongols in 1261.

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See also Crusades, The; Egypt

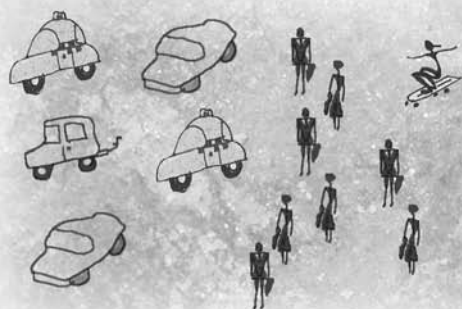
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Salinization

Salinization, the process by which salts accumulate in soil, has long been (and continues to be) one of the world's major challenges for sustaining agricultural production. In natural and managed ecosystems, salinization regulates plant and animal communities, and it determines the way in which water is circulated and distributed on and below the Earth's surface and in the atmosphere.

Salinization is a natural and human-induced process by which soluble salts accumulate in soil. Salts enter soil systems mainly when they are dissolved in groundwater or irrigation water, when they are deposited from the atmosphere, and when minerals are weathered. Salts are further concentrated as water is removed from the soil via evaporation and transpiration (the uptake of water by plants). Slow-draining clayey soils are much more susceptible to salinization than are rapid-draining sands. Salt concentrations in soils tend to increase in the direction of surface or groundwater flow, that is, from uplands to low-lying depressions or bottoms. Salinization thus affects many of the Earth's major biogeochemical cycles of chemical elements and compounds between the living and nonliving parts of the biosphere.

The predominant soil salts are chlorides and sulfates salts, which are generally balanced by sodium, calcium, magnesium, and potassium. Soils with elevated salts are known as "saline," and those with sodium-dominating salt composition are known as "sodic" or "natric." Sodium salts are particularly problematic in soils for physical, chemical, and biological reasons. Excess sodium can stress many plants, especially if calcium concentrations are low, is associated

with very high pH (above 9) and causes conditions directly injurious to plants by worsening deficiencies in nutrients such as phosphorus, copper, iron, boron, manganese, and zinc.

High sodium also adversely affects soil's physical and chemical properties, causing soil clays and organic matter to disperse into individual particles instead of remaining flocculated (i.e., attracted together in packages or aggregates of multiple particles of clay and soil organic matter). Sodium-enriched soils that are dispersed can be a near-complete barrier to water entry as dispersed clay particles block soil pores. Sodium-caused dispersion also reduces the rate of gas movement in soils. Soils that are sodium enriched readily become waterlogged and stress oxygen-demanding processes such as root and microbial activity. Only well adapted salt-tolerant plants and microbes are able to grow in salinized soils.

Plants range widely in their ability to tolerate salts in their root zone. Plants that readily accumulate or tolerate salts are called "halophytes" and include salt-tolerant grasses, herbs, and shrubs, species that are native to deserts, shorelines, and salt marshes. Most food crops are not halophytic and exhibit high sensitivity to salt, including many legumes, corn, rice, oats, and wheat. Crop plants that tolerate or benefit from halophytic properties include beets, date palms, spinach, jojoba, and barley.

Geographical Distribution of Salt-Affected Soil

Salinization occurs chiefly in arid, semiarid, and sub-humid regions. Salt-affected soils are not a widespread problem in humid regions because precipitation is

Table 1.
Distribution of Saline and Sodic Soils on Five Continents

	Saline Soils	Sodic Soils	Ratio of Sodic/Saline
	(in thousands of km ²)		
Africa	535	270	0.5
Asia	1,949	1,219	0.6
Australia	386	1,997	5.2
North America	82	96	1.2
South America	694	596	0.9

Source: Naidu, R., Sumner, M. E., & Rengasamy, P. (1995). *Australian sodic soils*. East Melbourne, Australia: CSIRO.

sufficient to dissolve and leach excess salts out of the soil into groundwater and eventually the ocean. Some saline soils occur along humid seacoasts where seawater inundates the soil.

The importance of salinization can be illustrated by the large areas soils that are enriched in salts throughout the world. (See table 1.) Fully one-quarter to one-third of the world's 1.5 billion hectares currently under cultivation are saline or sodic, a statistic that demonstrates the impact of salinization on world food production. Salinity is most problematic in cultivated soils that are irrigated. Irrigated lands with large areas of saline and sodic soils include Australia, India, Pakistan, Russia, China, the United States, the Middle East, and Europe. In some nations, salts seriously affect more than 50 percent of irrigated lands. Salinization will be a major problem for successfully doubling to tripling food production in the coming decades.

Reclamation of Saline and Sodic Soils

Salinization is an insidious problem, and early soil symptoms are often ignored. To control salinization and maintain irrigation-based agriculture over the long term requires soil analysis and careful monitoring of water and salt budgets (amounts) of local fields to river-basin scales. Such monitoring provides the technical basis for remedial action.

To diagnose soil salinity problems, soil samples are rinsed with water, and the water's electrical

conductivity is measured. The soil water's conductance is linearly related to the concentration of soluble salts. The conductance at which the growth of many plant species is diminished by salts is well established. Sodium problems are also diagnosed from the ratio of the soil sodium to calcium.

Leaching with high-quality (dilute) water can potentially rid a soil of its salinity problems, but the reclamation of sodic soils is not straightforward. Because elevated sodium tends to disperse soil clays and greatly reduce the rate at which water moves through soil, the ratio of soil sodium to calcium needs to be decreased if sodium leaching is to be effective. Calcium, especially in the form of gypsum, tends to aggregate or flocculate clays, allowing sodium to be dissolved and to leach through the soil-rooting zone. Reclamation of sodic soils may, however, require large amounts of gypsum, sometimes several thousand kilograms per hectare. Gypsum additions can be costly, especially if the only sources of irrigation water have high sodium and salinity.

Reclamation of salt-affected soils requires a suitable system of disposal. In many cases the drainage is too brackish (salty) to be directly recycled. Moreover, in contemporary agricultural systems, drainage effluents also contain other constituents such as fertilizer nutrients, sediments, and pesticides, all of which may influence disposal. Nonetheless, irrigation effluents are often simply exported to streams or rivers, a practice that salinizes and pollutes the local water supplies. Receiving streams will become progressively saltier, and lower reaches may become unfit as a water supply for humans, animals, or crops. Adverse effects on aquifers and estuaries are direct and potentially serious. Improving the efficiency of water and salt budgets of irrigated lands is one of the highest priorities for contemporary agronomy (the branch of agriculture dealing with field-crop production and soil management).

Salinization Historically

Salinization affected the first great agricultural societies such as the Sumerian and Akkadian cultures,



Salt-affected soils on rangeland in Colorado. Salts dissolved from the soil accumulate on the ground and at the base of the fence post. National Resources Conservation Service (NRCS).

societies that developed on the alluvial soils of the Tigris and Euphrates Rivers. The region was initially developed into extensive agricultural fields with irrigated grain, forage, and palm production in the southern reaches of these rivers. Complex canal systems served both for transportation and irrigation, cities were built, and civilization flourished. Over time the irrigated lands shifted significantly northward along these rivers, a pattern frequently explained by a salinity-affected decline in agriculture in the south. Archeological records of the Sumerian civilization suggest that grain production also shifted over the centuries from the -preferred but salt-sensitive wheat to salt-tolerant barley.

The history of salinization in ancient Egypt contrasts greatly with that in Mesopotamia. Salt budgets and timing of annual floods along the Egyptian terraces of the Nile are much more conducive to long-term management than terrace soils of the Tigris and Euphrates. Alluvial soils along the Nile are relatively narrow and well drained, except in the Nile's delta. The Nile's river channel tends to be deeply incised along much of its course, ensuring that the rise and fall of the river affects relatively large fluctuations of the groundwater under river terraces. The Nile's agricultural resources are generally considered to be nearly ideal, given the particular combination of high-quality water, relatively predictable flooding, soil fertility, nutrients, and organic matter. Salinization

has not developed into an acute problem along the Nile, and irrigation-based cropping has continued for about five millennia.

Salinization has stressed other agricultural civilizations in the past. One of the largest of these developed in the Indus River valley of Asia, approximately coincident in time with ancient Sumeria. The area of Indus irrigation systems apparently exceeded those in ancient Egypt and Sumer. Relatively few records exist for these Indus civilizations, although several excavations partly tell their tale (at Harappa, for example). Although archeologists suggest that catastrophic floods, earthquakes, and soil erosion wore down these ancient civilizations, salinization was also probably a major problem. In the twentieth century, salinization greatly stresses irrigation-based agriculture which has spread across nearly 15 million hectares of the Indus River valley.

Historical patterns of salinization in Australia's enormous Murray-Darling River basin are also instructive, given the ample documentation of the effects of land-use history on contemporary soils and agroecosystems. Although the basin covers about 15 percent of Australia's total area, it provides far more than this percentage of the nation's agricultural production, much of which is supported by irrigation. Since European settlement began in earnest by the mid-nineteenth century, extensive areas of deeply rooted *Eucalyptus* forests have been cut over and converted



to relatively shallow-rooted annual crop systems, an ecosystem transformation that has reduced plant transpiration (the use of water by plants) and allowed a larger fraction of annual precipitation to percolate through soil and elevate local groundwater systems. Because the underlying groundwater is saline, substantial quantities of soluble salt have been mobilized into the upper soil and root zone. Evapotranspiration (loss of water from the soil both by evaporation and transpiration from plants) concentrates salts, and about 500,000 hectares of the Murray-Darling River basin are estimated to have saline groundwater within 2 meters of the soil surface. Australians refer to these circumstances as “secondary” salinization (i.e., human affected), reserving the term *natural salinization* to describe naturally occurring saline soils that occur in association with salt lakes in drier regions of the continent or adjacent to estuaries.

Salinization in the Future

Irrigated land today totals approximately 0.3 billion hectares of the 1.5 billion hectares of total cultivated land. About 35 percent of total crop output is currently derived from irrigated systems, a percentage that is expected to increase. Between the 1960s and the late 1990s irrigated land increased at the rate of about 3 percent per year. Five nations account for about two-thirds of the irrigated area: China, India, Pakistan, Russia, and the United States. Other nations dependent on irrigated systems include Egypt, Indonesia, Iraq, Jordan, and Israel. All indications are that in the future, irrigation management of water and salts will be increasingly important because global agricultural production is so dependent upon irrigation. The challenge, however, is that contemporary management of irrigated systems is far less than optimal and in fact presents serious concerns for the future. Several examples illustrate the challenges.

The extensive modern irrigation system along the Indus River, mainly in Pakistan, is one of the major agricultural regions of the modern world. Alluvium and associated native groundwater reservoirs are deep in this great basin, which drains the western

Himalayas. Nearly 15 million hectares were under irrigation by the mid 1990s, with the length of irrigation watercourses, farm channels, and field ditches estimated to exceed 1.5 million kilometers. Early in the development of this massive system, saline groundwater tables were observed in the rooting zone of many fields, and by the 1960s a massive drainage project was launched that by the 1990s had benefited about one-third of the entire system. Currently, between 2 and 5 million hectares of irrigated fields are adversely affected by salts. Keeping this system operational will require an incredible continuity of effort, especially because the Indus drainage channels have such low elevation gradients (e.g., about a 0.02 percent gradient), which must transport water many hundreds of kilometers to the ocean outlet.

In modern Egypt the challenges of controlling salinization in irrigated agro-ecosystems have become similarly serious. From ancient times to the beginning of the nineteenth century, the human population of the Nile River valley totaled several million people, most of whom were supported by the river's irrigation-based agriculture. Through most of this past, Egypt was able to export enormous amounts of food, a situation that is no longer the case. Modern Egypt has now about 60 million inhabitants, a total that is expected to grow to 90 to 100 million by 2030. Along with rising agricultural imports, Egypt is placing enormous demands on its irrigated soils for domestic food production. The Aswan High Dam, constructed in the 1960s, established management control over the Nile's flood flows and thereby expanded opportunities for irrigation. On the other hand, with river flow controlled, the seasonality of river flow no longer regularly and flushes soils of salts. Particularly in the alluvial soils of the great Nile Delta, salts have grown to be an increasingly common problem. Future expansions of irrigation agriculture along with highly engineered drainage projects to control salts are widely contemplated.

Future problems with salinization are hardly confined to irrigated lands. Natural cycles of rainfall in arid and semiarid climates can be associated with expansion and contraction of saline and sodic soils.

The saline ecosystems of Amboseli National Park in Kenya at the foot of Mt. Kilimanjaro provide a celebrated and much debated example. From the 1950s on, the vegetation of much of the Park has markedly changed from forested savannahs with *Acacias* to a landscape more dominated by salt-tolerant grasses and shrubs with only occasional trees. A long-standing hypothesis for the ecosystem transformation has been that when regional rainfall increased through the 1960s, highly saline groundwaters rose into the root zone of *Acacia*-dominated savannas, causing widespread tree decline. Whether or not the transformation of the Amboseli is explained by salinization, the Amboseli serves as an outstanding example of how future climate change in the decades and centuries ahead may affect salt balances and salinization across wide areas and thereby the structure and function of natural ecosystems.

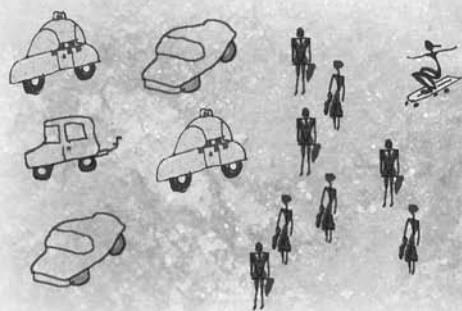
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See also Agricultural Societies; Harappan State and Indus Civilization; Water; Water Management

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Salt

Salt is an essential nutrient but harmful when consumed to excess. The abundance or lack of salt in various locations made it a valuable, traded commodity throughout history. After 1800, salt became a part of manufacturing—for alkali, aniline dyes, and rayon, for instance—and more recently for melting snow and ice. More than half of the total amount of salt produced annually is now destined for industrial use.

Salt (chemical compound NaCl) is essential for human life. The cells of our bodies exist in a bath of salty fluids, and since we excrete salt by sweating, urinating, and spitting it is necessary to take in appropriate amounts of salt to maintain a steady concentration in our bloodstreams. Since other animals share our salty bodies, a diet rich in meat supplies enough salt to replace losses, but diets that consist almost wholly of grain and other vegetable foods lack enough salt to maintain the salt balance. Resulting shortage manifests itself in a persistent craving for mineral salt, wherever it can be found.

But salt is also an addiction. People who get used to adding salt to their food soon find unsalted food flat and tasteless. This is not usually harmful since kidneys excrete excessive salt into the urine, but a lifetime of eating lots of salt can sometimes bring on dangerously high blood pressure. In practice, consuming some salt is a necessity for vegetable eaters but most of the table salt people use today and have consumed for centuries is over and above what our bodies actually require.

Salt in Early History

As long as humans lived as hunters and gatherers, the meat in their diet meant that salt intake was adequate to their bodily needs. But when settled farming villages arose in different parts of the world, beginning about 11,000 years ago, much enlarged human populations soon killed off most wild game animals within reach, so communities came to depend mainly on vegetable foods and had to find ways to supplement them with small but essential quantities of mineral salt.

Fortunately, salt is common. The oceans constitute the Earth's most obvious salt reservoir; but salt lakes, salty earth and salt springs exist in desert and some other inland locations. But from the point of view of farmers, geography played a nasty trick on them, since where rain fell regularly and crops grew best, salt was thoroughly leached from surface soils, and carried off to the sea in streams. So in well-watered landscapes local salt supplies were hard or impossible to find.

Just how local populations coped with this problem in Neolithic times is completely unknown, and written records surviving from early civilizations have nothing to say about salt either. But we do know that durable precious objects like gems, shells, flint and obsidian traveled across hundreds of miles in Neolithic times and when the domestication of donkeys permitted caravan trade to get organized, beginning perhaps about 5000 BCE, the radius and regularity of overland trade exchanges increased. So there is every reason to believe that salt and other consumables, like mood-altering drugs, were also



Eugène-Alexis Girardet (1853–1907), *Salt Caravans in the Desert* (n.d.). Oil on canvas.

exchanged across long distances from the time farming populations first began to feel the craving for supplies of mineral salt.

In Southwest Asia, where wheat and barley farming originated, the closest and richest source of mineral salt was the Dead Sea shore, and it is probably not an accident that Jericho, situated on the Jordan River, and controlling the best route to the Dead Sea, is the earliest fortified site archaeologists have discovered. Dues in kind collected from travelers passing through on their way to gather salt from the shore of the Dead Sea may well have enriched Jericho's rulers and done much to sustain the stronghold they built about 8000 BCE.

Nothing comparably suggestive about long-distance salt trade is known about other early centers of agriculture. But millet farmers in China and Africa, root and rice farmers in Southeast Asia, corn, squash and bean farmers in Mexico, potato and quinoa farmers in Peru all needed mineral salt to supplement their diets as much or more than the wheat and barley farmers of Southwest Asia did. That is because the Southwest Asian cereal farmers acquired a more diversified array of domesticated animals than others, and so had more meat as well as better transport at their disposal.

When what we call civilization brought states and cities and radical differentiation among occupational specialists into being, beginning about 3500 BCE, the salt trade surely grew, if only because larger human

populations continued to depend on the crops village farmers produced. But for a long time there is little or no written or archaeological evidence of salt transport and trade that anyone can point to.

Yet we can surmise that where concentrations of mineral salt were not available on land surfaces, people soon learned how to tap the vast stores of salt dissolved in seas and oceans. That required artificial arrangements to construct shallow ponds of seawater, and then allow the sun's heat to evaporate the water until the salt became too concentrated to remain dissolved. It was not hard to discover this technique, since salt is deposited naturally on the seashore wherever natural pools evaporate in summer time. Artificial pond building and tending was therefore probably invented many times over along suitably warm and dry coastlines. Mediterranean and Indian Ocean coasts were especially well suited to salt production, and we can assume that as the technique became familiar, adequate sources of salt for needy farmers were in fact created by deliberate action. After all, it only needed patience to produce mineral salt dependably once picks and shovels had shaped a suitably shallow pond and closed off its inlet.

Salt as a Trading Commodity

Around the shores of the Mediterranean, the practice of evaporating sea salt probably established itself with



the spread of agriculture itself. Later, when farming also established itself further north in Europe, where climate was wetter and evaporation slower, it was too cool and it rained too much to allow reliable salt production through evaporation. Instead, first peddlers then ships began to carry Mediterranean salt to the northlands. Records of the salt trade begin to appear in medieval times. By then northerners depended for most of their salt on imports from Mediterranean salt pans.

We know far less about salt production along the coasts of the Indian and Pacific oceans. Still it is very likely that the practice of sea water evaporation spread very widely there within climatic limits, and supplied inland farmers with the salt they needed either through peddling, or by moving it cross-country through systems of reciprocal gift-giving among neighboring farmers. In the Americas an organized salt trade existed among Mayans and Aztecs and salt was also used in religious rituals. But nothing is known of how ordinary farmers got salt. Both Mexico and Peru had dry areas where salt existed on the surface for the taking and evaporating seawater was perhaps unnecessary. In Africa, too, inland salt abounded, and Roman records show that distributing salt mined from surface deposits in the Sahara desert became an important source of wealth for West African rulers when camel caravans began to carry it both north and south of the Sahara after about 300 CE.

In general, then, early farmers were able to get hold of the small amounts of mineral salt they needed to maintain the necessary saltiness of their bodily fluids. The salt they consumed came from multiple, sometimes local, sometimes distant sources, and left next to no trace in archaeological or written records. Distributing the small quantities of salt everyone needed required no special effort or organization; and large-scale transport of salt by ship or caravan remained exceptional.

This began to change in China under the Han dynasty when Emperor Wudi, in 119 CE, sought to repair his imperial finances by monopolizing salt and iron, in order to sell these essential commodities to his subjects at artificially high prices. This appears to be the first time a powerful government embraced

the idea of taxing salt, and it was not in fact very successful, since the Chinese bureaucracy was not actually able to control salt distribution from the multiple sources along the coast and inlands well. Yet the idea of taxing salt was too enticing to give up since it was something everyone needed and, if government officials could successfully monopolize supplies, both rich and poor were ready to pay a lot for it.

When the technology of salt production in China shifted toward underground mining, effectual monopolization became more nearly practicable. A critical breakthrough occurred under the Tang dynasty when, about 780 CE, new taxes on salt were dedicated to maintaining the canal and transport system that linked the Yangzi (Chang) with the Huang (Yellow) River, thus supplying the imperial capital with food and other resources from the south in far greater quantity than before.

Increasingly efficient and productive underground mining of salt in the inland province of Szechwan was what made it possible to tax salt so heavily as to make it a major source of imperial finance. Techniques were complex and expensive to install. Consequently producing salt from underground became easy to monopolize. What happened was this: Chinese engineers learnt how to exploit underground salt beds in Szechwan by drilling wells, pouring water into them to dissolve the salt and then pumping saturated brine back to the surface. They then passed the brine through a succession of evaporation vats, precipitating mineral salt of varying qualities quicker and in larger quantities than sea water (with only about 3 percent of its weight consisting of salt) could possibly supply. The salt administration under the Tang and later dynasties became extraordinarily sophisticated, controlling the manufacture, distribution, and sale of salt throughout China, and lowering prices in regions close to the coast so as to compete with illegally manufactured sea salt, which the government was never able to eliminate completely.

Salt manufacture and distribution thus became a major source of tax income for the Chinese government and helped to sustain China's political cohesion across subsequent centuries. The scale and technical efficiency of salt mining in Szechwan was unmatched



elsewhere. Indeed it should be recognized as the largest industrial complex on Earth before steam engines permitted the rise of Manchester and Birmingham in England after 1780.

Indian and European governments imitated the Chinese in trying to tax salt, but wherever numerous, small-scale salt evaporation sites existed along the seacoast, government monopolies were hard to enforce, and salt taxes remained both unpopular and marginal. But in central Europe, in and around Salzburg, Austria, underground salt beds existed near the surface, and the Hapsburg monarchy (1273–1918) grew great very largely on the strength of income from taxes on salt, produced, as in China, from underground. The French monarchy tried to do likewise, but since the French coastline abounded in privately managed salt pans, efforts to impose monopoly prices met with indifferent success since even in inland provinces, where the salt tax was most vigorously enforced, smuggling untaxed salt could not be prevented. Everywhere the salt tax remained unpopular, and when the French revolution broke out in 1789 the National Assembly abolished the tax.

Further east, near Cracow in Poland, beds of unusually pure underground salt also existed, and the soil on top of it was so dry that salt could be mined by using picks and shovels, leaving extensive underground caverns behind. Today these caverns run for miles a few yards beneath the surface. Salt merchants from Venice discovered (or perhaps enlarged and reorganized) these mines in the fourteenth century. The salt trade had been important for Venetians from the time of the city's foundation in the sixth century, since the climate along the adjacent coast of the Adriatic was especially dry and well suited to the Mediterranean style of salt-making by evaporation. Venetians (in competition with other Mediterranean seafarers) had supplied salt to northern Europe for centuries; and the expansion of salt production in Poland did not disrupt Mediterranean salt-making and export to the north.

All the same it is likely, though not sure, that Polish salt mines lowered prices and increased the quantity of salt available along the Baltic coast and in Holland.

Only careful study of salt prices could tell for sure what happened; but there is reason to believe that more and cheaper salt began to flow across the Baltic in the fourteenth century since that was when European fishermen began to sail further and further into the Atlantic, preserving their catch by covering the fish with salt and storing them in barrels for days or weeks until they returned home and took their catch ashore. Very likely the Polish government, unlike their Hapsburg neighbor, was too weak to monopolize mined salt, so market prices prevailed. If so, that meant lower prices, since mining Polish salt was comparatively simple, quantities were easy to increase, and shipping down the Vistula was inexpensive. All we know for sure is that after about the mid-fourteenth century, salt, cheap enough for fishermen to buy and use in large quantities, became available along the Baltic, North Sea, and Atlantic coasts as never before. Some came from Poland, some from old-fashioned Mediterranean salt pans, which could expand production almost as easily as the Polish miners by building more evaporation ponds. Dutch (and other) ships, carrying salt to and fro, kept market prices low for them both.

Historical Implications

This was important for world history, and goes far to explain why European instead of Japanese seamen discovered America. For, even though fishermen do not usually tell where fishing is best, there is good reason to believe that exploration of the breadth of the Atlantic carried European fishermen to the Grand Banks and the shores of Newfoundland some decades before Columbus made his famous voyage. And it is certain that their voyaging, together with what the Portuguese did to explore the coast of Africa, accumulated knowledge of winds and currents and other skills needed for the trans-oceanic voyaging that European navigators achieved so spectacularly between 1492 and 1522.

Nothing similar happened in the North Pacific where Japanese fishermen had boats just as good as what Europeans had, but lacked large amounts of

Let there be work, bread, water and salt for all. • Nelson Mandela (b. 1918)

cheap salt, so stayed close to shore where they could get their catch to market within a day or two. Once out of water, fish rot quickly, so catching them across an ocean from where they were sold, as Europeans began to do after about 1450, made no sense without cheap and abundant salt to preserve the catch. Japanese fishermen therefore lost the chance of harvesting salmon and other fish in American coastal waters, and, of course, did not discover America either.

One may therefore argue that Europe's expanding salt supply, by permitting deep sea fishing to flourish as never before, tipped world history toward transoceanic navigation and settlement—an achievement that dominated human history for the next five hundred years by profoundly reshaping global demography, economics and politics. If so, this surely counts as the biggest impact salt ever had on human affairs.

After about 1800, official salt monopolies and systems of taxation built upon them weakened or disappeared, not just in revolutionary France, but in other European countries and in Asia as well. In India, for example, British efforts to maintain salt taxes were never very successful and by the 1930s protest against the salt tax became one of Mohandas Gandhi's ways of mobilizing popular opinion against the Raj, when he went to jail for personally making untaxed sea salt. Even in China the salt administration suffered serious disruption when a long series of rebellions broke out, beginning in 1774 and climaxing with the Taiping convulsion of 1850–1964.

Wherever cheaper and more abundant salt became available, whether from breakdown of tax monopolies or through improved methods of production and distribution, it could be used to preserve meat and other foods as well as fish. This added a good deal to human food supplies in many parts of the world. In the Polish and German part of Europe this was particularly evident, beginning as early as the fourteenth century, for, in addition to salted ham and sausages,

sauerkraut, made by salting cabbages, provided a very valuable source of vitamins otherwise seriously lacking from their winter diets.

Eventually, beginning about 1800, all the age-old uses of salt for human consumption and food preservation were eclipsed, at least in scale, when chemists learned how to use salt in various industrial processes. It became an ingredient for manufacturing such diverse items as alkali, aniline dyes, rayon and innumerable other new chemicals. A still more recent use for salt is for melting snow and ice from roads in winter. As a result, more than half of the total amount of salt produced annually at the close of the second millennium—something like 225 million tons—was destined for industrial uses. And, strange to say, taxing cheap and abundant salt no longer attracts much attention from the world's governments.

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See also Oceans and Seas

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Sasanian Empire

The Sasanians, or Sasanids (224–641 CE) were responsible for creating an important empire that included the Plateau of Iran, parts of Central Africa, Arabia, and Mesopotamia. Their artistic talent and cultural creativity influenced their neighbors, and their history remained a reference point for the later Islamic dynasties that arose in the same area.

During the height of Sasanian power in the seventh century the empire controlled Anatolia (peninsular Turkey), Syria, Palestine, and Egypt, as well as parts of Iran, Central Africa, Arabia, and Mesopotamia. The Sasanians were an important part of the Silk Roads economy, which controlled the sale of silk and other luxury goods in Eurasia, and they produced the most recognized monetary system, specifically the coinage known as the silver *drahm*.

Rise of Ardashir I

The Sasanians rose up from the province of Persis (present-day Fars, in southwestern Iran), where Persian customs had remained constant and a historical memory of the past prevailed. Ardashir I (reigned 224–240 CE) was the son of a priest who served at the fire temple of the goddess Anahita in the city of Istakhr. Ardashir was able to conquer the province in the first decade of the third century CE while the nominal ruler of the area, the Parthian king of kings Artabanus VI, was busy with the Romans and fighting off contenders to the throne. By the time Artabanus VI was able to pay attention to the Persian upstart, Ardashir had gathered a large force, composed mainly

of the Persian nobility. Ardashir defeated Artabanus VI in 224 and crowned himself king of kings. His coins and inscriptions call him “Ardashir, King of Kings of Iran, who is from the race of gods.” It was the first time that the name “Iran” was used to designate the Plateau of Iran as such.

Shapur I and the Prophet Mani

Ardashir’s son, Shapur I (reigned 240–270 CE), had many military successes. He was able to kill one Roman emperor (Gordian), imprison another (Valerian), and make the third a tributary (Philip the Arab). His armies captured many Roman and Germanic (Gothic) soldiers, who were placed in royal cities as engineers, craftsmen, and laborers. This Roman influence is clearly seen in the city of Bishapur in the province of Persis. Shapur I left several long inscriptions and rock reliefs attesting to his grandeur and power as the king of kings of not only Iran, but also of what he called non-Iran. This means that there was a clear notion of what lands were considered Iran and what parts of the Sasanian Empire comprised lands beyond Iran.

During Shapur’s reign the prophet Mani (c. 216–c. 274 CE) appeared in Mesopotamia. He was from a Parthian noble family that professed a syncretic, Gnostic religion that combined elements of Zoroastrianism, Buddhism, Hinduism, and Christianity. Central to Mani’s religion were the two principles of light and darkness. The realm of light was the spiritual realm, while the realm of darkness was the realm of flesh. The history of the world was divided into three eras: the first era, in which the two principles were separate; the second era, in which the principles were



*Bahram and the Indian Princess in the Black Pavilion, a miniature gouache (16th c.), based on a story about the Sasanid king Bahram V as told in the *Khamse* (quintet of poems) written in the twelfth century by Nezami.*

mixed because the realm of darkness attacked the realm of light and entrapped light particles; and the third era, when the ideal state of separation returned the realm of darkness was ultimately destroyed. This

religion, known as Manichaeism, became quite popular with the traders and businessmen; consequently it spread along the Silk Roads. Shapur I, although a Zoroastrian, allowed Mani to profess his religion freely throughout the empire, which made the Zoroastrian priests resentful. After Shapur's death, the priests contrived to have Mani arrested and then killed. Mani's followers were dispersed and fled to Central Africa and China.

Zoroastrianism in the Sasanian Period

Zoroastrianism, the religion professed by the Sasanians, was the official religion of the empire from the third century. Although other Zoroastrian deities such as Mithra and Anahita were also worshipped, and in fact the Sasanians were the caretakers of Anahita's fire temple, in their inscriptions the Sasanians describe themselves as "Mazda worshipping." That means that Ahura Mazda (Middle Persian *Ohrmazd*) was the supreme deity. The society was stratified according to the Avesta, the Zoroastrian scriptures, and three major fire temples were established: the Adur Farranbag fire temple for priests, the Adur Gushnasp fire temple for warriors, and the Adur Burzenmihir fire temple for farmers and husbandmen. A host of smaller fire temples were also established throughout the empire where the teacher priests uttered the sacred words and formulas and performed the necessary rituals.

There are two priests from the third century mentioned as the architects of the Zoroastrian state religion and the builders of the Zoroastrian hierarchy. The first is Tosar (or Tansar), who is said to have collected all the traditions relating to the Avesta and compiled an authoritative version during the time of Ardashir I. The next pivotal figure in the history of Zoroastrianism was Kerdīr, who surveyed the empire, established the version of Zoroastrian religion which he saw fit, and spread those doctrines. He honored the priests who followed his teachings and punished those who opposed him. Kerdīr mentions



that he persecuted other religious groups within the empire, namely the Christians, Mandeans, Buddhists, Hindus, and Manichaeans. It was he who instigated the arrest and execution of Mani. He also established many fire temples, and his followers believed that he made a journey to the nether world to find out about heaven and hell and how to end up in one and avoid falling into the other. Kerdir lived through the reign of several Sasanian kings and he rose to absolute power in the second half of the third century.

Fourth and Fifth Centuries: War and Revolution

In the early fourth century the wars with the Romans was disastrous for the Persians. King Narses (reigned 293–302 CE) lost several major battles—and his entire harem—to the Romans and was forced to pay a heavy ransom for the harem's release. In religious matters, however, it appears that Narses was able to reduce the power of Kerdir and the priests and give special importance to the goddess Anahita again. Later in the fourth century Shapur II (309–379 CE) avenged the losses of Narses and was able to defeat the Romans. He also was able to defeat the Arab tribes who had attacked and ravaged the southeastern provinces of the empire, which explains his title in the Islamic literature, “piercer of shoulders” (Arabic *dul al-aktaf*).

In the fifth century, during the reign of Yazdegerd I (reigned 339–420 CE), the patriarch of the Nestorian (Christian) Persian Church was established at the Sasanian capital, Ctesiphon. Yazdegerd I also married the daughter of the chief rabbi in the Sasanian Empire, from whom the next king of kings, Bahram IV (reigned 388–399 CE) was born. These actions brought a sense that the empire belonged to citizens of all religions: as long as they paid their taxes, they were part of the empire.

It was also in the fifth century that the Hephthalites attacked from the east. The Sasanians had to fight the Arabs and the Romans on the southwestern and

western front. By the end of the fifth and early in the sixth century, under the rule of Kavadh I (reigned 488–496 CE; 499–531 CE), the society went through a revolution. Using a novel interpretation of the Avesta, the magi (priest) Mazdak helped king Kavadh to reduce the power of the landed nobility, who exerted a lot of influence and were immune from paying taxes. Their lands were redistributed among the people, and new small-landed gentry became the backbone of the state. The power of the clergy, who had supported the earlier status quo, was also reduced.

Khosrow I and His Reforms

Kavadh's son Khosrow I (reigned 531–579 CE) came to the throne after defeating his brother. His first action was to make peace with the Romans and secure the borders of the empire. He then began the capture and persecution of Mazdak and his followers. Once the king had been able to reduce the power of the clergy and the nobility, they again began to bring the empire back to order. Khosrow I, however, did not restore any land to the nobility, but rather made the smaller landowning gentry the backbone of the society and tax infrastructure. Khosrow I surveyed the land and created a new tax system that taxed not only the land but also its produce, to be paid in three installments annually. He also divided the empire into four cantons, one the northeast, one in the southeast, one in the southwest, and one in the northwest. The military was also divided into four sections, one to take charge of the defense of each canton. This was in an attempt to combat the invasions that came from all directions.

Religiously, the Avesta and its commentary (the Zand) were placed under the direction of trusted magis whose interpretation was accepted by the king. The Avesta was written down in its final version, along with its interpretation. The royal chronicle that described the history of Iran, known as the *Khudy-nmag* (Book of Kings) was also written during Khosrow's rule. Khosrow encouraged intellectual inquiry, inviting philosophers from the Byzantine Empire to come

to Persia, where they wrote works on Aristotelian philosophy and other sciences for the Persian king. Khosrow also sent to India for books on astronomy, logic, and wisdom literature. Khosrow's minister, Wuzurgmihr, was renowned for his wisdom even in the post-Sasanian (Islamic) period. Such games as chess and backgammon were also introduced to Iran from India at this time. The game of polo was already a kingly sport and played at the time of Khosrow I. Khosrow's court was also known for its opulence: his crown was so big and heavy that it had to be suspended from the ceiling.

Sixth and Seventh Centuries: Iran

Khosrow II (reigned 590–628 CE), a vigorous ruler, oversaw the conquest of Egypt and the siege of Constantinople, but the Byzantine emperor Heraclius was able to strike back and defeat the Persians. The riches and the opulence of Khosrow II's court and palaces became legendary in the later Islamic period. His love for an Armenian wife of his, Shirin, was recorded in romances and epics, as was the beauty of his horse, Shabdiz. During his rule performers and musicians gained fame, especially the composer-performer Barbad and the female singer Nakisa. The artistic expression of the late Sasanian period is captured in the monuments at Taq-e Bistan and also at Bisitun, where there appears to have been a plan to carve a monumental rock-relief that was never finished.

After Khosrow II, his sons, grandson, and daughters came to the throne. Queen Boran (reigned 630–631 CE) is known to have tried to revive the memory of her father and to bring order to the chaotic empire after his death. Queen Azarmiduxt, the sister of Boran, ruled for a short time as well. Their reigns attest to the fact that women were allowed to rule the Sasanian Empire. A series of distant relatives then competed for the throne, ending with the accession of Yazdegerd III (reigned 632–651 CE), the last Sasanian king. By then the Arab Muslim armies were on the march; they defeated the Sasanians in three major battles. Yazdegerd III attempted to gather forces to

fight the invaders, but he was murdered in Khorasan by a local governor who did not want to support the wandering king. His sons and daughters fled to China seeking help. Even his grandson in the eighth century was hoping for the recapture of Iran, but by then the world of Iran had changed and a new dominant force, the Marwanids, were in power.

Sasanian Legacy in World History

Many Sasanian customs were passed on to the Islamic world, including games such as polo, chess, and backgammon. Wisdom texts from India and Iran and manuals on how to rule and manners of conduct were translated from Middle Persian into Arabic. Iranian administrative practices became the dominant feature of the Islamic administrative system, and the Sasanian silver coinage became the model of Islamic coinage. In the ninth century, with the breakup of the Islamic Abbasid power, claims to Sasanian heritage became a main component of the ideologies of the local dynasties that vied for power on the Plateau of Iran. This fact suggests the enduring power and importance of the Sasanians in the memory of the people of Iran and neighboring lands.

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See also Manichaeism; Persian Empire; Silk Roads; Zoroastrianism

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Science—Overview

Like all effective knowledge systems, science is based on induction: careful empirical observation followed by attempts to generalize. Like all knowledge systems, it is subject to falsification, to the sudden appearance of new realities, or to new forms of information that may overturn established certainties. What distinguishes modern science from earlier knowledge systems is the size of the intellectual arena within which its ideas are generated and tested.

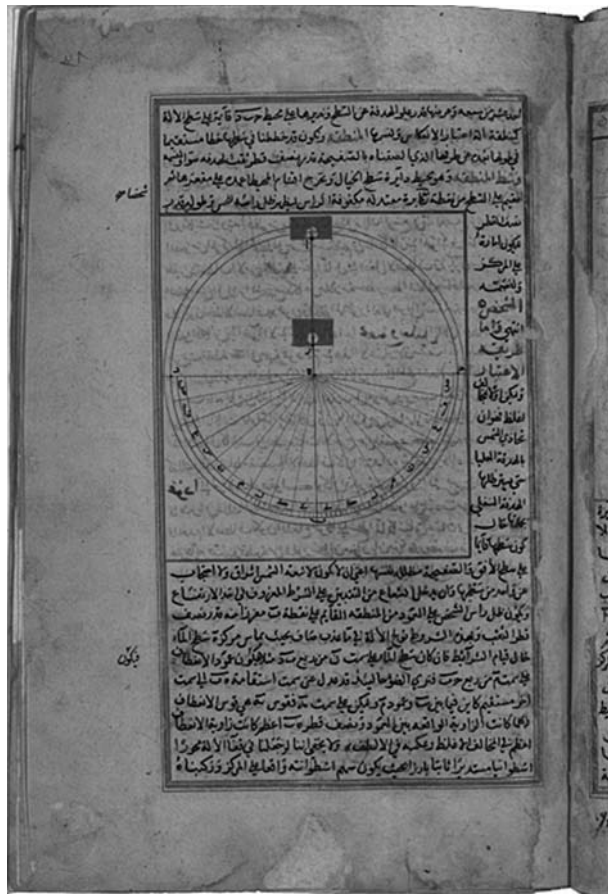
The English word *science* derives from the Latin *scire*, “to know.” In many languages, the word *science* or its equivalents can be used broadly to mean “a systematic body of knowledge that guides our relations with the world.” This is the sense that is present in phrases such as “the social sciences.” There have existed many different knowledge systems of this type. All animals with brains have, and make use of, structured knowledge of the external world, so in principle we could claim that even animals depend on some form of science.

Used in a narrower sense, the word *science* refers to the distinctive body of systematic knowledge about the material world that emerged in Europe within the last five hundred years and that underpinned the technological achievements of modern societies. Many societies have had complex technologies, and many have had rich and rigorous systems of religious and philosophical thought, but what is distinctive about modern science is that its theories have been used to generate extraordinarily powerful and effective technologies. As a recent study puts it, “Modern science is not just a thought-construction among others—it entails both an intellectual and an operative mastery

of nature. Whereas empirical technology is a feature of every major civilization, the systematic application of scientific insights to change our natural environment (‘to conquer Nature by obeying her’, as Francis Bacon phrased it) is a creation of Europe alone” (Cohen 1994, 4). Conceived in this sense, science is a distinctively modern way of understanding the world. So, to understand the modern world, we have to understand science.

The idea of a “scientific revolution”—a fundamental transformation in ways of thinking about the world—is central to this view of the role of science in world history. Though it is generally accepted that the roots of modern science can be traced to classical Greece and Mesopotamia (although anticipations of modern scientific thought can be found in many different societies, from China to Mesoamerica, and even in some aspects of Paleolithic thought), it is widely assumed that modern science appeared during the scientific revolution of the sixteenth and seventeenth centuries, and its appearance marked a fundamental intellectual shift. As one survey puts it, “The Scientific Revolution represents a turning point in world history. By 1700 European scientists had overthrown the science and worldviews of Aristotle and Ptolemy. Europeans in 1700—and everyone else not long afterwards—lived in a vastly different intellectual world than that experienced by their predecessors in, say, 1500” (McClellan and Dorn 1999, 203). Over the next few centuries that revolution transformed human attitudes and human relations with the material world.

But the notion of science as a revolutionary new form of knowledge raises some complex problems. Was modern science really that different from earlier



A page from a noteworthy treatise on optics, written under the Ottoman sultan Murat II (reigned 1512–1520), begins with the basics (direct vision, reflection and refraction, and the length of shadows).

systems of knowledge? Why has it given modern societies such astonishing leverage over the material world? And is it really true, as some have claimed, that modern science offers a fundamentally superior way of describing reality?

What Is Different about Modern Science?

Answering these questions is not easy. It has proved particularly difficult to show that science offers a more accurate description of the world than earlier systems of knowledge.

Some of the earliest attempts to explain the efficacy of modern science claimed that its defining feature was careful, objective observation of the material world. Whereas most earlier systems of thought relied heavily on religious revelation or on the traditional

authority of earlier writers and thinkers, so these claims go, scientists tried to put aside all preconceived notions and observe the world directly and without bias. To ensure the objectivity and precision of their observations, they devised rigorous and sometimes complex experimental methods. Then, using the results of their observations, they came up with general hypotheses about the nature of reality, using the logical method of induction.

In this view, scientific theories work because they are based on meticulous observation and rigorous logic, which explains why they offer exceptionally accurate and useful descriptions of the world. Galileo Galilei (1564–1642) is often thought to have exemplified the new experimental methods in his observations of the sun and planets through the recently invented telescope and in his experiments rolling balls down sloping planes to study the effects of gravity, while the achievement of Isaac Newton (1642–1727) in formulating general laws of motion is often taken as a paradigm example of the possibilities for radical generalization on the basis of information derived from careful observation. The seventeenth-century English natural philosopher (the contemporary term; now we would say *scientist*) Francis Bacon (1561–1626) was probably the first to describe the method of induction systematically, but similar arguments about the nature of modern science are still widely held today. Here, for example, is a modern definition of how science works: “Scientists propose theories and assess those theories in the light of observational and experimental evidence; what distinguishes science is the careful and systematic way in which its claims are based on evidence” (Worrall 1998, 573).

There is much truth in the inductivist view of modern science. Though examples of careful, empirical observation can be found in all human societies, never before had so many scientific observations been conducted so systematically and with such care and precision, and never before had natural philosophers tried so rigorously to build from them universal theories about the nature of reality. Unfortunately, though, the method of induction cannot guarantee the truth

In questions of science, the authority of a thousand is not worth that humble reasoning of a single individual. • **Galileo Galilei (1564–1642)**

of scientific theories. In the first place, it is now clear that our minds shape and reorganize information as they receive it; so we can never separate observation from theorization in the neat way presupposed in the simplest models of inductive logic.

But the most fundamental problem is logical. Induction leads us from particular observations about the world to general theories about the world. Yet no observations can embrace all of reality, so induction involves a leap of faith that the small sample of reality that we can observe directly is characteristic of the whole of reality. Though it makes sense to rely on theories based on a large body of empirical evidence, induction can never yield conclusions whose truth is certain. (Bertrand Russell's famous example was the inductivist turkey, who observed carefully how, each day, her bipedal servants provided food at a particular time; unfortunately, in mid-December, just as the turkey was about to formulate the general hypothesis that food would always appear at the same time, her servants killed her and cooked her for Christmas.) As a result, conclusions based on induction are always subject to modifications, sometimes of the most fundamental kind, as new observations become available. Thus, by carefully observing the position and motion of distant galaxies, using work on variable stars by Henrietta Leavitt (1868–1921), Edwin Hubble (1889–1953) showed that the universe, far from being stable and eternal, is in fact expanding.

Early in the twentieth century, the British-Austrian philosopher Karl Popper (1902–1994) proposed what he hoped was a more reliable apology for science. He argued that science advances through a process of “falsification.” As he pointed out, even if it is impossible to prove the truth of any theory reached by induction, it *is* possible to prove that some theories are wrong. So Popper argued that science should be trusted not because its conclusions are true in any absolute sense, but because it consisted of theories that had been tested rigorously and had not yet been proved wrong. The best known example of a falsifiable idea is perhaps the claim put forward by Albert Einstein (1879–1955) that gravity affected light, a claim he suggested could be tested by seeing if the

light from distant stars was bent as it passed behind the sun. The claim was successfully tested in 1919 during a solar eclipse, but what interested Popper was that Einstein's claim was risky: it could have been proved false. Popper argued that ideologies such as Marxism and disciplines such as history did not count as sciences because they did not generate hypotheses that were precise enough to be falsified. Marxism was simply too rubbery: when it was pointed out that the socialist revolution predicted by Marx had failed to materialize, Marxists simply shifted their ground and changed the anticipated date of the revolution.

Unfortunately, even Popper's attempts to distinguish science from other forms of knowledge were shown to be inadequate as historians of science became aware of the extent to which scientists, too, could cling to outdated theories or tweak their theories to avoid falsification. Despairing of finding any decisive proof of the truth of scientific theories, some philosophers of science gave up. The historian Thomas Kuhn (1922–1996), impressed by the subjectivity and partisanship of real science, argued that the main defining feature of modern science was simply that scientists within each scientific discipline seemed to agree about the discipline's core ideas. Sciences, he argued, were organized around paradigms, or core ideas, such as Newton's laws of motion, or the theory of natural selection. Once firmly established these were rarely subjected to the rigorous testing procedures Popper had taken for granted; on the contrary, there was a powerful element of faith in the work of most scientists most of the time. Paradoxically, Kuhn argued that it was this faith in a core idea that explained the effectiveness of scientific research. Unlike historians, who cannot agree about the fundamental laws by which their discipline works, scientists commit to a certain body of theory and this, he argued, explains why they conduct research in a more coordinated and more effective way than historians. For example, biologists, working within the paradigm of natural selection, know that any observation appearing to threaten the fundamental principle of natural selection is important, so such problems attract many researchers, and eventually

their work can lead to new insights that usually support the core paradigm.

But not always. In extreme cases, he conceded, the accumulation of new data and new ideas may lead to the overthrow of an existing paradigm. In the late nineteenth century, most physicists assumed the existence of “ether,” a universal medium within which all physical processes took place. Unfortunately, experiments on the speed of light by the U.S. researchers Albert Michelson (1852–1931) and Edward Morley (1838–1923), seemed to show that the ether did not exist—the speed of light was uniform in all directions, whereas the existence of an ether ought to have slowed light beams traveling against the ether’s flow. It was these anomalies that led Einstein to suggest that the Newtonian paradigm had to be revised. So Kuhn distinguished between normal science, the slow, sometimes plodding process by which scientists flesh out the implications of a well-established paradigm, and scientific revolutions, or periods when an established paradigm breaks down and is replaced with a new one.

Though Kuhn’s ideas may have offered a more realistic portrayal of how science actually works, they provided weak support for its truth claims and failed to account for its explanatory power, for it was easy to point to other knowledge systems, including most forms of religion, in which there existed a core body of ideas that were taken on trust but were sometimes violently overthrown. To some, it began to seem that all we could say about science was that it was better at solving the sorts of problems that need to be solved in modern societies. Instrumentalist theories of science argue that it does not really matter whether or not scientific theories are true—all that matters is whether they work. Science is best thought of not as a more or less accurate description of reality, but rather as a tool—the mental equivalent of a stone axe or a computer. Or, to adopt a more precise analogy, it is like a map of reality. As Michael Polanyi has written: “all theory may be regarded as a kind of map extended over space and time.” Similarly, Thomas Kuhn has argued that scientific theory “provides a map whose details are elucidated by mature scientific

research. And since nature is too complex and varied to be explored at random, that map is as essential as observation and experiment to science’s continuing development” (Kuhn 1970, 109). Like all knowledge systems, science offers simplified and partial maps of some aspects of the real world. But it is *not* the same as reality.

A last-ditch attempt to preserve the idea that science *can* provide an accurate account of reality is the delightful no-miracles argument advanced by the philosopher Hilary Putnam (b. 1926). Putnam argued that if a theory works, then the simplest explanation of that fact is to assume that the theory provides a good description of the real world. On this argument, it is the success of modern science that justifies its claims to provide accurate descriptions of reality. As Putnam puts it, “The positive argument for realism [the doctrine that science provides an accurate description of the real world] is that it is the only philosophy that does not make the success of science a miracle” (Psillos 1999, 71).

The apparent impossibility of finding any rigorous way of defining what is distinctive about modern science suggests that science may not be as different from other systematic forms of knowledge as is often supposed. All knowledge systems, even those of animals, offer maps of reality that provide more or less accurate guides to material reality. Perhaps, as the historian Steven Shapin has argued, the scientific revolution does not mark as clear an epistemological break as was once assumed. Most seventeenth-century scientists were well aware of the continuities between their ideas and those of the medieval and ancient worlds. Indeed, Newton, like many other scientists of his epoch, continued to study alchemy even as he was laying the foundations of what many think of today as true science. Even the notion of a scientific revolution is a modern idea; the phrase was first coined in 1939, by the philosophical historian Alexandre Koyré (1892–1964).

Developments in the twentieth century have done even more to blur the distinction between modern science and other systematic forms of knowledge. Quantum physics and chaos theory have shown that



Sculpture depicting an early Chinese invention, the magnetic compass. The spoon-shaped needle (lodestone) is made from magnetic oxides. Anticipations of modern scientific thought can be found in many ancient societies, from China to Mesoamerica.

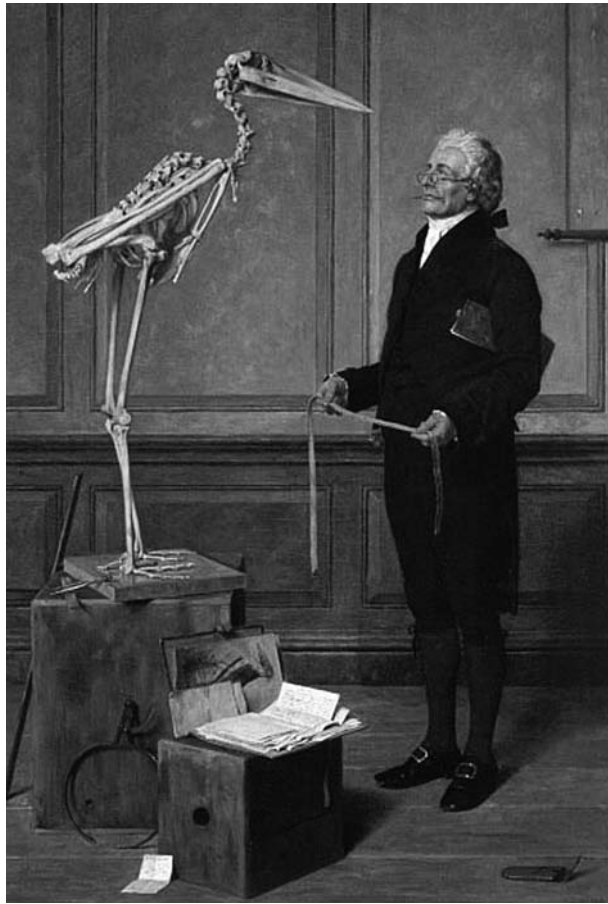
reality itself is fuzzier than was once supposed, a conclusion that has forced scientists to abandon the nineteenth-century hope of attaining a mechanically perfect description of reality. As a result, the differences between the sciences and the social sciences appear much less clear-cut than they once did. This is particularly true of historical scientific disciplines, such as cosmology or biology. Insofar as they try to describe changes in the past, specialists in these fields face the same dilemmas as historians; far from basing conclusions on repeatable laboratory experiments, they try, like historians, to reconstruct a vanished past from fragments left randomly to the present.

As the borders between the sciences and other modern disciplines have blurred, the idea of science as a quite distinct form of knowledge has become harder to defend. Careful observation leading to technological innovation is a feature of most human societies, while general theories about the nature of reality are offered in most forms of religion. Inductivist and falsificationist arguments cannot prove the truth of science; at best they highlight the pragmatic fact that scientific theories work because they are based on a larger body of observational evidence than any earlier knowledge systems and are also subject to exceptionally rigorous truth tests.

That line of argument suggests that we examine modern science's place in human life historically, seeing modern science as one of many different human knowledge systems that have evolved in the course of world history. From this perspective, it is striking how, over time, human knowledge systems have had to incorporate more and more information, and how the task of distilling that information into coherent theories has required ever more stringent testing of ideas and yielded theories that were increasingly universal and abstract in their form though increasingly elaborate in their details. Perhaps, then, the main distinguishing feature of modern science is its scale.

As Andrew Sherratt (1995) puts it: "‘Intellectual Evolution’ . . . consists principally in the emergence of modes of thinking appropriate for larger and larger human groupings . . . This transferability has been manifested in the last five hundred years in the growth of science, with its striving for culture-free criteria of acceptance . . ." Because it is the first truly global knowledge system, modern science tries to explain a far greater volume and variety of information, and it subjects that information to far more stringent truth tests than any earlier knowledge system.

This approach may help explain the two other distinctive features of modern science: its astonishing capacity to help us manipulate our surroundings and



Henry Stacy Marks, *Science is Measurement* (1879). Oil on canvas. Scientists base their claims on careful and systematic analysis of evidence.

rigorous avoidance of anthropomorphic explanations. For most of human history, knowledge systems were closely linked to particular communities, and as long as they provided adequate explanations of the problems faced by those communities, their credibility was unlikely to be challenged. But their limitations could be exposed all too easily by the sudden appearance of new problems, new ideas, or new threats. This was what happened throughout the Americas, for example, after the arrival of European conquerors, whose ideas undermined existing knowledge systems as effectively as their diseases and military technologies undermined existing power structures. As the scale of human information networks widened, attempts to integrate knowledge into coherent systems required the elimination of culture-specific explanations and encouraged reliance on abstract universals that could embrace larger and more diverse bodies of information and that could appeal to more diverse audiences.

As the sociologist Norbert Elias (1897–1990) wrote in an elegant account of changing concepts of time, “The double movement towards larger and larger units of social integration and longer and longer chains of social interdependencies . . . had close connections with specific cognitive changes, among them the ascent to higher levels of conceptual synthesis” (Elias 1998, 179). The change can be seen clearly in the history of religions. As religious systems embraced larger and larger areas, local gods were increasingly supplanted by universal gods claiming broader and more general powers and behaving in more law-like and predictable ways than the local gods they displaced. Eventually, the gods themselves began to be displaced by abstract, impersonal forces such as gravity that seemed to work in all societies, irrespective of local religious or cultural beliefs.

The Emergence and Evolution of Science

The knowledge systems of the animal world are individualistic; each individual has to construct its own maps of reality, with minimal guidance from other members of its species. Humans construct their knowledge systems collectively because they can swap information so much more effectively than other animals. As a result, all human knowledge systems distill the knowledge of many individuals over many generations, and this is one reason why they are so much more effective and more general in their application than those of animals.

This means that even the most ancient of human knowledge systems possessed in some degree the qualities of generality and abstraction that are often seen as distinguishing marks of modern science. Frequently, it seems, the knowledge systems of foragers relied on the hypothesis that reality was full of conscious and purposeful beings of many different kinds, whose sometimes eccentric behavior explained the unpredictability of the real world. Animism seems to have been widespread, and perhaps universal, in small-scale foraging communities, and it is not unreasonable to treat the core ideas of animism as an



attempt to generalize about the nature of reality. But foraging (Paleolithic) era knowledge systems shared more than this quality with modern science. There are good *a priori* reasons to suppose that foraging communities had plenty of well-founded empirical knowledge about their environment, based on careful and sustained observations over long periods of time. And modern anthropological studies of foraging communities have demonstrated the remarkable range of precise knowledge that foragers may have of those aspects of their environment that are most significant to them, such as the habits and potential uses of particular species of animals and plants. Archaeological evidence has also yielded hints of more systematic attempts to generalize about reality. In Ukraine and eastern Europe engraved bones dating to as early as thirty thousand years ago have been found that appear to record astronomical observations. All in all, the knowledge systems of foraging societies possessed many of the theoretical and practical qualities we commonly associate with modern science. Nevertheless, it remains true that the science of foragers lacked the explanatory power and the universality of modern science—hardly surprising given the limited amount of information that could accumulate within small communities and the small scale of the truth markets within which such ideas were tested.

With the appearance of agricultural technologies that could support larger, denser, and more varied communities, information and ideas began to be exchanged within networks incorporating millions rather than hundreds of individuals, and a much greater diversity of experiences and ideas. By the time the first urban civilizations appeared, in Mesopotamia and Egypt late in the fourth millennium BCE, networks of commercial and intellectual exchange already extended over large and diverse regions. Mesopotamia and Egypt probably had contacts of some kind with networks that extended from the Western Mediterranean shores (and perhaps Neolithic Europe) to Sudan, northern India, and Central Asia, in what some authors have described as the first world system.

Calendrical knowledge was particularly important to coordinate the agricultural activities, markets, and public rituals of large and diverse populations. The earliest calendars distilled a single system of time reckoning from many diverse local systems, and they did so by basing time reckoning on universals such as the movements of the heavenly bodies. This may be why evidence of careful astronomical observations appears in developed Neolithic societies in Mesopotamia, China, Mesoamerica (whose calendars may have been the most accurate of all in the agrarian era), and even in more remote environments such as England (as evidenced by Stonehenge) or Easter Island. The development of mathematics represents a similar search for universally valid principles of calculation. It was stimulated in part by the building of complex irrigation systems and large monumental structures such as pyramids, as well as by the need to keep accurate records of stored goods. In Mesopotamia, a sexagesimal system of calculation was developed that allowed complex mathematical manipulations including the generation of squares and reciprocals.

In the third and second millennia BCE, Eurasian networks of commercial and information exchanges reached further than ever before. By 2000 BCE, there existed trading cities in Central Asia that had contacts with Mesopotamia, northern India, and China, linking vast areas of Eurasia into loose networks of exchange. Late in the first millennium BCE, goods and ideas began traveling regularly from the Mediterranean to China and vice versa along what came to be known as the Silk Roads. The scale of these exchange networks may help explain the universalistic claims of religions of this era, such as Zoroastrianism, Buddhism, and Christianity.

The impact of these developments on knowledge systems is easiest to see in the intellectual history of classical Greece. Here, perhaps for the first time in human history, knowledge systems acquired a new degree of theoretical generality, as philosophers tried to construct general laws to describe the real world. As the writings of the historian Herodotus suggest, the Greeks were exposed to and interested in a colossal variety of different ideas and influences, from

Gentility of character, and nicety and purity of mind, are found in those who are capable of thinking deeply about abstruse matters and scientific minutiae. • **al-Razi (864–930)**

North Africa, Egypt, Persia, India, and the pastoralist societies of the steppes. The volume and variety of ideas to which Greek societies were exposed reflected their geographical position and the role of Greek traders, explorers, and emigrants forced, partly by overpopulation, to explore and settle around the many different shores of the Mediterranean and the Black Sea. Faced with a mass of new information, Greek philosophers set about the task of eliminating the particular and local and isolating those ideas that remained true in general. Thales of Miletus (c. 625–547 BCE), often regarded as the first of the Greek natural philosophers, offered explanations of phenomena such as earthquakes and floods that are universal in their claims and entirely free of the notion that reality is controlled by conscious entities.

At its best, Greek natural philosophy tried to capture not just this or that aspect of reality, but reality's distilled essence. This project is most apparent in Greek mathematics and in Plato's conviction that it is possible to attain knowledge of a perfect real world beneath the imperfections of the existing world. Greek philosophers were particularly interested in the testing of new ideas, a trait that is perhaps inevitable in societies faced with a sudden influx of new forms of knowledge. The rigor with which ideas were tested is apparent in the dialogues of Socrates, in which ideas are repeatedly subjected to Socrates' corrosive logic (in an ancient anticipation of the notion of falsification), with only the most powerful surviving. Many other societies developed sophisticated methods of mathematical calculation and astronomical observation, and some, such as Song China (960–1279), developed metallurgical, hydraulic, and financial technologies that were unsurpassed until the twentieth century. But few showed as much openness to new ideas or as much interest in the testing of new ideas and theories as the Greeks.

Other societies have responded in similar ways to the exposure to new and more varied ideas. Perhaps Mesopotamia and Egypt, both with relatively easy access to Africa, India and the Mediterranean, count as early pioneers of scientific ideas for similar reasons. And perhaps it is the extensive contacts of medieval

Islam that explain the fundamental role of Islam both in exchanging ideas (such as the mathematical concept of zero) between India and the Mediterranean worlds and in preserving and developing the insights of Greek and Hellenic science. Even in the Americas, it may have been the size of Mesoamerican populations and their exposure to many different regional cultures that led to the development of sophisticated calendrical systems from perhaps as early as the second millennium BCE.

Europe in the era of the scientific revolution certainly fits this model. Medieval European societies showed a remarkable openness to new ideas and an exploratory spirit that was similar to that of classical Greece. By the late medieval ages, European contacts reached from Greenland in the west to China in the east. Then, as European seafarers established close links with Southeast Asia in the east and the Americas in the west, Europe suddenly found itself at the center of the first global network of informational exchanges. The unification of the world in the sixteenth century constituted the most revolutionary extension of commercial and intellectual exchange networks in the entire history of humanity. Ideas about navigation and astronomy, about new types of human societies and new gods, about exotic crops and animal species, began to be exchanged on an unprecedented scale. Because Europe suddenly found itself at the center of these huge and varied information networks, it was the first region of the world to face the task of integrating information on a global scale into coherent knowledge systems. In the sixteenth century, European philosophers struggled to make sense of the torrent of new information that descended upon them, much of which undermined existing certainties. Like the Greeks, European thinkers faced the challenge of sorting the ephemeral from the durable, and to do that they had to devise new methods of observing and testing information and theories. It was this project that yielded the observational and experimental techniques later regarded as the essence of scientific method.

Thinkers in the era of the scientific revolution not only developed new ways of studying the world, they

also created a new vision of the universe. The new vision was based on the work of three astronomers: Nicholas Copernicus (1473–1543), Tycho Brahe (1546–1601), and Johannes Kepler (1571–1630). Copernicus was the first modern astronomer to suggest that the earth might be orbiting the sun; Brahe's careful astronomical observations provided the empirical base for Copernicus's theories, and Kepler's calculations showed that the new model of the universe worked much better if it was assumed that heavenly bodies traveled in ellipses rather than circles. Galileo used the newly invented telescope to show that heavenly bodies were as scarred and blemished as the earth, an observation that raised the intriguing possibility that the heavens might be subject to the same laws as the earth. Newton clinched this powerful unifying idea by showing that both the earth and the heavens—the very small and the very large—were subject to the same basic laws of motion. And this suggested the possibility that the universe as a whole might run according to general, abstract laws rather than according to the dictates of divine beings. Galileo's discovery of millions of new stars also suggested that the universe might be much larger than had been supposed, while Anthony van Leeuwenhoek (1632–1723), the pioneer of modern microscopy, showed that at small scales there was also more to reality than had been imagined. Taken together, the theories of the sixteenth and seventeenth centuries transformed traditional views of the universe in ways that threatened to decenter human beings and throw into question God's role in managing the universe. It was no wonder, then, that many feared that the new science might undermine religious faith.

Since the seventeenth century, the global information exchanges that stimulated the scientific breakthroughs of the scientific revolution have accelerated and affected more and more of the world. The prestige of the new sciences was particularly high in the era of the Enlightenment (seventeenth and eighteenth centuries), and encouraged more and more investigators to study the world using the techniques and assumptions of the scientific revolution. In the eighteenth and nineteenth centuries, scientific investigations yielded



U.S. president Warren G. Harding escorts Madame Curie down the steps of the White House in the 1920s.

powerful new theories in fields as diverse as medicine (the germ theory), chemistry (the atomic theory and the periodic table), the study of electromagnetism (the unified theory of electromagnetism), energetics (theories of thermodynamics), geology, and biology (natural selection).

Scientific research was supported by the creation of scientific societies and journals, the introduction of science courses in universities, and the creation of research laboratories by businesses. The last two developments were both pioneered in Germany. The word *scientist* was first used in the 1840s. Meanwhile, the spread of scientific approaches to the study of reality and the increasing scope of scientific theory began to yield significant technological innovations in health care, manufacturing, and warfare. Particularly important were innovations in transportation and communications, such as the invention of trains and planes and the introduction of postal services, the telegraph, the telephone, and eventually the Internet, because these innovations expanded the scale and quickened the pace of information exchanges.

In the twentieth century, a series of new scientific theories appeared that refined the orthodoxies



Nine scientists in the Tian Shan range in Central Asia observe a solar eclipse through two telescopes (1907).

of eighteenth- and nineteenth-century science. Einstein's theory of relativity demonstrated that space and time were not absolute frames of reference, while the quantum theory showed that, at the very smallest scales, reality itself does not behave in the predictable, mechanical ways assumed by earlier theories. Big bang cosmology, which has dominated cosmological thought since the 1960s, demonstrated that the universe, far from being eternal and infinite, had a history, beginning many billions of years ago, while the theory of plate tectonics, which appeared at about the same time, provided the foundations for a unified theory of geology and a detailed history of the formation and evolution of the earth. In biology, Francis Crick (1916–2004) and James Watson (b. 1928) described the structure of DNA in 1953; their work laid the foundations for modern evolutionary theory and modern genetic technologies. Meanwhile, the scale of scientific research itself expanded as governments and corporations began to fund special research facilities, sometimes to fulfill national objectives, as was the case with the Manhattan Project, which designed the first atomic weapons.

Outlook

Recent scholarship suggests that it is a mistake to see modern science as fundamentally different from all other knowledge systems. Like all effective knowledge systems, it is based on induction: on careful empirical observation followed by attempts to generalize. Like all knowledge systems, it is subject to falsification, to the sudden appearance of new realities or new forms of information that may overturn established certainties. What really distinguishes modern science from earlier knowledge systems is the size of the intellectual arena within which its ideas are generated and tested. Its explanatory power and its qualities of abstraction and universality reflect the volume and diversity of the information it tries to distill, and the rigor of the truth tests to which its claims are subjected in a global truth market.

During the past two centuries, science has spread beyond the European heartland to Russia, China, Japan, India, and the Americas. Today it is a global enterprise, and its accounts of reality shape the outlook of educated people throughout the world. Far

from diminishing, the flow of new information that stimulated the original scientific revolution has kept expanding as the pace of change has accelerated and the world as a whole has become more integrated. Early in the twenty-first century, the power of science to generate new ways of manipulating the material world, for better or worse, shows no sign of diminishing. Science has given our species unprecedented control over the world; how wisely we use that control remains to be seen.

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See also Galileo Galilei; Newton, Isaac; Modernity; Scientific Revolution; Time, Conceptions of

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Scientific Instruments

All scientific instruments share a single quality: they are made and used to study the natural world or to tell others about the natural world. Too often, say some scholars (and museum curators faced with cabinets full of compasses and sextons) we lose focus on how and for what purposes objects are used, and by whom, and that those parameters often vary from culture to culture.

We think that we know what “scientific instruments” are. After all, science museums all over the world proudly display collections of the material remains of the activity called “science.” Scientific instruments include astrolabes and armillary spheres, chemical glassware and fume cupboards, telescopes and clocks. They are used in laboratories, classrooms, in space, at sea and underground—and many other places besides—and vary in size from massive objects like the particle accelerator at CERN, Geneva, to the tiniest nanotechnology devices that can only be seen with the help of a microscope. They might look impressive, like the gilt brass telescopes of eighteenth-century European observatories, or they might be deceptively plain, functional and compact black boxes packed with electronic circuitry. What links all these instruments is that they were made and used to study the natural world or to tell others about the natural world: activities common to many world cultures. But the custodians of these collections sometimes have trouble defining what to include under the heading “scientific instruments” and therefore what to collect. Deborah Warner, a curator at the Smithsonian Institution in Washington, DC, in an article entitled “What Is a Scientific Instrument,

When Did It Become One, and Why?,” explores the changing meanings of the term *scientific instrument* and concludes that the term is problematic. She says that it should not be used as often as it is and should be replaced by terms contemporary with the instruments that are being studied.

Albert Van Helden and Thomas L. Hankins also discuss the ambiguity of the term *scientific instrument* in their introduction to a collection of essays entitled *Instruments*, suggesting that the ambiguity inherent in the terms *science* and *instrument* might be a virtue. They believe that we should look at the variety and contexts of the uses of such instruments rather than make a list of which kinds of objects we are to count as scientific instruments. They list four uses to which instruments are put. First, Van Helden and Hankins point out that instruments confer authority and settle disputes—instruments are part of the attempts by practitioners to convince others of the validity of their ideas. Second, and linked to the first use, Van Helden and Hankins point out that instruments are created for audiences, that is, the wider community, including patrons and supporters, who is interested in the practitioners’ activities. Third, Van Helden and Hankins suggest that one use of instruments is to act as a bridge between natural science and popular culture, through the symbolic and educational uses of objects. Fourth, Van Helden and Hankins note that the role of instruments changes when they are used to study living things. In none of these four uses is there an explicit statement that people use instruments to find out about the natural world, but this use is the underlying idea behind the other four: instruments provide ways of looking at, understanding, and telling others about the natural world.

Recent work in the sociology of scientific knowledge has shown that the actual processes of (Western) scientific researchers and their use of instruments are less objective than the third-person, passive-voiced articles reporting their results would have the reader believe. The role of skill and tacit knowledge looms large, and especially so in the use of instruments. Thus, if in the much better-studied case of Western scientific investigation we have much to learn about the ways that people use objects to find out about the natural world, in other world cultures we have even more to learn.

Helene Selin, editor of the *Encyclopedia of the History of Science, Technology and Medicine in Non-Western Cultures*, believes that to study science in non-Western cultures we must accept that each culture has its own science that defines and predicts natural events and that each science is valid in terms of its culture. She contends that our own science also is a reflection of its culture and that culture is a factor in each step of doing science.

Acknowledging the Western focus of most scholarship on scientific instruments, Van Helden and Hankins suggest that, “Looking at instruments in a non-Western society teaches us that their use and intended purpose is not obvious, and warns us, by reflection, that the role of instruments in Western science is sure to be even more complex . . .” (Van Helden and Hankins 1994, 6).

They suggest that we look at how scientific instruments have worked in humanity’s consideration of the natural world—the different uses to which objects have been put. In Selin’s terms, we must look at how instruments have worked within the different frameworks that she calls “science”—the ways that people consider and have considered the natural world.

This focus on how objects are used, by whom, and for what purposes means that we can see objects that are superficially similar in function but that relate to people and their activities in quite different ways. For example, navigation at sea in eighteenth-century Europe relied on using charts, taking measurements of the altitude of sun and stars above the horizon and the direction of the North Pole—activities linked

to instruments such as the compass and the mariner’s astrolabe. Turning to the Marshall Islands in the South Pacific, we find charts made from sticks that map the atolls (coral islands consisting of a reef surrounding a lagoon) and islands, waves and currents, and measurement of direction based on a star compass. But the ways that these objects are used by the Marshall Islanders are different from the ways that the European charts and compass were used, most significantly in that the Marshall Islanders do not take the charts and star compass to sea with them. The islanders use the charts in the training of navigators rather than in the practice of navigation itself—someone memorizes the charts and the star compass, and the navigation is actually done using mental models of the physical objects.

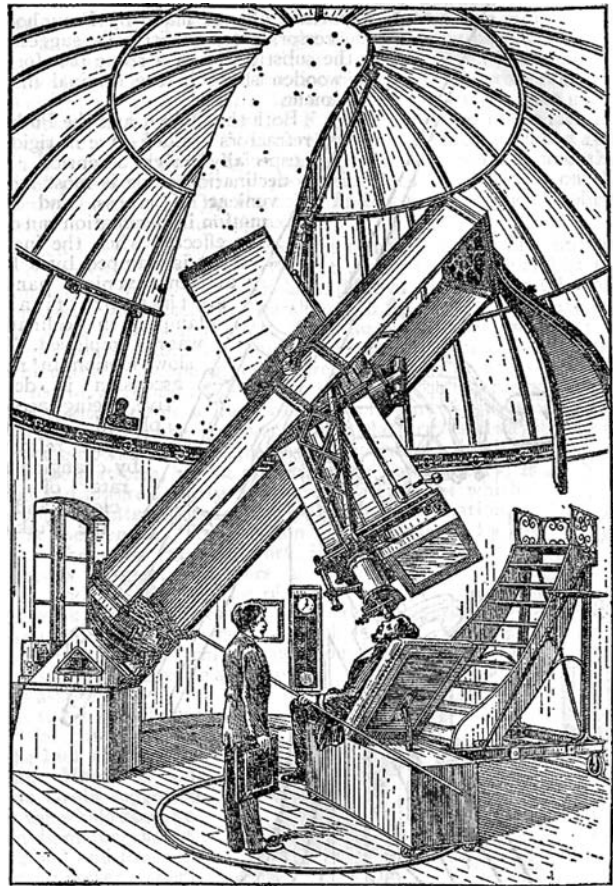
Cultural Context

The function of scientific instruments can also change as they move from one cultural context to another. During the sixteenth and seventeenth centuries Jesuit missionaries visited China, hoping that by convincing the emperor of the superiority of their astronomical instruments and observations, they could persuade him to convert to Catholicism. The Jesuits took with them the instrument designs of the Danish astronomer Tycho Brahe and taught Chinese metalworkers to make instruments according to these designs, albeit with Chinese-style stands and mounts. These new instruments replaced the thirteenth-century astronomical instruments of the Beijing (Peking) observatory. In his study of astronomical instruments in Ming-dynasty China (1368–1644), Thatcher Deane argues that they were more “useful” as symbols for the emperor’s heavenly mandate than as tools for observation. Allan Chapman’s study of the Jesuit missions to China shows that they did not need to use the most up-to-date instrument designs because their role was more ambassadorial than observational. Thus, the status of the instruments used by the Jesuits changed subtly when physically (and intellectually) located in China rather than in Europe. The Jesuits hoped that this integration could, in the end, lead to the

conversion of the Chinese emperor, but the Chinese were happy to select certain benefits offered by the missionaries and take their astronomical and instrumental expertise without following their lead in matters of religion.

The Jesuit missionaries' attempts to convince the Chinese of the superiority of European astronomical (and, by extension, religious) thinking offer an example of the use of scientific instruments in the service of religious conversion. But, as the historian of technology Michael Adas describes, despite the fact that scientific curiosity was a major motivating factor in the Europeans' exploration of the world from the fifteenth century onward, the early explorers and conquistadors did not often use scientific knowledge as a way of gauging their superiority over the people they encountered; that came later with the rise of "scientific racism." Nonetheless, the existence of large cities or complex scientific instruments was included in assessments about how "developed" a particular civilization was. As empire and colonialism gathered pace, division of "science" from "magic" and "superstition" sealed the Western dominance of science and technology, and this edifice is only now being slowly dismantled, with renewed interest in scientific and medical knowledge of non-Western civilizations.

The place of scientific instruments within the process of colonialism is complex. For example, surveying instruments are used in the construction of maps, and evidence indicates that mapmaking was among the strategies used by colonial powers to delineate and therefore control the land they occupied. We might know a little about how, say, Native Americans mapped their world, but we often have little or no evidence to tell us for sure what relationship instruments had to their study of the natural world. Selin cautions against seeing the lack of evidence as a lack of activity, arguing that surely mathematicians in the Pacific Island countries or the Americas were as skillful as more famous people from China or the Middle East. The survival of written records is contingent on many factors, not least on war and colonialism, and because of this fact the study of objects becomes even more important: they provide a source of knowledge about



This pen-and-ink rendering depicts equipment in the Paris Observatory in the early twentieth century.

people and their scientific activities that is outside written records and therefore accessible to scholars in cases where the evidence is otherwise somewhat thin or even completely lost.

Questions

These few examples show the diversity of ways by which people have used instruments to consider the natural world and the ways in which some scholars have studied them. Instruments can relate to the underlying scientific framework and practices in various ways. Therefore, the problems identified by Warner and by Van Helden and Hankins loom larger when we consider scientific instruments as part of world history. After all, what is to count as a "scientific instrument" when the very category of "science" is opened up to include all the ways by which people measure, predict, and tell others about the natural world? The term is loaded with Western ideals about



the rational, impartial approach to the natural world, which might be difficult to reconcile with other peoples' ways of considering the heavens, the rocks, or the seas. A stick in the ground might be just that, but a stick in the ground casts a shadow, and if someone uses the track of that shadow to measure the passage of time or the seasons, that stick becomes a sundial or a calendar. Should we then call it a "scientific instrument"? Should a museum include that stick in its collection of scientific instruments? If it did, what other information should it record about the ways by which the stick was used so that the link between object and practice is not lost?

Some objects might be classified as scientific instruments all the time—such as an armillary sphere, which models the structure and motions of the heavens. However, even such apparently intrinsically scientific instruments can be used for symbolic or religious purposes wider than the strictly "scientific." Other objects might have the status of "scientific instrument" only temporarily, such as the stick in the ground. Here we have gone far beyond the first explicit definition of the term *scientific instrument*, proposed by the Scottish physicist James Clerk Maxwell in 1876: "Everything which is required in order to make an experiment is called Apparatus. A piece of apparatus constructed specially for the performance of experiments is called an Instrument" (Maxwell 1876, 1).

We have perhaps gone too far for the comfort of some museum curators because allowing objects to temporarily have the status of "scientific instruments" brings in huge numbers of objects that have thus far not been collected or studied as such. If this definition is pushed to its limits, curators such as Warner will have even greater problems determining what is to count as a scientific instrument and therefore what kinds of objects to collect. People interested in how humans look at the natural world and how objects and instruments relate to that activity, though, are less constrained by the practical and physical problems of conservation and storage, and such a broad definition is perhaps less problematic. It might be

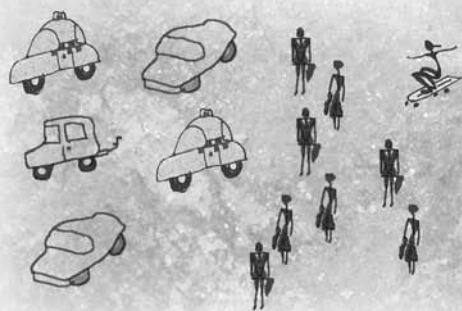
even beneficial because it opens our eyes to the different approaches that humans have taken to understanding the natural world and the various roles that instruments have played in these activities.

Catherine EAGLETON
British Museum, London

See also Museums; Science—Overview; Scientific Revolution

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Scientific Revolution

The Scientific Revolution marked a period of monumental change in thought, belief, and cultural and institutional organization that swept Europe between roughly 1550 and 1700. During those 150 years Western science advanced more than it had during the previous fourteen hundred years—since the Greek physician Galen’s work in anatomy and the Greek astronomer Ptolemy’s work in planetary motion.

Historians generally date the beginning of the Scientific Revolution, the period that produced the most remarkable advances made in Western science for more than a millennium, with the Polish astronomer Nicolaus Copernicus (1473–1543) and his book *De Revolutionibus* (On the Revolutions) and date the ending with the English mathematician and physicist Isaac Newton (1642–1727) and his book *Philosophiae Naturalis Principia Mathematica* (Mathematical Principles of Natural Philosophy).

Before Copernicus and Newton people still saw the world through the eyes of the Greek philosopher Aristotle (384–322 BCE). He thought that the world is composed of four elements: earth, water, air, and fire. The Aristotelian world was a hierarchically structured universe where a clear distinction existed between the destructible space under the moon and eternal celestial space. Because to minds of the time Aristotelian philosophy could answer the most important cosmological (relating to the natural order of the universe) and astronomical questions, people found no compelling reason to dispute him for centuries. His natural philosophy had been accepted—with slight modifications—in the Western world by both intellectuals and the “working” class, by both

pagans and Christians, for almost two thousand years.

Nevertheless, as Western thought gradually began to change during the Scientific Revolution, some scientists—a handful at first, fistfuls after a while—published works that challenged Aristotelian philosophy. According to the French historian Alexandre Koyre (1892–1964), two fundamental changes occurred during the Scientific Revolution: the previous view of the universe was destroyed, and space was geometricized. “[The founders of modern science] had to destroy one world and to replace it by another. They had to reshape the framework of our intellect itself, to restate and to reform its concepts, to evolve a new approach to Being, a new concept of knowledge, a new concept of science” (Koyre 1968, 20–21).

The world during the Scientific Revolution became an open and infinite universe without any hierarchy. It could be described using the geometry of the Greek Euclid. Celestial phenomena and earthly phenomena were now described by the same physical laws.

Furthermore, scientists were not satisfied with just describing natural phenomena but went further by studying the secrets of nature to explain how nature works. As they worked toward this goal they needed more powerful tools than purely philosophical arguments and therefore began to use mathematics and experiments.

Such a transition was not easy, its course not straight and smooth. Many times the scientists who played a major role in the transition lost their enthusiasm, had doubts, and balked. Isaac Newton, for example, had been passionately engaged in alchemy (a medieval chemical science aiming to achieve the transmutation of base metals into gold), and the German astronomer



Portrait of Copernicus from the ephitaphium in St. John Basilica, Toruń, Poland, circa 1580.

Johannes Kepler (1571–1630) had to summon great inner strength to transform his thinking from animism (a doctrine that the vital principle of organic development is immaterial spirit) to what we call today “mechanistic” thinking, which holds that natural processes are mechanically determined and capable of explanation by laws of physics and chemistry.

Furthermore, the Scientific Revolution was not an achievement of just a few brilliant minds who conceived and codified new theories and discoveries and made them available to a wider and more receptive audience. The academies and learned societies—such as the Royal Society of London (1692), the Academy of Sciences in Paris (1666), the St. Petersburg Academy (1729), and the Royal Academy of Sciences in Denmark (1742)—played a significant role as the institutions that legitimate such new ideas. Universities remained more conservative, continuing to support Aristotelian philosophy.

During the Scientific Revolution thinkers also began to channel knowledge into rational systems. For

example, in biology the Swedish botanist Carolus Linnaeus (1707–1778) devised the Linnean classification system, which catalogued all known living creatures into a system that defined their morphological (relating to form and structure) relations. In chemistry a new system of understanding chemicals and elements began when the English scientists Henry Cavendish and Joseph Priestley discovered gases during the latter half of the eighteenth century. In medicine physicians began to understand that the body is a natural system that functions predictably, like a machine. Disease is simply the breaking down of the machine. The science of pathology began, and physicians began to see disease—and recovery from disease—as a rational process.

Copernicus

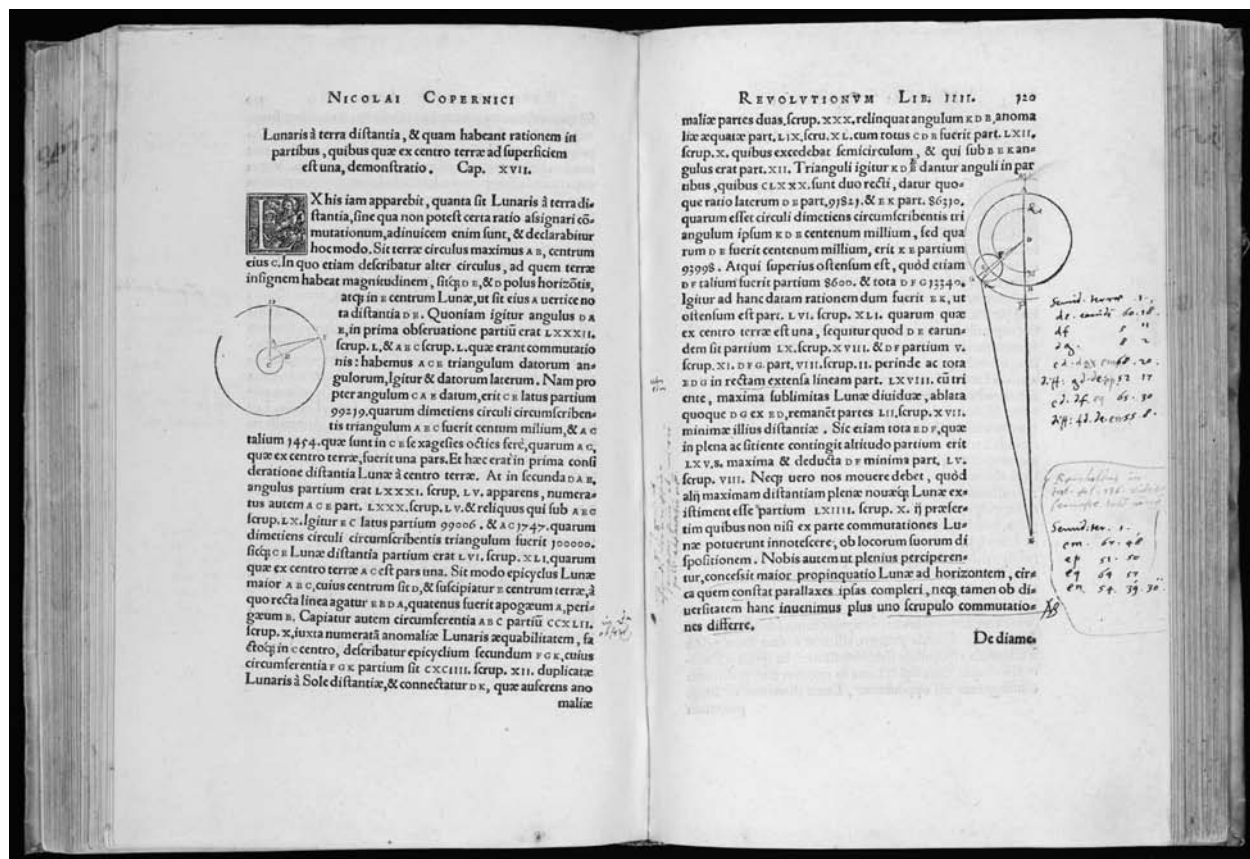
The astronomer Nicolaus Copernicus boldly claimed that the Earth rotates on its axis daily and revolves around the sun (heliocentric) annually rather than being fixed in the center of the cosmos. Such a claim ran counter to tradition, to the authority of the ancients, and to views of both colleges and churches.

Although relevant ideas had been expressed in antiquity, for example, by the Greek Pythagorean philosopher Philolaos (flourished 475 BCE) and the Greek astronomer Aristarchus (320–250 BCE), Copernicus was the first to attempt to prove the mathematical foundations of the heliocentric system using geometry.

However, for several decades the theories of Copernicus failed to solve some important astronomical problems, such as the orbits of the planets and gravity.

Galileo

The Italian astronomer Galileo Galilei (1564–1642) was the first scientist to formulate the law of the free fall of bodies. According to this law a body that falls from a certain height without friction has constant acceleration, and the distance it covers is relevant to the square of the time that is needed. Galileo formulated



Pages from Copernicus's book *De Revolutionibus* (*On the Revolutions*). Beinecke Rare Book and Manuscript Library, Yale University.

this law in 1604 and made it public in 1632 in his book *Dialogo sopra I due Massimi Sistemi del Mondo* (Dialogues of the Two Chief Systems of the World). He described the law in detail in 1638 in his book *Discorsi e Dimostrazioni Matematiche intorno a due nuove scienze attenenti alla Mecanica e I movimenti locali* (Speeches and Mathematical Demonstrations around Two New Sciences Pertaining to Mechanics and Local Movements).

According to tradition Galileo proved the accuracy of the law with experiments that he performed in the Tower of Pisa, but historical evidence has not fully supported that tradition. On the contrary, he performed experiments using an inclined plane that had been constructed to minimize friction.

Furthermore, Galileo clarified the concept of inertia and expressed it in a form that was not far from the form of the law of inertia that Newton proposed later.

Galileo also was among the first scientists to use a telescope to observe the heavens. He presented one

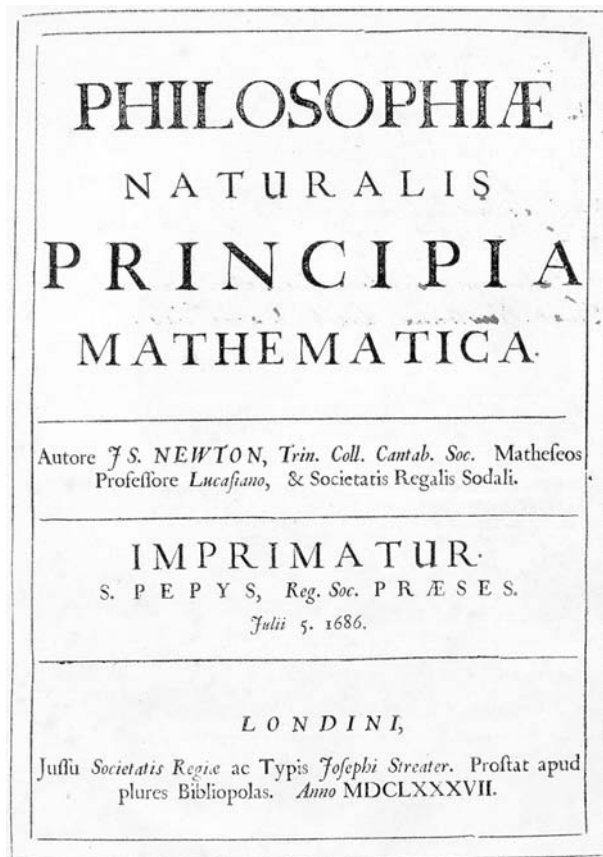
of his first telescopes to the doge (chief magistrate) of Venice, asking that Galileo's professorship be made permanent at the University of Padua and receiving a doubling of his salary.

Galileo's observations of the surface of the moon and the satellites of Jupiter, published in 1610 in *Sidereus Nuncius* (Sidereal Messenger), supported the Copernican system. Many scientists disputed these observations, however, and questioned the reliability of observations made with a telescope.

To win over such skeptics Galileo used a clever stratagem: he sent his book and a telescope to members of the nobility to gain their political support. But the Catholic Church finally forced Galileo to renounce Copernicus's system, and tradition says that after his renunciation Galileo whispered "yet it moves."

Kepler

The astronomer Johannes Kepler published his book *Mysterium Cosmographicum* (The Secret of the



Title page from *Principia Mathematica* by Sir Isaac Newton, Cambridge, 1713. Beinecke Rare Book and Manuscript Library, Yale University.

Universe) in 1596. When he realized that his theory about the movements of the planets Mercury and Saturn was wrong he began to try to improve the accuracy of his observations. For this reason in 1600 he became an assistant to the Danish astronomer Tycho Brahe (1546–1601), who established the regular observation of stars and planets on the sky. When Brahe died in 1601 Kepler possessed a huge amount of astronomical observations. From them he finally formulated his famous three astronomical laws: (1) The orbits of the planets are ellipses, with one of their foci the sun. (2) A line joining a planet and its star sweeps out equal areas during equal intervals of time. (3) The square of the sidereal period of an orbiting planet is directly proportional to the cube of the orbit's semimajor axis.

The first two laws were published in 1609 in Kepler's book *Astronomia Nova* (New Astronomy), which shows Kepler's transition from animistic to mechanistic thought.

Newton

Isaac Newton's contributions to the Scientific Revolution were many and included his mechanical universe and his universal laws. His *Philosophiæ Naturalis Principia Mathematica* was possibly the most influential scientific book ever published. It contained his laws of motion, which formed the foundation of classical mechanics, as well as his law of universal gravitation. Many scholars also credit Newton with inventing calculus.

The mechanistic concept was the mainstream of scientific thought during the seventeenth century. The concept's most important representative was the French mathematician and philosopher René Descartes (1596–1650). He argued that matter is everywhere in the universe and proposed his vortex theory to explain the movement of celestial bodies. He believed that fine matter in the ether forms vortices around the sun and other stars. Although science would prove Descartes's theory inadequate, its contribution was important because eventually no one would cite supernatural powers to explain physical phenomena.

Such advances created the necessary setting for the next decisive step—the synthesis of a new view of the world. The person most prominent in creating this new view was Newton, who believed that the orbits of the planets are determined by a central force that is reduced in inverse proportion with the square of the distance.

Most people learned about Newton's ideas indirectly by reading the books of the so-called popularizers of Newtonian physics. People have difficulty understanding *Principia* even today. The proofs of the various proposals and theorems follow traditional geometrical methodology, providing the necessary reliability in the framework of his contemporary scientific community.

Principia states the three basic laws of classical physics: the principle of inertia, the principle of action-reaction, and the second law of mechanics, according to which acceleration is proportional to the force acting on a body. Furthermore, Newton defines the law of universal attraction and uses it to

determine the orbits of the planets. In another book, *Optics* (1704), Newton presents his ideas on light. This book is characterized by its persistence on experimental methodology.

The Dutch mathematician Christian Huygens (1629–1695) and the German philosopher and mathematician G. W. Leibniz (1646–1716) objected to many Newtonian propositions, but their objections did not diminish the wider acceptance of Newton's work.

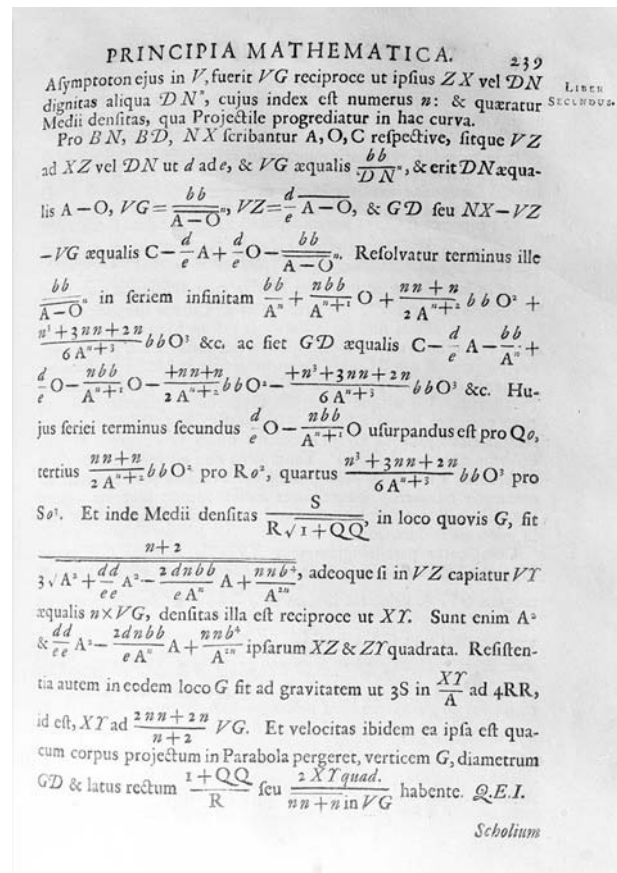
Dissemination

Many historians feel that the Scientific Revolution was not fully propagated until the eighteenth century. For example, that was when Dutch engineer Peter van Musschenbroek (1692–1761) and the Italian philosopher Francesco Algarotti (1712–1764) undertook the task of making Newton's work better known. Newton's work connected closely with the Enlightenment, which was a philosophic movement of the eighteenth century that was marked by a rejection of traditional social, religious, and political ideas and an emphasis on rationalism.

Among others the French man of letters Bernard Fontenelle (1657–1757) supported the idea that the new scientific method could be applied in politics, ethics, and sociology and that it could be used to determine human behavior in a rational way. In this setting Denis Diderot (1713–1784) and Jean le Rond d'Alembert (1717–1783) produced their famous French encyclopedia.

By the end of the eighteenth century the main physical theories of the Scientific Revolution were spreading in countries such as Spain, Portugal, Brazil, and Greece as conservatives abandoned their resistance to the new worldview.

As a result of this transformation, during the last quarter of the eighteenth century two other revolutions took place in France. One was political, leading to publication of the Declaration of the Rights of Man and of the Citizen in 1789, and one was scientific, transforming chemistry from an alchemical practice into a real science. The French chemist Antoine



Newton's *Principia* states the three laws of classical physics: inertia; action-reaction; and the second law of mechanics.

Lavoisier (1743–1794) played a role in both revolutions, being an opponent of the first and a leader of the second.

The Scientific Revolution was crucial for the development of what we call today "Western civilization." Its intellectual advances were the embodiment of humanity's quest to gain a coherent grasp of nature.

George N. VLAHAKIS

Independent scholar, Maroussi, Greece

See also Enlightenment, The; Galileo Galilei; Newton, Isaac; Science—Overview; Scientific Instruments

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What moves men of genius, or rather what inspires their work, is not new ideas, but their obsession with the idea that what has already been said is still not enough. • **Eugene Delacroix (1798–1863)**

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The process of script decipherment involves figuring out how to interpret an alphabet that is no longer in use and completely forgotten. The most commonly recognized decipherments are cuneiform and hieroglyphs. The most recent (in 2008), the alphabet of a language called Carian (from southern Anatolia and throughout Egypt) depended on interpreting graffiti written by Carian mercenaries during the second half of the first millennium BCE.

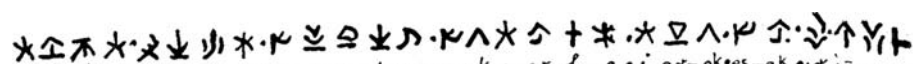
For a script to be deciphered, it must first have gone out of use and been completely forgotten—along with the entire culture it supported. The language it wrote may or may not have survived, and related scripts may still be in use, but the script itself is the focus. Thus Etruscan is not a candidate for decipherment, since its alphabet, midway between the Greek and the Latin, is unproblematic. Nor, when an unknown Egyptian tomb is discovered, are its inscriptions deciphered, for they are written in a script that yielded its secrets nearly two hundred years ago. A decipherment is a discrete event, though subsequent generations of scholars may spend decades refining it.

The Semitic Consonantal Scripts

The first successful decipherment was achieved literally overnight in 1754 by Jean-Jacques Barthélemy,

an abbé and classical scholar who was numismatist to King Louis XV of France. Explorers brought back from the ancient city of Palmyra accurate copies of brief inscriptions displayed in pairs, Greek and Palmyrene, and it was an easy assumption that they represented the same content. Comparison of proper names yielded the pronunciations of the unfamiliar letters, and with hindsight both script and language could be seen to be similar to those of the closely related ecclesiastical literary Aramaic language, Syriac. Over the next few years Barthélemy was also able to interpret the more ancient but related numismatic and inscriptional Aramaic and Phoenician scripts as well. (The Phoenician language is closely related to Hebrew; along with Aramaic, they are Northwest Semitic languages.) Unfortunately from the point of view of historians, these materials virtually without exception are brief and uninformative, mainly funerary. Edward Gibbon in *The Decline and Fall of the Roman Empire* (1776) makes no use of them, for example, in his account of the fall of Palmyra and its queen Zenobia (chap. xi). Barthélemy himself, who spent thirty years preparing an immense picaresque didactic novel detailing *The Voyage of Young Anacharsis* (a fictional Phrygian traveler in mid-fourth-century Greece and environs), published in 1788, does not cite the inscriptions there.

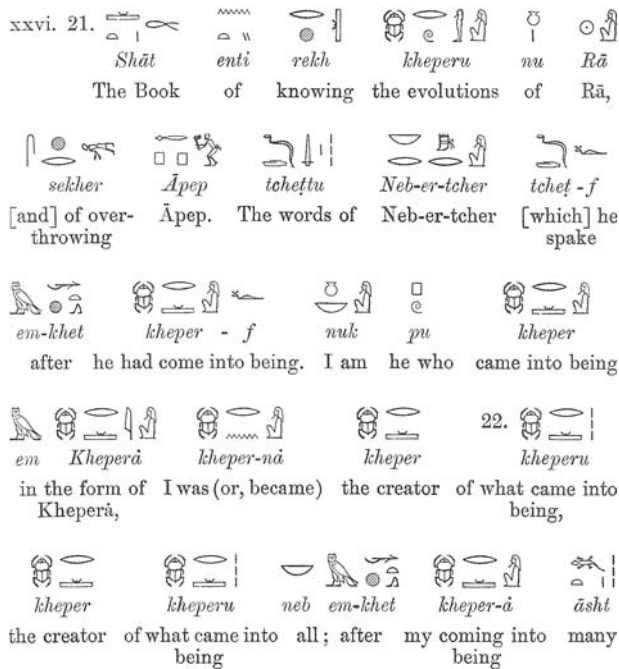
Only in the second half of the nineteenth century did explorers and archeologists begin to encounter longer (mainly annalistic and dedicatory) inscriptions


 l-ak-ut-l-ak-d-en-a-es-o-is-et-qu-es-ok-l-or-d-e-i-ar-ok-es-ak-ur-iw-amak
 I αχ υτ λ ακ δ εν α ες ο ις ετ οκ ες οκ λ ο ρ δ ε ι α ρ ο κ ες ακ υ ρ ι ω α μα κ

A Cyprian inscription circa the fourth century BCE, with transliteration and Greek words below.

CHAPTER VIII

THE HISTORY OF THE CREATION OF THE GODS AND OF THE WORLD. VERSION A.



This and the following illustrations show decipherment and translation examples from *The History of the Creation of the Gods and of the World. Version A*, from Egyptian Hieroglyphics.

in these scripts, which began to provide alternative accounts of episodes known only from the Bible—the first, longest, and for a long time the earliest (c. 850 BCE) is the Mesha inscription (discovered 1868, in Moabite, very like Hebrew), which relates puzzlingly to 1–2 Kings; the Siloam Tunnel inscription (discovered 1880, in Hebrew) spectacularly illuminates 2 Kings 20:20. A handful of inscriptions in Aramaic from small Aramaean kingdoms scattered around the northeast corner of the Mediterranean—a perfectly preserved one was discovered in 2008 that may change our understanding of how its writers understood the concept of the soul—offer almost all that is directly known about these buffer states, located between the alternately surging Assyrian, Egyptian, and Hittite empires.

Antoine Isaac Sylvestre de Sacy's decipherment in the late 1780s of the scripts of the Middle Persian languages of the Parthian and Sasanian empires also did not yield much. From their coins and their meager

inscriptions, we learn little beyond the names of the kings and the fluctuating extents of their domains. Emil Rödiger's decipherment of the South Arabian ("Himyaritic") script a half-century later provided little information to historians. Inscriptions in the four languages involved, notably Sabaean, are numerous, and some are lengthy, but they are almost impossible to date, and they are concerned far more with local hydraulic projects than with affairs of state.

Cuneiform

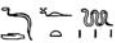
By far the most important decipherment—not only in sheer quantity of materials made available, but in their quality as well—was of the complex of scripts known as cuneiform. Again it was a question of accurate copies, this time brought from Persepolis by the Danish explorer Carsten Niebuhr and published beginning in 1772. Each Persepolitan inscription appeared in three guises: three scripts differing in complexity. It was an easy surmise that they represented the same text in three languages; the crucial step in their decipherment was taken by a German *gymnasium* (high school) instructor, Georg Friedrich Grotefend, who in 1802 conjectured that the most prominent in each example, which also happened to be the simplest of the three, probably represented the principal language of the Persian (Achaemenid) Empire. Guided by de Sacy's texts, he expected to find formulas like "Xerxes, great king, son of Darius, great king, son of Hystaspes" (who was not a king)—the names known from the Greek of Herodotus. Indeed he found suitably repetitive patterns, and he knew enough of Iranian languages to point the way for specialists, some of the pioneers in Indo-European studies, including two other Danes, Rasmus Rask and Christian Lassen, to bring the decipherment to completion over the next few decades.

The Persepolis inscriptions proved to be singularly unenlightening as to political history, while theology and imperial ideology emerge more clearly. The only quasi-annalistic inscription, an immense one placed by Darius I on a cliff near Behistun, Iran, which was copied with great difficulty and aplomb by a British

military diplomat stationed in Baghdad, H. C. Rawlinson, offers endless opportunities for the disputations of historians. Its 1848 publication, however, was too late to be of use in the decipherment of cuneiform; Rawlinson's work on the Old Persian version seems to have independently replicated that of Grotefend over a generation earlier. The second of the three official Achaemenid languages, now known as Elamite, remains little understood (the initial interpretation was by yet another Dane, N. L. Westergaard). The third language—with by far the most complicated script ever deciphered—was the real historical bonanza. Though credit for its decipherment is usually assigned to Rawlinson, especially by his partisans toward the end of the nineteenth century, it is now clear that it was done by Edward Hincks, a Church of Ireland (Anglican) clergyman, whose better-known father was a professor in the university in Belfast and whose younger brother was Premier of Canada in the 1850s. His work was mainly published in the *Transactions of the Royal Irish Academy* in the late 1840s.

The inscribed materials in the third script that were available to Hincks had been brought from Mesopotamia to England as curiosities earlier in the nineteenth century, often identified by the names of their owners—the Bellino Stone, the India House Inscription—or had been published by explorers—notably a long inscription in a language now called Urartian from near Lake Van. An important tool in the decipherment was the presence in these inscriptions of repeated formulas that were spelled slightly differently (so as to fit in the available space, for instance). And the reason for repetitive formulas was that these long inscriptions turned out to be annals, with the events of successive years of a king's reign laid out in stereotypical form. The language of the Mesopotamian inscriptions (and the third Persepolitan variety) was soon identified as Semitic; it is now known as Akkadian. (Essentially the same writing system, devised for Sumerian, serves Akkadian, the Indo-European language Hittite, the not very well known Urartian and its only relative Hurrian, and the aforementioned Elamite, as well as other languages

THE CREATION

					
kheperu	em	per	em	re-a	an
[were] the things which came into being					
					
kheper	pet	an	kheper	ta	an
existed heaven, not existed earth, not had been created					
					
salat	tchetfet	em	bet	pui	
the things of the earth, and creeping things (i.e., plants) in place that ;					
					
thes	na	am	sen	em	Nu
I raised up them from out of Nu (i.e., the primeval abyss of water)					
					
em	enen	an	gem-na	bet	ah-na
from a state of inactivity. Not found I a place I could stand					
					
ami	khut-na	em	abt-a		
wherein. I worked a charm upon (or, with) my heart.					
					
senti-na	em	Maā	ari-na	aru	nebt
I laid a foundation in Maā [and] I made attribute every.					
					
uā-h[uā]	an	āshesh-na	em	Shu	an
I was alone, [for] not had I spit in the form of Shu, not					

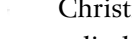
of which only a few words are recorded.) True to the preoccupations of the time, in one of the very first editions of an ancient monument, the so-called Black Obelisk of Shalmaneser, Hincks was the first to recognize the name of a biblical personage, Jehu of the "house of Omri," king of Israel (1 Kings 16:16–28), among those paying tribute.

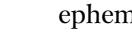
Throughout the 1840s the first excavations of sites in Mesopotamia—at ancient Nineveh—were carried out by Austen Henry Layard for the British Museum and Paul Émile Botta for the Louvre. Layard in particular had the good fortune to come across both a palace whose walls were covered with impressive reliefs and lavish inscriptions, and an extensive library, that of the Assyrian king Assurbanipal. Much of this material was shipped back to London, and the cuneiform tablets—shaped lumps of clay impressed by a stylus with characters composed of wedge-shaped

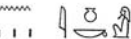
THE CREATION

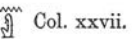
 *tef-nā*
 had I emitted
  *em Tefnut*
 Tefnut,¹
 *ān*
 not
  *kheper*
 existed
  *ki*
 another

24.  *āri-nef*
 who worked
  *henā-ā*
 with me.
  *senti-nā*
 I made a foundation
  *em ābt-ā*
 in my heart my own,
  *tches-ā*
 (or, by means of my own will)

 *kheper*
 [and] there came
  *āsht*
 the multitudes
  *kheperu*
 which came
  *nu kheperu*
 of the things which
  *kheperu*
 came into being

 *em*
 from out of
  *kheperu*
 the things which came
  *nu*
 into being
  *mesu*
 of
  *em*
 births, from out of

 *kheperu*
 the things which
  *nu*
 of
  *mesu-sen*
 their births.
  *ānuk pu*
 I, even I,
  *hat-ā*
 had union

 *em*
 with
  *khefā-ā*
 my clenched hand,
  *tataāt-nā*
 I joined myself in an
  *em*
 embrace

 *khaibit-ā*
 my shadow,
  *kher-nā*
 I poured seed
  *em re-ā*
 into my mouth
  *tches-ā*
 my own,

¹ I.e., I had not sent forth from my body the emanation which took the form of Shu, nor the moisture which took the form of Tefnut.

indentations—comprising the library that formed the nucleus of the British Museum's unsurpassed collection. (The Iraq Museum in Baghdad may possess more tablets, since it is the repository for all materials excavated in that country over the past many decades, but as the museum looting of spring 2003 made clear, they are far from fully catalogued, and the damage the collection may have sustained has not been fully assessed.) Because it was a royal library, the inventory was skewed toward items of lasting value—literary, scientific, and historical texts. Initially, and at least through the end of the nineteenth century, biblical concerns drove the new field of Assyriology. Sensational was the discovery of a myth of a Deluge in accord in several details with the story of Noah's Flood (Genesis 6–8); some of the Laws of Hammurabi (discovered 1902) paralleled nearly word for word portions of the legal texts in Exodus

20–22; and so on. This era peaked with the “Babel and Bible” controversy, when in a public lecture (also 1902) before the emperor of Germany, the Assyriologist Friedrich Delitzsch proclaimed that the heart of Christian theology could be read from a Babylonian cylinder seal.

Thereafter secular Assyriology gradually prevailed, and now it is the tens of thousands of mundane ephemeral documents—business records, personal letters, property transfers—uncovered over a century and a half of excavation that command the attention of most specialists. From these small clay tablets, which survived because they were imperishable so long as they did not get wet or were not crushed, detailed pictures of two millennia and more of civilizations can be reconstructed.

Hieroglyphs

Alongside the wealth of Mesopotamian materials, the yield of the next most important decipherment, of Egyptian hieroglyphs, seems downright paltry: carvings and paintings on monumental edifices and tombs, which reflect the concerns of their aristocratic patrons (mighty deeds and eternal salvation, basically), and such papyrus documents as were sufficiently highly valued to be immured in watertight tombs with their owners (intellectual property, again largely religious, but not much that was quotidian). The principal name here is Jean-François Champollion, from Grenoble, France, probably building on an insight of the Englishman Thomas Young. The Rosetta Stone alone did not suffice. The only king whose name is preserved in its hieroglyphic portion is Ptolemy, and though it was identifiable because it was enclosed in an oval cartouche, not until Cleopatra's name was found on an obelisk that had been taken to England was it possible to match up signs with sounds. But Champollion's true insights were the recognition that the hieroglyphs did in fact record sounds—were not mystical symbols—and that the clue to the ancient Egyptian language was the modern Coptic language still used in the liturgy of Egyptian Christians. His results were first published in 1822.

Again it was not until the turn of the twentieth century that the decipherment of Egyptian could really pay off for historians, when the American James Henry Breasted methodically explored the Nile Valley, copying, translating, and publishing every historical inscription he could find. But boasts of “mighty deeds” are not all that useful to historians, who appreciate greater detail and welcome opposing points of view. Despite a generation’s head start, knowledge of Egyptian political history still lags behind that of the many lands that used cuneiform, even though the native texts can be supplemented by annals in, primarily, Akkadian and Hittite.

Eastern Mediterranean Scripts

A twentieth-century decipherment whose importance to historians is perhaps on the level of the Parthian/Sasanian is that of the “Hittite” hieroglyphs (actually they record the related Luvian language) used in Anatolia for the millennium or so after 1500 BCE. After fifty years of false starts, it was put on a sound footing by I. J. Gelb and many others beginning in 1931.

Simultaneously a consonantal script akin to the familiar Phoenician, but written like Mesopotamian cuneiform by impressing wedges into clay, which had been discovered in 1929 at ancient Ugarit on the Syrian coast, was deciphered by three scholars working independently. The corpus to date (excavations continue) amounts to only a little over 1,000 tablets, but among them are diplomatic materials that illuminate conditions in the fourteenth century BCE in the Levant; of significantly greater interest are a number of texts that, like some of the early Mesopotamian materials, bear directly on the Bible. The Ugaritic language is nearly a direct ancestor of Hebrew, and the Canaanite gods and religious practices invoked and described—not to mention the poetic styles—correspond closely to many biblical passages that had previously been obscure.

The most recent decipherment of materials pertaining directly to Western civilization was that of Linear B, used on clay tablets at several sites on southern and western Aegean lands. Such tablets were first found at Knossos, Crete, beginning around 1900,

THE CREATION

āshesh-nā
I sent forth issue
 em Shu
in the form of Shu,
 tefnut-nā
I sent forth moisture

em Tāfnut
in the form of Tefnut.
 ān
Saith
 ātef-ā
my father
 Nu
Nu,
 satet-sen
“They make to be weak

maat-ā
my eye
 em-sa-sen
behind them, because
 tcher
for double periods
 henhenti
henti
 uau-sen
they proceeded

er-ā
from me
 em-khet
after
 kheper-ā
I became
 em neter
from god
 uā neter khemt
one gods three,

pu
that is
 er-ā
from out of
 kheper-nā
[and after] I came in earth
 em ta
into being
 pen
this.
 hāā
Were raised up

āref
therefore
 Shu
Shu
 Tāfnut
[and] Tefnut
 em
in
 enenu
the inert watery mass

un-sen
wherein they were,
 āmi - f
brought they to me
 ān-sen
my eye
 nā
nā
 maat-ā
maat-ā

em khet-sen
em khet-sen
 em-khet
After
 āref
therefore
 sam-nā
I had united
 āt-ā
my members

and subsequently at Mycenae and other mainland locations dating to the fifteenth century BCE. An obstacle to the decipherment was the assumption that they had to represent the language of a pre-Greek people; after much preliminary work, in 1952 Michael Ventris had the insight that the language of Linear B was not Etruscan-like, or anything even less well known, but an early form of Greek. Translation of the available materials proved disappointing: they are nothing but economic documents—probably nothing else was ever written down in the script, since the extensive and elaborately painted palace walls are devoid of inscriptions—and the main importance of the decipherment was to demonstrate the presence of Greeks in the region centuries earlier than previously assumed. (In the early 1870s, George Smith and Moriz Schmidt had deciphered the Cypriote syllabary, in which Greek was written on Cyprus about

THE CREATION



the same time the Greek alphabet was being devised: from the eighth century BCE. Materials are meager; one inscription apparently dating from centuries earlier suggests a connection with Linear B.)

The latest decipherment of all, finalized by Ignacio Adiego in the early 1990s, is of the alphabet of the long-known language called Carian, which was found both in Caria in southern Anatolia and throughout Egypt, where Carian mercenaries left graffiti during the second half of the first millennium BCE. Other Anatolian languages, written in alphabets very similar to the Greek alphabet, were known to be later relatives of Hittite and Luvian, but Carian did not seem to fit that pattern—so long as the letters were read as if they stood for the same sounds as Greek letters. Building on the insight of the British Egyptologist John Ray—that Carian spellings of names in Egyptian graffiti probably were to be read as the

corresponding names in the Egyptian versions—Adiego assigned different readings than the Greek to the letters and found that Carian was yet another Indo-European Anatolian language.

South and Inner Asia Scripts

Turning to the East, only three Asian scripts had been so thoroughly lost as to need decipherment. The first two, the Brahmi that is ancestral to a vast range of scripts in South and Southeast Asia, contemporary with India's King Ashoka in the mid-third century BCE, and its slightly earlier predecessor the Kharoshthi, succumbed to James Prinsep in 1837 and 1838 respectively. Brahmi opened up Ashoka's own decrees, which commended Buddhist principles to readers of a variety of Prakrits (early colloquial Indo-Aryan languages; it would not be usual to write Sanskrit for several centuries), and established the starting point for the immense variety of Indian inscriptive scripts (the later forms of which could still be read by the pandits anyway). Kharoshthi was devised for the Gandhari language in north-western India. But both scripts spread along the Silk Road, in both mundane texts and texts providing insight into the development of Buddhism; Brahmi came to be used for some Iranian languages, as well as the defunct Indo-European language family Tocharian.

The other Asian decipherment, of the Turkish or Orkhon runes by Vilhelm Thomsen in 1893, revealed a handful of inscriptions attesting to the presence of Turkic speakers in Mongolia in the eighth century CE, but little more. (The key to the script was an accompanying Chinese paraphrase.)

Scripts from Elsewhere

An important decipherment brings us to the only writing system created in the Western Hemisphere in antiquity: the Maya glyphs of ninth-century CE Mesoamerica (a number of similar-looking graphic complexes of earlier date are known, but they are understood little or not at all). The principal names

THE CREATION

 *tchetfet*  *nebt*  *kheper*  *nebt*  *ām-sen*
 creeping things all, [and] things which all [are] in them.
 came into being

 *mesu ān*  *Shu*  *Tāfnut* 5.  *henā*  *Nut*  *mesu ān*
 Give birth Shu [and] Tefnut [Seb] and Nut. Give birth

 *Seb Nut*  *Āsār*  *Ĥer Khent-ān-maa*  *Set*  *Āst*
 Seb and Nut to Osiris, Horus-Khent-ān-maati, Set, Isis,

 *Nebt-ĥet*  *em*  *khat*  *uā*  *em-sa uā*  *ām-sen*
 Nephthys from the womb, one after the other of them,

 *mes-sen*  *āsht-sen*  *em*  *ta*  *pen*
 they give birth [and] they multiply in earth this.

THE HISTORY OF THE CREATION OF THE GODS AND OF THE WORLD. VERSION B.

xxviii. 20.  *Shāt*  *ent*  *rekḥ*  *kheperu*  *nu*  *Rā*
 The Book of knowing the evolutions of Rā

 *sekḥer*  *Āpep*  *tcheṭtu*  *Neb-er-tcher*  *tcheṭ-f*
 [and] of over-throwing Āpep. The words of Neb-er-tcher. He says:—

are Yuri Knorosov and Floyd Lounsbury, Soviet and American, who published their results in 1952 and 1973 respectively. Maya monuments commemorate key dates in the lives of rulers of cities; what can so far be interpreted of them has shed light on chronology and ritual. Details continue to be worked out.

A few scripts can be read while their languages remain obscure: the Etruscan of ancient Italy, the Meroitic south of Egypt, the most ancient Iberian in Spain. There are three scripts with corpora large enough that decipherment remains a possibility, but with no texts likely to provide more than minimal economic data: Linear A of the ancient Aegean,

Proto-Elamite of Iran, and the Harappan script of the Indus Valley. Greater potential is offered by the variety of Mesoamerican scripts. But there is little hope that such ill-attested graphic systems as the Phaistos Disk (from Crete) or *rongorongo* (Easter Island) will ever be read—if they are even ways of writing language.

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Secondary-Products Revolution

The term *secondary-products revolution* grew out of the focus, from the 1960s to the 1980s, on whether innovations in farming practices arose in response to ecological opportunities and growing population densities, or whether growing social complexity and centralization made such innovations possible. Anthropological theorists in the twenty-first century take a balanced view to encompass both perspectives.

The most fundamental transformation in human conditions in the last ten thousand years was undoubtedly the beginning of farming, termed the “Neolithic Revolution” by the archaeologist Vere Gordon Childe (1892–1957). In several parts of the world, the cultivation of plants permitted unprecedented aggregations of population and the emergence of village communities. The most rapid development took place in the Fertile Crescent of western Asia, the arc of mountains running parallel to the eastern end of the Mediterranean and enclosing the basin drained by the Tigris and Euphrates rivers, which saw the emergence of urban life around 4000 BCE. This latter event, which Childe termed the “Urban Revolution,” was the second decisive turning point in human history and took place as a consequence of the growing scale of interconnections and concentration of resources.

While farming began with the cultivation of cereals and pulses (legumes), the rapid sequence of developments that followed was intimately associated with the keeping of domestic livestock. At first, domesticated animals (sheep, goat, cattle, and pigs) were kept simply as a captive supply of meat. Only later was their potential as draft animals and as

suppliers of products such as milk and meat explored and utilized. Early varieties of sheep, for instance, had hairy coats with only a small amount of wool, while primitive breeds of cattle would have yielded only small amounts of milk. By the time of the first urban communities, however, not only were cattle used for pulling wagons and plows, but new species such as the donkey had been domesticated as pack animals for moving supplies. Soon other species of animals joined the list, including horses and camels for transport, complementing the movement of goods by boats—some of which were now equipped with sails. New types of crop came into cultivation, notably tree crops such as olives, dates, and grapes, which could produce liquid commodities such as oil or sugar-rich liquids suitable for fermentation, paralleling the large-scale use of cow’s and sheep’s milk for ghee (clarified butter) and cheese. Moreover woolly breeds of sheep were in existence, supporting a textile industry that provided one of the major exports of the first cities. It is clear that just as human relationships had grown more complex and diverse, so had the human relationship with crops and livestock, with the domestication of new species and an appreciation not just of the calorific value of plants and animals but of their role as providers of secondary products. The patterns of consumption and technology that arose from these relationships (including alcohol, the plow, horses, wheels, and the wearing of woolen clothes) gave a distinctive character to the societies in which they were present, including the first literate civilizations, and had a major impact on the rest of the world. To signal this transformation in the nature of farming, and in particular the effects that the introduction of these innovations had on neighboring areas such

as Europe and the steppe belt (and, ultimately, even China and the Americas), a third “revolutionary” label in the style of Gordon Childe came into use: the secondary-products revolution of the Western Old World.

It is necessary in this inquiry to raise the question of cause and effect. Did innovations in farming practice arise spontaneously, or at least in response to ecological opportunities and growing population densities, and then make possible a growing scale of trade and more complex social arrangements? Or should the causal arrow be reversed, with growing social complexity and centralization making possible experimentation and the exploitation of innovations? Anthropological theorists of successive generations have given different answers, with the ecological emphasis of the 1960s to 1980s (during which time the term *secondary-products revolution* was formulated) giving way to viewpoints stressing social factors and human agency. A balanced view would encompass both perspectives, including on the one hand ecological possibilities and constraints, on the other the cultural dimension of consumption patterns and economic factors of capital formation and the scale of production. In reality there would have been complex interactions between the two, in a co-evolution of material and social relationships.

We may begin with the distinctive ecology of the region. It is no accident that this area, the meeting point of Africa and Eurasia, between the Mediterranean and the Indian Ocean, should so consistently have produced innovations in material and indeed spiritual life. Its diversity of habitats included highlands and lowlands, forests and deserts, steppes and inland seas, whose contrasts both supported distinctive floras and faunas and promoted specialization and exchange. Its long history of mixed farming encouraged experimentation and the emergence of distinctive local specialties. Recent evidence suggests that milk-products were in use by the sixth millennium BCE, perhaps as early as the use of pottery (which would have been important in making use of it), and a similar time depth may be implied for the emergence of woolly breeds of sheep in western Iran.

Cattle may have been used for treading grain or even to draw simple threshing sledges. Use of wild olives, grapes, and dates may be equally old in the areas where they grow naturally.

Nevertheless there is a perceptible horizon of change associated with the emergence of the first cities in the fourth millennium BCE. It is in this context that we may first observe the use of donkeys as pack animals and the employment of pairs of draft oxen to pull threshing sledges, plows, and solid-wheeled wagons, as well as the keeping of large numbers of wool-bearing sheep and dairy cattle. Some of these activities are reflected in the earliest uses of writing, in the form of pictographic symbols on clay tablets, recording the delivery of commodities at Mesopotamian temple centers. It seems likely that this new scale of production was instrumental in applying what had previously been small-scale regional specialties on an industrial scale to produce commodities, some of which were used as exports, and that these patterns of production and consumption were propagated throughout the region and beyond, stimulating further adaptations and experiments—for instance in the first use of the horse and the camel. From this viewpoint, there is a striking analogy (as Childe perceived) with the Industrial Revolution in eighteenth-century England and its accompanying agricultural revolution. It is in this context—as the agrarian dimension of the “Urban Revolution”—that the secondary-products revolution is best interpreted.

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See also Agricultural Societies; Biological Exchange; Domestication, Plant and Animal; Ecological Imperialism; Ecology, Cultural; Population Growth; Population and the Environment

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Senghor, Léopold

(1906–2001)

AFRICAN POLITICIAN

Léopold Sédar Senghor was a twentieth-century African poet and politician who lived in both Senegal and France. His work, which blended French, U.S., Caribbean, and African ideas during a time of historic change, helped shape African politics, literature, and the intellectual movement known as “Negritude.”

The African poet, politician, and intellectual Léopold Sédar Senghor was born in Joal, Senegal, as the fifth child of Basile Diogoye Senghor and Gnylane Bakhoun. According to family legend, at the moment of his birth he was possessed by a great spirit that had previously dwelled in a large baobab tree. The tree cracked and fell to the ground the moment he was born. Thus, people believed the spirit had found a new host. His family always referred to him by his birth name, “Sédar,” and he was seemingly destined for greatness. His first seven years were spent among the Serer, a matrilineal (tracing descent through the mother’s line) clan, and he grew up with his mother. His childhood presented him with the problem of competing family claims: those of his mother, his uncle, and his father. He quickly learned to recognize what was appropriate to each and to discipline his own wishes in order to live harmoniously. At age seven he was exposed to his father’s world of international trade and to the missionary and French education systems. He quickly grew to understand old and new Europe and Africa. He learned to balance the demands of multiple responsibilities and loyalties. This balance prepared him for his life as a French politician and an African leader.

His greatest disappointment perhaps fostered his ambition to become a poet and politician. When a

racist priest failed to recommend Senghor for seminary school he was crushed. But when given a second opportunity to attend seminary his response was, “I felt I would not there get the instruments necessary for the liberation of black Africa” (Vaillant 1990, 41). He continued his education in Dakar, Senegal, and in Paris, using poetry and prose as an outlet for his emerging views. His first poetry appeared during the late 1930s at the height of colonial power in Africa. Although he wrote his poetry in French, the language of the colonizer, Senghor gave homage to being black. His poetry celebrated the beauty of African women, the rhythms of the land, and the cultures of Africa, including music, art, poetry, religion, and politics. In his poetry he rejected the subjugated place that European civilization had defined for Africa and Africans. His poetry transcended African, European, and U.S. borders to be widely read and discussed.

As an African living in France, Senghor met Aimé Césaire, who would become his lifelong friend, and this meeting proved another turning point for him. Through Césaire, Senghor was introduced to the Caribbean diaspora in Paris, leading black intellectuals, the Harlem Renaissance, its ideas, music, and literature. Studying the advancement of U.S. blacks gave Senghor hope for Africans. As co-founder of the Negritude movement, Senghor sought to infuse African identity with dignity, pride, and honor. The essential objective of the movement was to define black as beautiful against a backdrop of worldwide racial injustice and discrimination. Using literature and poetry, Negritude attempted to rebuild the validity of African culture and to establish a positive image of black consciousness; Negritude held that a special social quality and humanness exist in blackness.

I have always taken care to put an idea or emotion behind my words. I have made it a habit to be suspicious of the mere music of words. • Léopold Senghor (1906–2001)

In 1948, after reaching success as a poet, publishing numerous books, and co-founding the cultural journal *Présence Africaine*, Senghor returned to Senegal and made the leap to politics fulltime. His life had prepared him well, and he was the consummate politician. He spoke publicly of broad idealistic goals, he was a shrewd deal maker, and he retained a sense of balance necessary for a Christian leader in a Muslim country. He promoted African socialism, accepting the German political philosopher Karl Marx's ideas that people should not be alienated from the products of their labor. He believed that people have natural rights and that people have to remain free agents and creators of culture. However, he rejected Marxism and Communism because he disagreed with the ideas that social complexities universally fit into the concept of class struggles and with Marxism's expressed denial of religion. He played an active role in events that led to the end of the French Empire in West Africa. In 1960 he was elected as the first president of the Independent Republic of Senegal; he served in this position for twenty years before retiring in 1981. As a poet, a co-founder of the Negritude movement, the first black member of the French Academy, and the

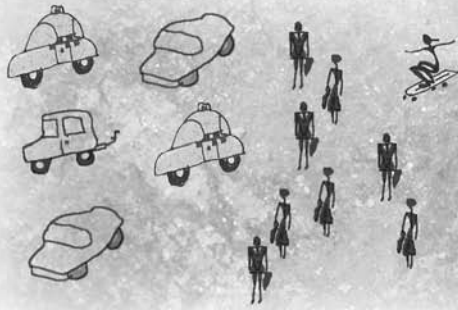
first president of independent Senegal, Léopold Sédar Senghor was devoted to bridging cultures.

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Sex and Sexuality

Sexual issues have been central to interactions within and between cultures. Religions and law codes from the earliest days sought to define, regulate, or prohibit sexual conduct, as did conquering peoples and states. Some cultures saw sexual relations in terms of rigid categories—homosexual/heterosexual, active/passive—but many cultures around the world had, and sometimes continue to have, more complex systems of gender and sexual classification.

The word *sexuality* is quite new, coming into English and most other Western languages in about 1800. Ancient Greek, medieval Latin, and many other early languages did not have specific words for “sex” or “sexual,” so that they did not define or classify ideas or behaviors in this way. Every human culture, however, has developed norms of sexual behavior, and provided positive consequences for following those norms, along with negative consequences for deviating from them. World history is often told as a story of interactions between cultures, along with the creation of traditions within cultures. Sexual issues have been central in both of these processes.

All world religions, and most indigenous belief systems, regulate sexual conduct and regard sexual behavior as part of a moral system. This began with early sacred texts, such as the Vedic hymns or the Hebrew Scriptures, and continues to today, when issues such as the ordination of openly gay clergy or the proper form of veiling for women divide religious groups more than differences of opinion about theological matters. Many religions set up different standards of sexual behavior for clergy and laypeople, with priests, monks, nuns, and other religious personnel adopting

permanent or temporary chastity as a sign of their holiness. Lay believers may also follow distinctive sexual rules while on religious pilgrimages or other periods of intense spiritual experience.

The earliest written legal codes, and every legal system since, include laws regarding sexual relationships and actions. Hammurabi’s Code of Laws, for example, promulgated in ancient Babylon in about 1750 BCE, sets out which sexual relationships will be considered marriage (and thus produce children who can inherit property), the definition and consequences of adultery and incest, the steps necessary for a divorce, and the consequences of various types of sexual assault. Contemporary national, state, and local law codes do the same.

Encounters between cultures may have taken the form of military campaigns or voyages of trade, but permanent contact often brought laws regulating sexual relationships between groups. The Manchus who conquered China in the seventeenth century and set up the Qing dynasty (1368–1644) prohibited intermarriage between Manchus and Han Chinese. At about the same time in colonial Virginia, according to a state statute of 1691, “English or other white” people were prohibited from marrying anyone who was “negroe, mulatto, or Indian.” Sexual relationships that ignored or defied those laws, particularly between men from the dominant group and women from the conquered or subordinate group, were common in situations of conquest, colonialism, or occupation, but these were generally not regarded as marriage.

Laws and norms regarding marriage and other sexual contacts work to keep groups distinct from one another, and also to preserve hierarchies within cultures, which depend on those in power marrying

people which that society defines as “like themselves.” In Tokugawa Japan (1600–1868), the four legal status groups—samurai, merchant, peasant, burakumin (an outcast minority group who usually did tasks regarded as unclean, such as handling the dead and butchering)—were prohibited from intermarrying, and in many countries of Europe, rulers (at least in theory) lost their claim to the throne if they married commoners. Along with explicit laws, sexual relations between groups have been restricted through the establishment and fostering of traditions and other forms of internalized mechanisms of control. If children are taught very early who is unthinkable as a marriage partner, and unattractive as a sexual partner, the preservation of cultural boundaries will not depend on laws or force alone. Societies sometimes allow elite men to marry or (more often) to have non-marital sexual relationships with non-elite women, though they place various restrictions on the children of those unions. The reverse case is much rarer, because the sexual activities of elite women are the most closely monitored in nearly all societies. Thus socially defined categories of difference such as race, nation, ethnicity, caste, noble status, and social class are maintained by sexual restrictions, for if they are not, those distinctions literally disappear. These restrictions are gendered, with women’s experience different from that of men.

Cultural Variation in Categories and Norms

Sexual issues are thus central to world history, and, like every other facet of human life, sexuality is also historically and culturally variable. Some cultures, including modern Western culture, categorize sexuality primarily in terms of “object choice”—if a person desires or has sexual relations with individuals regarded as of one’s own sex, that person is “homosexual”; if those individuals are of the opposite sex, the person is “heterosexual.” Other cultures categorized sexuality primarily in terms of the role a man took in sexual intercourse. If he inserted something—usually his penis—in another’s bodily orifice, he was taking the

superior “active” role, no matter what the gender of the other person, whose role was viewed as “passive,” and thus inferior.

Both sets of categorizations—homosexual and heterosexual, active and passive—are dichotomous, but many cultures around the world had, and sometimes continue to have, more complex systems of gender and sexual classification. In Australia, Siberia, North America, the Amazon region, Oceania, Central and South Asia, Alaska, and the Sudan, certain individuals were regarded as neither men nor women, or as both men and women, or in some other way as transcending dichotomous gender and sexual classifications. In some cases these individuals appear to have been physically hermaphroditic, either from birth or as the result of castration, though in others their distinctiveness or androgyny was purely cultural. In some cultures such individuals engaged in sexual activities or had permanent or temporary sexual relationships, while in others they did not.

The gender and sexuality of such individuals is complicated and highly variable, but they generally had special ceremonial or religious roles, just as celibate priests, monks, and nuns did and do in Christianity and Buddhism. In south Sulawesi (part of Indonesia), individuals termed *bissu* carried out special rituals thought to enhance and preserve the power and fertility of the rulers, which was conceptualized as “white blood,” a supernatural fluid that flowed in royal bodies. The *bissu* were linked to the androgynous creator deity; they could be women, but were more often men dressed in women’s clothing and performing women’s tasks. In northern India, divine androgyny is replicated in the human world by religious ascetics termed *hijra*, impotent or castrated men dedicated to the goddess Bahuchara Mata; they are regarded as having the power to grant fertility and so perform blessings at marriages and the births of male children. In Polynesian societies, *mahus* perform certain female-identified rituals, do women’s work, and have sex with men, as do the *xanith* in Oman, though this status is temporary and these men eventually marry women.

The best-known example of third-sex categorization is found among certain Native American groups.

We find that the sexual instinct, when disappointed and unappeased, frequently seeks and finds a substitute in religion. • **Richard von Krafft-Ebing (1840–1902)**

Europeans who first encountered them thought they were homosexuals and called them *berdaches*, from an Arabic word for male prostitute. This term can still be found in older scholarly literature, but the preferred term today is “two-spirit people.” Though Europeans focused on their sexuality, two-spirit people (who were usually, though not always, morphologically male) were distinguished from other men more by their clothing, work, and religious roles than their sexual activities. Among many groups two-spirit people are actually thought of as a third gender, so that sexual relations between a two-spirit person and a man may have not been understood as “same-sex” in any case. Two-spirit people were regarded as having both a male and female spirit, so they could mediate between the male and female, as well as the divine and human worlds.

Europeans’ categorization of two-spirit people as homosexual—the description actually used was “sodomite”—highlights a common issue in cultural encounters. Sexual categories and norms within a culture are often so deeply ingrained that they appear

“natural,” the result not of human decisions but of divine mandate or the “laws of nature.” The sexual practices of other cultures are thus made to fit into the existing scheme, and if they cannot, they are judged unnatural or deviant, and may serve as a justification for conquest. “Unnatural” sexual practices became a standard feature of groups other than one’s own, a sign that they were radically “other.” Ancient Athenians told about the Amazons, who lived free of men except for brief encounters for purposes of procreation. Early modern western Europeans saw Turks, especially the sultan and his nobles, as sexually lascivious, lolling around in a harem surrounded by beautiful young women. Nineteenth-century British officials regarded Bengali men, who were thinner and had less body hair than they did, as effeminate.

Premodern Sexuality

Despite the centrality of sexual issues to cultural traditions and encounters between groups, until the 1980s the study of sexuality was often trivialized, and



Artists’ depictions of characters in ancient Greek and Roman mythology have influenced (and been influenced by) perceptions of sexuality in Western culture. **Orazio Gentileschi, *Cupid and Psyche* (1628–1630).** Oil on canvas. Hermitage, St. Petersburg.

seen as a questionable or marginal area of scholarly inquiry. The history of sexuality has since become a booming academic field, but certain areas and periods have received more attention than others.

One of these is ancient Athens, which has traditionally been regarded as a foundation of Western culture and has left many sources, particularly about attitudes toward sexuality among the educated male elite. Plato and Aristotle, the two most important philosophers of ancient Athens, were both suspicious of the power of sexual passion, warning that it distracted men from reason and the search for knowledge. Both men praised a love that was intellectualized and nonsexual, the type of attachment still termed “platonic.” (Neither Plato nor Aristotle was concerned about what sex does to women except as this affects men.) Plato developed a dualistic view of both humans and the world, arguing that the unseen realm of ideas was far superior to the visible material world, and that the human mind or soul was trapped in a material body. This mind/body split was a gendered concept, with men associated more with the mind and women with the body. Women’s bodies were also viewed as more influenced by their sexual and reproductive organs than men’s; Plato described the womb as an “animal” that wandered freely around the body, causing physical and mental problems. (This is why the words *hysteria* and *hysterectomy* both have the same Greek root.) The mind/body split did not originate with Plato, but his acceptance and elaboration of it helped to make this concept an important part of Western philosophy. In Aristotle the mind/body split is reflected in the process of procreation (what he called “generation”), with the male providing the “active principle” and the female simply the “material.”

In classical Athens, a hierarchical sexual and tutorial relationship with an older man—who was most likely married—was part of the expected training in adulthood for adolescent citizens. (Only men could be citizens in Athens.) The older man was the “active,” or penetrating partner, while the younger took the “passive” role. These relations between adolescent and adult men were celebrated in literature and art, in part because the Athenians regarded perfection

as possible only in the male. The perfect body was that of the young male, and perfect love that between an adolescent and an older man, not that between a man and an imperfect woman; this love was supposed to become intellectualized and “platonic” once the adolescent became an adult. How often actual sexual relations approached the ideal in Athens is very difficult to say, as most sources are prescriptive, idealized, or fictional.

In ancient China as well, the idea of a lifelong sexual identity based on the gender of one’s sexual partners was not well established, though at certain times there were male homosexual subcultures in which men participated throughout their lives. The best studied of these is one which developed among imperial officials, intellectuals, and actors in the Song dynasty (960–1279), and male homosexuality was not prohibited until the beginning of the Qing dynasty in 1644.

Sexual activity that could lead to children was clearly a matter of state concern, however. During the Neo-Confucian movement of the Song dynasty, educated officials put great emphasis on the disruptive power of heterosexual attraction, viewing it as so strong that individuals alone could not control it; walls, laws, and strong social sanctions were needed to keep men and women apart and to preserve order within the family. In many parts of China, women of the middle and upper classes were increasingly secluded, and even peasant houses were walled; boys and girls were cheap to hire as servants for tasks that needed to be done outside the walls. Female seclusion was also accomplished through foot-binding, a practice whose origins are obscure and debated, for contemporary official documents rarely discuss it. Foot binding does appear frequently in pornography, however, where the pointed shape that bound feet assumed was compared to lotus blossoms—an erotically charged image—and where the hobbled walk of women with bound feet was described as increasing their sexual prowess by lubricating their genitals. That sexual prowess was to be limited to the men on whom they were dependent, however, for unbound feet were seen as a sign of sexual freedom.



A third well-studied area is early modern colonialism. European accounts of exploration and travel almost always discuss the scanty clothing of indigenous peoples, which was viewed as a sign of their uncontrolled sexuality. Hot climate—which we would probably view as the main influence on clothing choice—was itself regarded as leading to greater sexual drive and lower inhibitions. By the eighteenth century, leading European thinkers such as Adam Smith and David Hume divided the world into three climatic/sexual zones: torrid, temperate, and frigid. (Words that still retain their double climatic/sexual meaning.) They—and many other European writers and statesmen—worried about the effects of tropical climates on the morals as well as the health of soldiers and officials, and devised various schemes to keep Europeans sent to imperial posts from fully “going native,” adopting indigenous dress and mores. They also linked this climatic/sexual schema with the advancement of civilization; in the torrid zones, heat made people lethargic as well as lascivious, whereas a temperate climate (like that of Britain) encouraged productivity and discipline along with sexual restraint and respect for women.

The aspect of “going native” that most concerned colonial authorities was, not surprisingly, engaging in sexual relations with indigenous people; as noted above, colonial powers all regulated such encounters. Indigenous peoples were often feminized, described or portrayed visually as weak and passive in contrast to the virile and masculine conquerors, or they were hypersexualized, regarded as animalistic and voracious (or sometimes both). Racial hierarchies became linked with those of sexual virtue, especially for women, with white women representing purity and nonwhite women lasciviousness. Dispelling such stereotypes was extremely difficult and took great effort; African American women in the early-twentieth-century United States, for example, took great care to hide the sexual and sensual aspects of their lives and emphasize respectability in what the historian Darlene Clark Hine (1998) has called a “culture of dissemblance.”

In the colonial world, both sexual and racial categories were viewed as permanent moral classifications

supported by unchanging religious teachings that determined what was “natural” and what was “unnatural.” Thus same-sex relations were defined as a “crime against nature,” and often tried in church courts, along with other sexual crimes such as adultery or fornication. This link between natural and godly began to lessen in intensity during the eighteenth century, but the importance of “nature” in setting boundaries only intensified.

Modern Sexuality

Many scholars see several developments from the late eighteenth through the early twentieth century as creating a distinctively different “modern” sexuality, though most of this research has focused on the West. The most important of these was a change in the basic paradigm of sexuality from religion to science. Church courts in Europe and the European colonies heard fewer and fewer morals cases, as aberrant sexual desires and actions were no longer viewed as sin, but as “degeneracy” or “perversion.” They were still “unnatural,” but any correction or prevention was to be done by scientifically trained professionals, not pastors or priests. The most important professionals in this new scientific understanding of sexuality were medical doctors. Sex was increasingly regarded as an aspect of health, with doctors determining what was “normal” and “abnormal” based on their understanding of the natural world, not divine sanction.

Western governments sought to promote a healthy society as a way of building up national strength, and anything that detracted from this became a matter of official and often public concern. Masturbation, prostitution, hysteria, pornography, and venereal disease all came to be viewed as sexual issues and health problems, as did what were regarded as more extreme perversions, such as sadism, fetishism, masochism, exhibitionism, nymphomania, and “inversion,” a common nineteenth-century term for same-sex desire. These various sexual disorders were labeled and identified in the German physician and neurologist Richard von Krafft-Ebing’s landmark book *Psychopathia sexualis* (1886), the

first important study in the new medical specialty of sexology.

Masturbation was a matter of concern especially in boys and men; too early or too frequent spilling of sperm might cause them to become weak and feeble, incapable of being good soldiers or workers. A British soldier in Kenya, Robert Baden-Powell, founded the Boy Scouts in 1908 explicitly to teach British boys what he regarded as the right sort of manly virtues and keep them from masturbation, effeminacy, physical weakness, and homosexuality. These were traits he regarded as particularly common among the non-white subjects of the British Empire, and also among the residents of British industrial cities. If they were not counteracted with a vigorous program of physical training and outdoor life, Baden-Powell and numerous other writers, physicians, politicians, and church leaders predicted an inevitable “race degeneration” or even “race suicide.”

Viewing pornography might also lead to weakness, for the new scientific view of sexuality was very concerned with sexual thoughts and desires as well as actions. Pornographic literature had made up a significant share of printed works in Europe since the development of the printing press in the mid-fifteenth century, but was not legally banned because of its sexual content until the mid-nineteenth century with laws such as the Obscene Publications Act passed by the British Parliament in 1857.

Prostitution was also regarded primarily as a threat to men's, and thus the nation's, health. Prostitutes in Europe and the British Empire, or women even suspected of selling sex for money, were required to submit to examinations for venereal disease, though their customers were not, so efforts to control the spread of disease were ineffectual. Prostitution was generally viewed as a necessary evil, a regrettable concession to the strong sexual needs of lower-class men, certainly preferable to masturbation or same-sex relationships. Commentators in this era—the high point of the industrial revolution—often used industrial or mechanical metaphors when talking about sex, describing sexual drives as surging through the body in the same way steam did through engines or

water through pipes. This “hydraulic model” of sex led them to worry about what would happen to men who did not have an outlet; would such “repression” cause them to explode the same way that pipes or engines would if they were blocked?

As they worried about repression and its consequences, sexologists frequently turned their attention to same-sex desire, initially labeling this “inversion,” though eventually the word “homosexuality,” devised in 1869 by the Hungarian jurist K. M. Benkert, became the common term. During the nineteenth century, individuals had often expressed same-sex desire in very passionate terms, but these were generally regarded as “romantic friendships,” expected as a part of growing up and, especially in women, not a sign of deviancy even if they continued throughout an individual's life. The Young Men's Christian Association (YMCA), for example, began in England in 1848 as a Christian men's movement in which young unmarried men were expected to strengthen their character and morality through passionate attachments to one another, a union of souls that would lead to greater love for God. Historians debate whether such friendships should be labeled “homosexual” because this was not yet a category in people's minds, but the medicalization of same-sex desire as a form of sexual deviancy changed attitudes toward them, and intimacy between girls or between boys was increasingly regarded with distrust. By the 1920s, the YMCA's official statements condemned same-sex attraction and espoused a “muscular Christianity,” centered on basketball (invented at a YMCA), swimming, and other sports, and on “normal” heterosexual relationships.

In the early twentieth century, same-sex desire may have been expressed less openly in Europe and North America than it had been earlier, but it also became something that more frequently linked individuals in homosexual subcultures, a matter of identity rather than simply actions. Historians have discovered homosexual subcultures and communities—with special styles of dress, behavior, slang terms, and meeting places—developing among men in European cities as early as the seventeenth

We're all well aware of the male homosexual problem in this country, which is of course minor, but to our certain knowledge there is not one lesbian in England. • **Lord Joseph Chamberlain of England (1836–1914)**

century, but these became more common in the twentieth century, and more often involved women as well as men.

Heterosexuality also became a matter of identity in the early twentieth century, of a permanent “sexual orientation” that eventually became a legal as well as medical term and a central part of modern Western notions of the self. The word “heterosexual” was originally used by sexologists to describe individuals of different sexes who regularly engaged in non-procreative sex simply for fun; it was thus a type of perversion, though a mild one. Increasingly the term came to be used for those who were sexually attracted to the “opposite” sex, with the proper development of this attraction a matter of physical and psychological health. “Normal” heterosexual development was also determined by gender, most famously in the ideas of the Austrian psychiatrist Sigmund Freud (1856–1939). Freud developed the notion that human behavior is shaped to a great extent by unresolved sexual conflicts which begin in infancy; girls suffered primarily from penis envy (the recognition that they are lacking something their brothers have) and boys from an Oedipus complex (the desire to kill their fathers so that they can possess their mothers). Freud’s ideas were vigorously attacked, sometimes by his former associates, but they had a wide impact in fields far beyond psychology such as literature, art, and education.

These scientific and medical studies of sexual attitudes and behavior led to two somewhat contradictory ideas about sexuality. On the one hand, one’s choice of sexual partners or sexual behavior was increasingly regarded as a reflection of a permanent orientation, a “sexual identity” as a homosexual or heterosexual. On the other hand, homosexuality and other types of “deviant” sexuality were defined as physical or psychological illnesses, curable through drugs, surgery, or psychoanalytical analysis. Popular and learned books advised readers about how to achieve a “healthy” sex life, and efforts were made to prevent sexual deviance as well as cure it.

Contradictory ideas and differences of opinion about sexuality and its relation to gender continued

throughout the twentieth century. The first two editions of the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders (DSM) listed homosexuality as a psychiatric disorder, but in the 1970s it was removed from this list. Some medical researchers investigated a “gay” gene and variations in brain structure, while others criticized their findings as logically and methodologically flawed, shaped by notions of gender that continued to view homosexual men as in some ways feminized. (Most research on homosexuality in the twentieth century, like most medical research in general, focused on men.) At the same time that discrimination on the basis of sexual orientation was prohibited in many areas—largely as a result of the gay rights movement that began in the 1970s—many people (including some gay rights activists) argued that sexual orientation, sexual identity, and perhaps even gender identity were completely socially constructed and could or should be changed, adapted, and blended at will. They asserted that “sexual orientation” and “gender identity” had indeed been part of “modern” ideas about sexuality, but in a postmodern world such concepts were just as outmoded as Plato’s “wandering womb.” They celebrated both historical and contemporary examples of two-spirit people and other forms of nondichotomous gender and sexual categories.

Both “modern” and what might be called “post-modern” sexuality are often seen as Western developments, with groups in other parts of the world regarding these as yet another example of cultural imperialism. In some areas, however, individuals and groups have blended traditional indigenous third-gender categories and more recent forms of homosexual or transsexual identity, asserting that toleration or even celebration of those with distinctive sexuality has roots in their own cultures and is not simply a Western import. At the same time, fundamentalists in many religious traditions, including Christianity, Judaism, Hinduism, and Islam, oppose alternatives to heterosexual marriage, and support the expansion of existing laws regulating sexual relationships. It is clear that sexual issues have not

lost their power as points of conflict both within and among cultures.

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See also Gay and Lesbian Rights Movement

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Shaka Zulu

(1787–1828) ZULU KING

Shaka Zulu (1787–1828) created an African kingdom that stood as an influential military and economic power at a time when European nations were encroaching on African sovereignty. Shaka's instincts and innovative leadership skills helped to build the mightiest kingdom in sub-Saharan Africa in the early nineteenth century.

King Shaka Zulu increased the Zulu nation to nearly three million subjects and the Zulu kingdom to thousands of square kilometers in the early nineteenth century. He actively participated in the emerging global economy through trade with Europeans, and his military genius changed the art of African warfare.

Shaka was conceived during an affair between his mother, Nandi, who was a Langeni woman, and Senzangakona, chief of a minor Zulu clan. With Shaka's birth eminent, his mother was forced to become Senzangakona's third wife. The union was turbulent, and Nandi and her son were never fully accepted among the Zulu. Nandi was sent back to her people with her son and an infant daughter. Her return to the Langeni forced repayment of the bride price, which brought shame upon Nandi and her children. They were ostracized, and Shaka was frequently teased. When Shaka was fifteen his mother found a home within the Mthethwa confederacy. This confederacy was formed early in the eighteenth century when the chiefs of several small Nguni clans living in the region between the Thukela (Tugela) and Phongolo (Pongola) rivers (now in KwaZulu-Natal), joined forces under Chief Dingiswayo. It was here that Shaka grew into a strong, self-confident leader.

At the age of twenty-three he was drafted by Chief Dingiswayo into the Mthethwa's best regiment. In the military Shaka found his passion and place in life. He quickly developed into a consummate military strategist. In developing his war strategy he designed new types of weapons, as well as improved fighting tactics. He replaced the long-handled throwing spear with a short-handled, broad blade stabbing assegai. He increased the length of the rawhide shield to fully cover a warrior's body. He implemented an attack formation that allowed his army to advance on an enemy from the middle while simultaneously flanking them to attack from multiple sides. The enhanced shields enabled warriors to block the throwing spears of their opponents and get close enough to stab them. Shaka insisted on conditioning; he trained with his men until they could run barefoot 80 kilometers a day. This gave his army advantages in range and speed of attack. He also introduced the concept of unlimited war: annihilation of enemies to prevent reprisal. Previously warfare consisted of ritualistic displays of fierceness, bravery, and then providing forgiveness to the enemy upon defeat. Shaka instituted an aggressive battle style and insisted on complete submission or genocide upon victory.

Shaka was an innovative leader. He formed age-specific regiments that lived in permanent military settlements and remained on duty for years. Girls of marriageable age were formed into female regiments in these towns. These women provided support and agricultural labor. When a regiment had served its time or was particularly brave and victorious they were retired from service and allowed to marry girls from the female regiment. Shaka himself never married. He

Strike an enemy once and for all. Let him cease to exist as a tribe or he will fly in your throat again. • **Shaka Zulu (c. 1787–1828)**



In this 1824 portrait of Shaka Zulu, drawn from life, he stands with the long throwing assegai and the heavy shield.

refused to produce an heir that might one day challenge him for power. When not fighting, the regiments hunted elephants and hippopotamus for Shaka's ivory trade with the Portuguese at Delagoa Bay. Shaka also traded with the English and Dutch, and he granted them land near Natal to promote trade.

As a Mthethwa warrior, Shaka returned to his mother's people and killed those who had tormented him and ostracized his mother when he was young. He assumed control of the Zulu clan with Chief

Dingiswayo's help. Furthermore, when Dingiswayo died in 1818, Shaka became leader of the Mthethwa confederacy. He immediately began to spread his empire; he conquered new lands, created a massive army, and incorporated more and more neighboring polities into the Zulu nation. The wars wrought by Shaka, his generals, and the people he displaced eventually led to massive migration and lethal consequences. The people he attacked were displaced; in their search for new homes they attacked and displaced others. No clan between present-day South Africa and Tanzania was spared this misery. A drought occurring at the same time made cultivation difficult, and people were often displaced before they could reap what they had sown. People wandered from place to place looking for a home. This might be considered the first refugee crisis in southern Africa.

Shaka suffered an emotional breakdown when his mother died in 1827. He went into mourning for a year and insisted his people do likewise, killing thousands for failure to demonstrate adequate sorrow at the queen mother's death. In 1828 Shaka was stabbed to death by his half brother Dingane. But the state he had created resisted European colonialism for fifty years after his death, and the Zulu people remain a recognizable political force in South Africa today.

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See also British Empire

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Shamanism

Shamanism is an ideology and a set of techniques or rituals that deal with communication among spirits. Shamanistic practices are attached to a system of beliefs, and therefore they are always considered in the context of the religion or society in which they are found. The shaman, the person who performs the rituals, often serves as a healer, diviner, clairvoyant, or a possessor of magic or spiritual power.

Shamanism is a distinctive complex of social roles, psychospiritual activities, and religio-ecological ideation embodied in the person of a ritual specialist, called a shaman. The term *shaman* comes from the Siberian Tungus (Evenk) word *aman* via Russian sources. Shamanism has been intensely studied in Eurasia and the Americas, and extends from the Saami (Lapps) of Finland to the Yamana (Yaghan) of Tierra del Fuego at the southern tip of South America. Scholars have also identified shamanism in Aboriginal Australia, Southeast Asia, and Oceania and more sparsely in Africa, where spirit possession and spirit mediumship seem to be more prevalent.

There are many different approaches to the study of shamanism, including anthropology, archaeology, comparative religion, ethnomedicine, history, linguistics, prehistory, psychology, and folklore studies.

History and Distribution

Some scholars claim shamanism displays an ancient heritage discernible in the cave paintings of Paleolithic (foraging) era and hunting cultures found in southern France and northern Spain. For example, the upper Paleolithic Les Trois Frères cave (c. 14,000

BCE) contains the *Sorcerer of Les Trois Frères*, a famous black-painted figure overlooking a gallery of engraved game animals, and interpreted to be a master of animals, a shaman.

Siberia is the locus classicus of shamanism and there is considerable variation from the northwestern Saami (Lapp) shamanism, known only through historical sources first written down in 1180 CE, through to the Turkic Central Asian language group (e.g., Yakut [Sakha], Tuvins, and Khakass), the Mongolian languages (e.g., Mongolian and Buryat), the Tungusic group (e.g., Evenki [Tungus], Even, Manchu), the Paleo-Asiatic (e.g., Chukchi and Koryak) group, and the Eskimo-Aleut group. Shamanism is also found in southern Eurasia in Nepal and India, and throughout Southeast Asia. The Northern and Southern Asian shamanism of Peninsular Malaysia (Bateg, Temoq, Semelai, and Semaq Bri) is remarkably similar to forms found throughout Siberia. Polynesian mythology also amply attests to shamanic themes and cosmological images.

The distribution of shamanism throughout the Americas also suggests not only great antiquity but also Eurasian origins. Shamanism was brought in several waves to the Americas by hunting peoples who crossed the Bering land bridge between Siberia and Alaska. In the far south of Chilean Patagonia artifacts dating between 11,000 and 8000 BCE have been excavated by archaeologists at Fell's Cave. Here too we find shamanism, extinguished by the genocidal wars of the late nineteenth and early twentieth century, among guanaco hunting Ona (Selk'nam) and the marine hunting and littoral foraging Yamana (Yaghan). Farther north in central Chile we find Mapuche shamanism displaying an almost Siberian



Having attracted the disease-spirit into the spirit boat, the Temoq shaman Pak Loong bin Gudam prepares to send the disease-spirit back to its celestial home.

character. Although there is no evidence of cultural continuity between the original settlers circa 10,000 BCE and historically known cultures in this region, the pervasiveness of shamanism throughout the cultures of North and South America certainly indicates a very early introduction. Perhaps the penultimate migration into North America is revealed by linguistic evidence linking the Yeniseian family of languages spoken today only by the Ket of central Siberia with the Na-Dene languages of North America, two culture areas steeped in shamanism. This recent finding further deepens our understanding of the circumpolar

or circumboreal cultural continuum long recognized by scholars.

Shamans and the Shamanic Complex

The shaman is a visionary, healer, singer and poet, ecstatic soul traveler, psychopomp (capable of escorting the soul of the deceased to the domain of the dead), a mediator between his or her social group and the spirit world, a diviner, and a sacrificer. Shamans are specialists in the life and fate of the soul, the travails of their own soul during initiation, and their patient's afflicted soul in a ritual healing performance. These features constitute a complex that frequently lies at the psychospiritual core of a society, and can thus be identified as the religion of many Siberian and circumpolar peoples, as well as the religion of peninsular Malaysia's Temoq, Semelai, and Semaq Bri Orang Asli ("aboriginal") cultures. However, in many other cultures shamanism is just one dimension of a more inclusive religious worldview and in this instance may be more appropriately identified as a belief subsystem as among the Mapuche of Chile and the Uzbeks of Central Asia.

The shaman is a person who is able to break through the planes of ordinary day-to-day life by acquiring a deep and profound knowledge of the supramundane world. Shamanism has been defined as a "technique of ecstasy" involving the magical flight of the shaman's soul to the sky or to the underworld (Eliade 1964, 4ff.). The shaman is empowered to enter into this world through the acquisition of visionary capabilities, most usually during initiation. These powers are renewed and strengthened with every ritual performance directed toward healing, divination, sacrifice, and various other rites important to the welfare of the group. The powers are embodied in the shaman's cosmographic experience and in the control of familiar and guardian spirits who provide knowledge and direction, and protect the shaman's highly labile and vulnerable soul during a visionary rite. The shaman's altered state of consciousness ranges from intense ecstasy as with some Siberian shamans, to quiet reverie as the Malaysian Temoq

shaman contemplates the overpowering beauty of the visionary world. At the age of nine the Lakota holy man Black Elk, during an episode of acute illness, gained his visionary powers by ascending into the cloud-mountain abode of the powerful Grandfathers, who he realized were the “Powers of the World,” the powers of the four directions, the heavens, and the earth below.

Shamanic séances are almost always performed at night, and in many shamanistic societies nighttime is not the absence of daylight, but a qualitatively different type of reality. In almost all societies the shaman is a nocturnal being, a specialist in the existential realities that emerge after nightfall. For the Temoq even seasonality is suspended at night, and the identities that differentiate the diurnal mundane world transform into another dimension at sunset.

Initiation into the shamanic vocation takes many forms throughout the world. In some Siberian societies, the shaman involuntarily experiences a frightening dismemberment by demons or evil spirits. The shaman’s reconstitution into a new, spiritually reborn body empowers the shaman to perform supernormal feats. The death and resurrection theme also occurs in the Americas. In contrast, the Temoq shaman knows he is chosen when he has a waking daylight encounter with the spirit of a beautiful young woman dressed in red. The Temoq mountain journey shaman is then initiated by a master shaman who, during a nighttime ritual performance, places a *cermin*, a “visionary mirror”, into the unawakened third eye of the initiand, thus giving the new shaman’s soul the power to see and visit all the cosmic regions necessary for healing, and for maintaining the fertility and fecundity of the tropical rain forest.

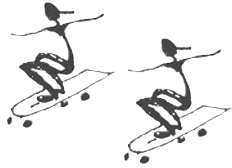
Throughout tropical South America tobacco intoxication and hallucinogens, such as the *Banisteriopsis caapi* plant (ayahuasca), are used to engender visionary experiences. Although only introduced several centuries ago, tobacco is also used by Siberians and some Temoq shamans to induce an altered state of consciousness. The induction of ecstatic trance states by ingesting hallucinogenic mushrooms is also widespread in Siberia.



A ritual assistant daubs a rubber tiger figure, the spirit of which will accompany a Temoq shaman to the edge of world.

Drumming is used throughout Eurasia and in many cultures of the Americas to embrace the suprasensible world of the spirits. In Temoq shamanism intense drumming over several hours, as the author has experienced, induces a soporific state of consciousness, a drowsy state experienced by ritual participants as the temporary loss of their astral body as it travels with the shaman’s celestial entourage.

The *raison d’être* of nearly all shamans is healing. The shaman uses his or her visionary powers to either search out the location of a lost soul or to extract disease-spirits from the body of the afflicted. The retrieval of a lost soul implies that either the shaman or



the shaman's spirit allies journey out into the upper or lower worlds. Although the shaman's expertise is at the center of the therapeutic field, healing is almost always a communal event and often an intense social drama.

Shamans are preeminently singers and poets. Whether ecstatic cries of a Siberian Sakha shaman, the long spirit-journey epics of Malaysian Semaq Bri, Semelai, and Temoq shamans, or the low murmuring of Yamana shamans in Tierra del Fuego, almost all shamans vocally express their experience through singing. In some societies such as the Temoq and the Siona of South America, the song is the primary expression of the shaman's power. Indeed, for the Temoq, the term "song" is a misnomer, for only powerless shamans sing "songs," while powerful shamans give fresh and clear voice to visionary experience. The Temoq shaman's singing is replete with the calls of animal and bird familiar and guardian spirits. A beautiful example is the Tuvan shaman's song in *Shu-De*.

The Shamanic Worldview

Shamanic activity is couched within a cosmological structure that facilitates the movement of the shaman's soul or spirit from the middle world of human society and the natural world to the upper and lower worlds inhabited by ancestors, guardian and familiar spirits, deities, animal masters, the land of the dead, and frequently the soul of a patient. A multi-tiered world, often three-tiered, is integrated by an axis mundi—a vertical structure lying at the center of the world and imaged as a tree, a mountain, a pillar, a rainbow, or even a river that flows from the upper world, through the middle world of day-to-day life, to the lower world of the dead as with the hunting and reindeer-herding Evenki of the Siberian taiga.

In a ritual performance the shamanic cosmos is symbolically represented in the structure and function of the shaman's venue and in the shaman's costume and musical instrument, such as a drum or rattle. This ritual microcosmos, projected to the "center of the world," embodies core symbolic forms that,

variously empowered, enable the shaman to engage spirits and supernatural beings and visit the far-off places necessary for the success of the ritual.

The shaman's costume itself constitutes a religious hierophany and cosmography; it discloses not only a sacred presence but also cosmic symbols and metaphysical itineraries. Properly studied, it reveals the system of shamanism as clearly as do the shamanic myths and techniques. (Eliade 1964, 145)

The Evenki (Tungus) shaman's *kamlanye* performance demonstrates the relation between their shamanic worldview and the structure of the ritual venue. The tepee-shaped tent is either a modified domestic tent or one specially constructed by clan kinsmen several days before the performance. The ordinary tent is used for rites directed at finding lost reindeer or foretelling the future and as a preparatory venue for major rites where the shaman fasts, smokes heavily, and encourages visionary dreams.

Major *kamlanye* performances were held for guiding the soul of a dead person to the underworld, for feeding ancestral souls, and for the expulsion of disease-spirits. The ritual tent, containing a larch sapling positioned next to the hearth and emerging through the smoke hole, is surrounded by a small fenced-off enclosure containing platforms and carvings representing the structure of the world and designed to assist the journey of the shaman's animal-double spirit—his *khargu*—to the lower world. From inside the tent the east-facing shaman sees a double row of wooden knives and bear spears, and wooden images of salmon and pike familiar and guardian spirits. The shaman's drum (made of larch wood) and drumstick are often imaged as the canoe and paddle by which the shaman travels the shamanistic clan river. In front of the tent entrance is the *darpe*, a gallery of fresh larch saplings with roots skyward, and carved shamanic figures representing the upper world. To the west of the tent the *onang* structure, representing the lower world of the dead, constructed from dead fallen timbers, displays carved larch trees with roots facing downward. In the upper world larch trees grow downward from the soil of the sky vault, whereas

they grow upward in the lower world. The larch tree protruding through the smoke vent signifies the world tree integrating the three levels or planes of existence. During a performance the shaman's spirit climbs the cosmic larch tree in his ascent to the upper world.

Similarly, while singing and drumming a Chilean Mapuche *machi* or shaman climbs her *rewe*, a large pole often displaying carvings of her familiar spirits, during a *machitan* or healing rite. Aboriginal shamans in central Australia climb a pole to signify ascent, and in Malaysia the Temoq shaman, traveling the rainbow shadow snake, signifies his ascent by dancing over the patient with a model of the world tree bedecked with miniature birds and fruit. The vision of Black Elk the Lakota shaman also strongly embodied the image of a life-giving world tree intimately connected to the welfare of his people.

Shamanism Today

Siberian shamans were persecuted and imprisoned and thousands died during the Soviet era. Since the establishment of the Russian Federation shamanism has shown a remarkable resurgence along with re-emergent ethnicities in such places as Tuva. A clinic has been opened by shamans in Kyzyl, the capital of the Tuvan Republic, south Russia, where shamanism and Buddhism amicably coexist. Folk groups travel with shamanically inspired repertoires to international venues, and many documentaries have been made on shamanism over the past few years. Native American shamans travel to Mongolia to deepen their calling under the tutelage of Mongolian shamans. In other places shamanism is under pressure not only from missionary activities, but also from globalization, which is seriously threatening the languages and cultures of minority peoples.

In the West, shamanism has captured the imagination of many, and this new form, called neoshamanism, attempts to selectively integrate aspects of indigenous shamanism with a range of concerns from New Age spirituality to transpersonal psychology. Neoshamanism aspires to go beyond modernity by grounding identity within a more inclusive spiritual,

psychological, and ecological vision of personal, social, and planetary well-being.

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See also Animism

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Sheep and Goats

The first herd animals to be domesticated, originally about 8000 BCE in Anatolia and Iraq, were sheep and goats. They became the focus of entire civilizations, since pastoral people would devote their lives to tending the flocks. The metaphoric significance of both animals in the Bible and Greek myth—Jesus as the Lamb of God; Dionysus fleeing to Egypt as a goat—reflects somewhat their animal natures: sheep as benign, goats as rambunctious.

The ancestor of domestic sheep was the mouflon (*Ovis orientalis*), which may still be found wild in mountainous regions of Sardinia, Cyprus, and other islands in the Mediterranean or near the Atlantic coast. These sheep, however, may well be feral rather than wild varieties, which escaped human control in remote times. Several varieties of sheep, however, have never been domesticated, primarily because they cannot easily be herded. Among these is the American bighorn sheep (*Ovis canadensis*) found in the Rocky Mountains, which, though untamed, provides wool used by the Navajo and other Native American tribes in intricately woven and brightly colored blankets.

Sheep—together with goats (*Capra aegargus*), their close relatives—became the first herd animals to be domesticated, originally in Anatolia and Iraq, by about 8000 BCE. The domestication of sheep was a gradual process that probably grew out of efforts of hunters to manipulate stampeding herds. By the third millennium BCE, captive herds had become common throughout the Near East, central Europe, and western Asia. These animals became the focus of entire

civilizations, since pastoral people would center their entire lives on the task of tending flocks. Tribes would, for example, be inhibited from creating permanent settlements, since it was necessary to move on when vegetation in one area was exhausted.

As human population increased and people were compelled to abandon the lives of hunter-gatherers, a rivalry between herders and agriculturalists became more intense. This rivalry is commemorated in the biblical story of brothers Abel and Cain. Abel was a shepherd and offered a sacrifice of a sheep to Yahweh (God), whereas Cain tilled the soil and offered up fruits and vegetables. When Yahweh looked with favor only on the sacrifice of Abel, Cain became angry and killed his brother (Genesis 4).



Horned Dorset sheep interact with other farm animals at Philipsburg Manor, a reconstructed 1750 home in Sleepy Hollow, New York. Photo by Boria Sax.



Black-face Scottish sheep casually share the road with cars and pedestrians on the Isle of Harris in the Outer Hebrides, where they are allowed to stroll with almost complete freedom. Photo by Linda Sax.

Social Organization

One consequence of the domestication of animals for food was that it enabled people to store up considerable amounts of wealth, which led to increased social differentiation. Herds of animals are often mentioned in the Old Testament of the Bible and other books of the ancient world as a measure of riches. The earliest coins, from Lydia in the seventh century BCE, were stamped with pictures of food animals, and their value was measured in livestock.

The Hebrews were a nation of herders, especially of sheep, and important biblical figures, including Abraham, Jacob, Moses, and David, were shepherds. The relationship of a shepherd to his flock provides an important metaphor for benevolent leadership in many biblical passages. A good example is the psalm known today as “The Lord’s Prayer,” which begins:

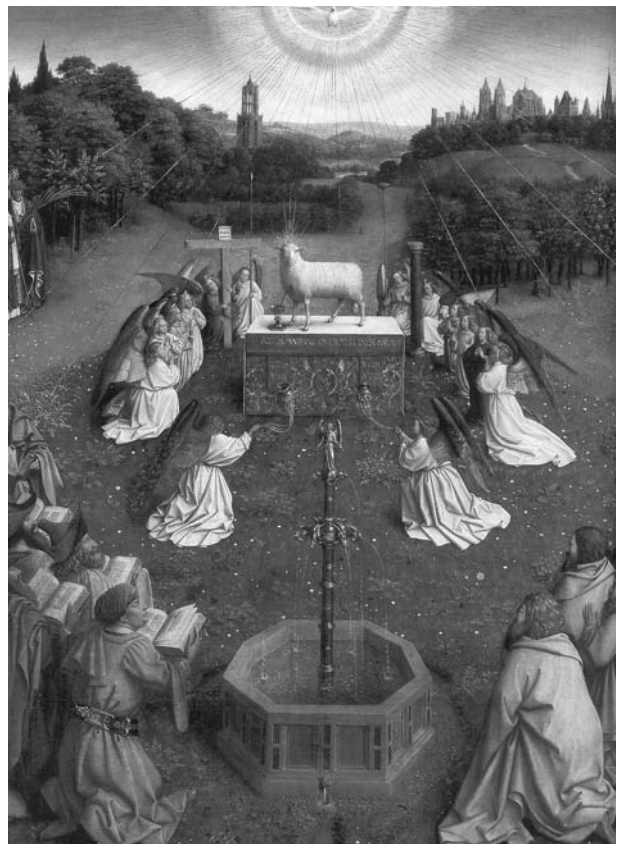
Yahweh is my shepherd
I lack nothing
In meadows of green grass he lets me lie.
To the waters of repose he leads me. . . . (Ps. 23:1–4,
Jerusalem translation)

The society of the Hebrews, as described in the Bible, did indeed have some organizational resemblance to that of sheep. In both there was generally a single leader, but otherwise membership was comparatively egalitarian. Anthropologists have observed that this

pattern is generally characteristic of semi nomadic herders, in contrast to societies of agriculturalists with their complex gradations of status and power.

The metaphorical importance of sheep continues in the New Testament. On seeing Jesus for the first time, John the Baptist says, “Look, there is the lamb of God that takes away the sins of the world” (John 1:29). In the book of Revelation, “the Lamb” is repeatedly used to refer to Christ.

Like other closely related animals—for example, the dog and the wolf—sheep have constantly been contrasted with goats, which are relatively fierce and independent. The Greek god Dionysus took the form of a goat when fleeing to Egypt during the war between the gods and the titans. The festival



Hubert and Jan Van Eyck, *The Adoration of the Lamb* (detail from the Ghent Altarpiece completed in 1432). Angels, prophets, and popes kneel before the sacrificial lamb, which symbolizes Jesus.

A lamb figures in the deadly rivalry between the biblical Cain and Abel: God favored Abel's sacrifice of a lamb over Cain's offering of grain.



of Dionysus, out of which Greek tragedy emerged, climaxed with the sacrifice of a goat.

But perhaps because of their association with pagan gods of Greece and Egypt, the Judeo-Christian tradition often viewed goats as diabolical. Jesus speaks of separating the sheep from the goats at the Last Judgment (Matthew 25:31-46), a metaphor for the division of the just from the damned. In medieval Europe, Christ was often depicted as a lamb, while the devil was portrayed with the horns of a goat.

Industrial Society

Large forests throughout the Near East and Europe were cut down to provide grass for sheep and other herd animals. Overgrazing drastically reduced the fertility of the soil in the Mediterranean region, contributing to the decline of ancient civilizations such as those of Greece and Mesopotamia. In a similar way, the forests that once covered most of central Spain were later cut down to make way for the prized merino sheep, a breed introduced to the region by Moors in the twelfth century. Rains then washed the topsoil away, doing enormous damage to Spanish agriculture.

Scholars often consider the beginning of farming during Neolithic times and the Industrial Revolution starting around the eighteenth century as the two great revolutionary changes in human society, and sheep played an important role in both changes. Modern animal husbandry began when the English farmer Robert Bakewell (1725–1795), an expert on sheep, developed scientific methods of breeding. This enabled people to produce sheep that would yield greater amounts and varieties of wool. In 1764, the spinning jenny was invented by the Scotsman James Hargreaves (c. 1720–1778). This machine helped people to exploit the wool, in a mechanized textile industry, which provided a model for mass production that was soon extended to many other kinds of manufacturing.

The new technologies created a demand for wool in unprecedented quantities, which, in turn, led to massive changes in the traditional societies of Britain and continental Europe. To clear the land for herding of sheep, many tenant farmers in Britain were forced off their ancestral lands in the late eighteenth and early nineteenth century in what is often known as the “tragedy of the commons.” This, in turn, led to rapid urbanization, as well as increased emigration to the Americas.

Every man can tell how many goats or sheep he possesses, but not how many friends. • **Marcus Tullius Cicero (106 BCE–43 CE)**

A Romantic Image

Shepherding has always been celebrated by poets for the closeness it provides to nature and the opportunity it allows for contemplation. Around the middle of the eighth century BCE, the Greek poet Hesiod told how the Muses had inspired him as he was tending sheep. In early modern times growing urbanization created a nostalgic longing for rural life, and the shepherd became a favorite figure of poetic literature. At the end of the novel *Don Quixote* by the Spaniard Miguel de Cervantes (1547–1616), the dreamy hero, disillusioned with the life of chivalry, decides to become a shepherd. The French queen Marie Antoinette (1755–1793) would dress and act the role of a shepherdess on a bucolic farm where she went to escape the intrigues of the French court. But the idealized image of the shepherd or shepherdess cherished by aristocrats was far from the reality of people who depended on sheep for a living.

As synthetic fabrics have become more widely available, the wool industry has become considerably less significant economically. Nevertheless, sheep became an important part of yet another potential upheaval in

human society in 1996, when a sheep named Dolly (1996–2003) became the first mammal ever to be successfully cloned.

Boria SAX

Mercy College

See also Agricultural Societies; Domestication, Plant and Animal; Industrial Revolution; Pastoral Nomadic Societies

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Shinto

The practices of Shinto in Japan developed over centuries, perhaps beginning as early as the fourth century BCE, and became distinctive as influences from Buddhism and Chinese religions spread eastward. A characteristic feature of Shinto, which still pervades contemporary Japanese culture, is *kami*, beings that dwell in heaven or reside on Earth as sacred forces within nature.

Shinto is the name for the religious beliefs and practices that are believed to have developed in Japan prior to the importation of foreign religious traditions from the Asian continent, beginning in the sixth century CE. With rare historical exceptions, the Japanese have not attempted to propagate Shinto outside of Japan, believing that it was the foundation of their cultural heritage and identity. One might conclude that the impact of Shinto in world history has been minor, but this is not the case. Shinto deeply influenced Japan's interactions with other cultures. Moreover, it continues to serve as a major religious and cultural institution in contemporary Japan.

Shinto in the Premodern Period

It is difficult to say with any certainty when Shinto began. Shinto had no founder and no scriptural tradition. Rather, the elements of what eventually became identified as Shinto developed over a period of centuries, perhaps from the fourth century BCE to the sixth century CE. During this period, ritual specialists worshipped spirits called *kami*; Shinto, in fact, literally means the "Way of the *kami*." While "spirit" is one generally accepted English equivalent for *kami*,

the concept of the *kami* defies any simple translation. One eighteenth-century scholar of Shinto offered this explanation:

I do not yet understand the meaning of the term *kami*. Speaking in general, however, it may be said that *kami* signifies, in the first place, the deities of heaven and earth that appear in the ancient records and also the spirits of the shrines where they are worshipped . . . It also includes such objects as birds, beasts, trees, plants, seas, mountains, and so forth. In ancient usage, anything whatsoever which was outside the ordinary, which possessed superior power, or which was awe-inspiring was called *kami*. (Motoori Norinaga, quoted in Tsunoda 1958, 21)

Until the seventh century CE, there was no coherent state in Japan. Instead, various clans controlled their own territories. Historians believe that one of these clan leaders managed to convince other powerful clans of his ability to communicate with the *kami*. Over the course of the fifth and sixth centuries, the hereditary leader of this clan formed alliances with other clans, and Japan's first state, known as Yamato, was born. The leader of the dominant clan became the sovereign of this state and the "emperor" of Japan. That clan's connection with the *kami* meant that Shinto was linked with the new ruling family. Three of the most important Shinto shrines, for example, house the regalia that symbolize imperial rule. The Grand Shrines at Ise, which have been rebuilt every twenty or twenty-one years since the seventh century, are especially important as the primary site for the reverence of the *kami* Amaterasu, the deity of the sun and divine ancestor of the imperial family. It is at the Ise shrines that certain Shinto rituals connected with



Two Shinto good-luck charms. Photo by Mark McNally.

the imperial family, such as the enthronement of a new emperor, are usually conducted.

The institutional and doctrinal character of Shinto during this early period lacked coherence. Its rituals and practices were confined mostly to the social and political elites of the clans; the rest of Japanese society had their own forms of worship, which were only absorbed into Shinto in the nineteenth and twentieth centuries. Shinto became more clearly defined in contradistinction to Buddhism, which arrived in Japan in 538. Korean monks from the state of Paekche brought copies of Buddhist sutras with them to Japan, and many of these monks took up residence in Japan as teachers. Unlike Shinto, Buddhism had a founder, scriptural texts, and an exegetical tradition. Japanese elites were fascinated with Buddhism, which far surpassed Shinto in the sophistication of its teachings and practices. The “magic” of Buddhism, as evidenced by some Buddhist monks’ knowledge of medical herbs and healing, also seemed superior to the magic of Shinto. During the sixth century, a rivalry developed between the adherents of Buddhism and Shinto priests, and it was during this period that Shinto began to develop a true institutional identity.

Although Shinto never lost its close association with the imperial court, Buddhism was very nearly given the status of a state religion in 745 CE by Emperor Shomu (701–756; reigned 715–749). In addition, Buddhism began to appeal more to the general populace during the eleventh century, as less esoteric, more faith-based schools of Buddhism were introduced. For the most part, Shinto leaders ignored commoner worshippers.

Ryobu Shinto

During Japan’s classical and medieval periods (seventh through sixteenth centuries), there were two important developments in Shinto. The first was the emergence, beginning in the ninth century, of an esoteric strain called Ryobu Shinto, a syncretization of esoteric Buddhism and Shinto that equated particular Shinto deities with particular Buddhist deities. In this effort, the Shinto deities were viewed as incarnations of Buddhist gods, so that the latter took precedence over the former. In Ryobu Shinto, Shinto’s doctrinal void was filled with Buddhist teachings. Ryobu Shinto was a dominant presence in the world of doctrinal Shinto until the fifteenth century.

A Shinto shrine in Japan. Deep connections to the Japanese imperial institution survive to this day, helping Shinto to preserve its authority and majesty.
Photo by Mark McNally.



Yoshida Shinto

A Shinto priest, Yoshida Kanetomo (1435–1511), was dissatisfied with Ryobu Shinto because of its theological emphasis on Buddhism. He reversed Ryobu Shinto's syncretistic hierarchy and introduced Neo-Confucian values and teachings into Shinto. The result was called Yoshida Shinto. Although there were other Buddhist-Shinto blendings prior to the seventeenth century, Yoshida Shinto gradually became associated with the imperial court and Yoshida priests became the court's ritual specialists.

Shinto and Modern Japan

During the early modern period, roughly 1600 to 1870, scholars and intellectuals who wanted to purge Shinto of all foreign influences created a new field of Shinto scholarship. These nativist scholars (Japanese: *kokugakusha*) argued that Shinto must be purified of its long-standing ties to Buddhism, since the latter was a foreign creed. Yoshida Shinto's emphasis on Neo-Confucianism was similarly problematic because Neo-Confucianism was an intellectual import from China. The nativists believed that their mission was to eliminate foreign doctrinal contaminants from Shinto and to replace them with authentically Japanese teachings and values. They argued that these teachings could be found after a careful and thorough examination of Japan's classical literature, especially works composed

in the period from the eighth to thirteenth centuries. According to the nativists, once Shinto was properly purified, it could become the basis for asserting a truly unique Japanese culture, which they believed was the only way to rectify the problems of their society. At the same time, the nativists of the early modern period believed that Shinto's lack of articulated teachings was one of its unique and valuable features. There was no need to govern the behavior of the Japanese people, they argued, because they were already blessed by the *kami* with the internal capacity to self-regulate. Another aspect of Shinto that the nativists called attention to, and that continues to be important in contemporary Shinto, is Shinto's the reverence for nature. Scenes of natural beauty, such as mountains, rock formations, and waterfalls, are believed to harbor their own *kami*. To commemorate the presence of the *kami*, a small shrine is erected, symbolized by a *torii*, a gate-like structure composed of two support beams and a crossbeam.

In 1868, when samurai political domination came to an end and the emperor was, in theory, restored to actual power, Shinto was given renewed cultural and political power. Shinto priests advocated that the new government be modeled on the one that had existed before the advent of warrior rule in 1192. Although the effort to resurrect the imperial government of the classical period was abandoned in favor of the creation of a government similar to those of the European powers, the services of Shinto priests were

retained by government officials in the movement to establish a state religion. Japanese intellectuals argued that the material and technological successes of the Europeans were rooted, in part, in the strength of their religious values. The Japanese, they believed, needed to identify their own values and foreground them if they were to transform Japan into a strong nation like those of the West. After much debate, chiefly with the Buddhists, the Shinto priests succeeded in the creation and adoption of State Shinto. Thus, Shinto had an instrumental part in the emergence of Japan's modern state.

During the 1930s and 1940s, supporters of State Shinto were vocal supporters of the view that it was Japan's destiny to dominate the rest of Asia. When the tide turned against Japan in World War II, "special attack brigades" were formed, the most famous of which were the suicide pilots who flew their planes into enemy ships. Since the hope was that these pilots could reverse Japan's military decline, the Japanese called them the *kamikaze*, the "wind of the *kami*" in a deliberate invocation of a typhoon that had arrived,

apparently in answer to the prayers of Shinto priests, and destroyed the boats of an invading Mongol army in the thirteenth century. Just as the *kami* had saved Japan from the Mongols, it was hoped that they would save it from the Allies.

In the postwar period, one shrine has generated controversy beyond Japan's borders. Yasukuni Shrine in Tokyo was originally built at the end of the nineteenth century to commemorate the souls of those who had fought on behalf of the imperial court in the overthrow of the samurai government in 1868. Later, it became the site for the veneration of soldiers and sailors who had died in subsequent wars, such as the Sino-Japanese War (1894–1895), the Russo-Japanese War (1904–1905), and World War I. In the postwar period, the ranks of those who had died in World War II were included in that number. Government leaders, including the prime minister, have paid official visits to the shrine. This has sparked outrage in both North and South Korea and in the People's Republic of China over what the populations in those countries feel is a show of respect for the dead of an unjust and



Small shrines to commemorate the presence of a *kami* are symbolized by a *torii*, a gate-like structure composed of two support beams and a crossbeam. Photo by Mark McNally.

aggressive war, and a sign that Japanese claims of remorse for the war are not genuine.

Contemporary Shinto

The leaders of the postwar Allied Occupation of Japan (1945–1952) insisted that the Japanese abolish State Shinto. Although the imperial institution was allowed to endure, Shinto itself settled into two major forms. The first, a successor to State Shinto, is a set of practices surrounding the emperor and the imperial court, but purged of prewar ideology. The other developed out of traditions not directly associated with the imperial court. These were the benign practices performed by many Japanese people as a way to mark important events, such as the milestone years of childhood, the coming of age for young adults, and especially weddings.

Shinto manifests itself in the lives of ordinary people in other ways as well. Purification rituals are a common occurrence in contemporary Japan. Metaphors of purity and defilement are central to Shinto. Many Japanese will hire Shinto priests to purify people, places, and objects by driving out evil spirits. A building site is normally cleansed after construction and before it is open to the public. In order to invoke the protection of the *kami*, many Japanese purchase talismans (*omamori*) from shrines for such things as academic success and successful conceptions. On the eve of their high school or university entrance exams, students compose notes inscribed with their wishes for academic success and tie them to tree branches at Shinto shrines. Throughout the year, in all parts of Japan, people participate in festivals that are usually organized around local Shinto shrines.

It is perhaps not inaccurate to characterize Shinto as a religion of practitioners but not believers. While there are some worshippers who observe Shinto exclusively, most Japanese people observe both Buddhist and Shinto practices, exhibiting what some Japanese scholars describe as a kind of psychological “cohabitation.” For example, it is not uncommon for families to make offerings in their home at both

a Shinto “*kami* shelf” (*kamidana*) and at a Buddhist altar (*butsudan*). The latter is especially important for the veneration of ancestors and recently deceased family members.

Shinto and World History

Although Shinto is not generally considered to be one of the world’s great religions, it has had an impact on world history. It has had its moments of infamy, serving as the pretext for war and invasion. During the 1570s, the war leader Toyotomi Hideyoshi (1536–1598) rose to become the most powerful samurai in Japan, earning the title of imperial regent. In a letter to the Portuguese viceroy in Goa, he cited Japan’s special place in the world by invoking Shinto: “Ours is the land of the Gods [*kami*], and God is mind. This God is spoken of by Buddhism in India, Confucianism in China, and Shinto in Japan. To know Shinto is to know Buddhism as well as Confucianism” (quoted in Tsunoda 1958, 317). Hideyoshi made it clear that his rule was with the consent of the *kami* and the emperor, who himself was viewed as a living *kami*. Empowered with the sanction of Shinto, Hideyoshi ordered the invasion of Korea in 1592, with the eventual goal of subjugating China. Hideyoshi’s death put an end to his plans for conquest, but not before Japanese forces had wreaked considerable havoc in Korea. In Japan, however, he was deified and subsequently worshipped as a Shinto *kami*.

As mentioned earlier, Shinto was also invoked in Japan’s rise to militarism and imperialism in the 1930s. The unique “Japanese soul” (*Yamato damashii*) bespoke innate Japanese superiority and fostered an attitude of contempt for other, lesser peoples.

But Shinto was also instrumental in the emergence of the modern state in a more positive sense, supporting a sense of place and a sense of community. Shinto’s deep connections to the Japanese imperial institution survive to this day, helping it to preserve its authority and majesty. Even without a coherent doctrinal tradition, Shinto has functioned as the

foundation of Japan's cultural identity for more than a millennium.

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See also Japanese Empire

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Sikhism is an eclectic faith combining the teachings of Hinduism and other traditions first laid down by its founder, Guru Nanak (1469–1539?), in the Punjab region of India. Sikhs have migrated to many parts of the world and set up large communities; they stress respect for other faiths, emphasize a sense of social duty, and give great importance to the equality of all human beings.

Sikhism is a religion that developed in the Punjab area of the Indian subcontinent in the fifteenth century CE. The founder of the religion was Guru Nanak, who was born in 1469 CE in Talwandi. Guru Nanak was originally a Hindu, but drew upon a range of religious influences in creating his distinctive spiritual message. In his early years he earned his living by keeping financial records, but was attracted to the religious life, and made a series of journeys to religious sites that were significant to both Muslims and Hindus. It seems that he traveled to Varanasi (Benares), to the very south of India, and also to Mecca. After this long period of pilgrimage, Guru Nanak moved to the village of Kartarpur in the Punjab where he gathered around himself a community of disciples. Toward the end of his life, Guru Nanak selected a man named Lehna to be his successor. From then onward, Lehna became known as Guru Angad.

In his teachings Guru Nanak laid the religious foundations of Sikhism, but his spiritual successors amplified the teachings. After Guru Angad there were eight other Sikh gurus, culminating in Guru Gobind Singh, who died in 1708 CE. The teachings of some of the Sikh gurus, along with those of several Hindu and Muslim teachers, were ultimately gathered

together into the definitive scripture, the *Guru Granth Sahib*. The names and dates of the ten Sikh gurus are: Guru Nanak (1469–1539?); Guru Angad (1504–1552); Guru Amar Das (1479–1574); Guru Ram Das (1534–1581); Guru Arjun (1563–1606); Guru Har-gobind (1595–1644); Guru Har Rai (1630–1661); Guru Hari Krishen (1656–1664); Guru Tegh Bahadur (1621?–1675); Guru Gobind Singh (1666–1708). It was decided by Guru Gobind Singh that he would be the last person who was guru, and that from then onward, the scripture of the Sikhs, the *Guru Granth Sahib*, would become the guru.

Religious Beliefs

Sikhism is a monotheistic religion that lays emphasis upon the relationship of the individual with God. The Sikh scripture emphasizes the influence of God in creating an ethical unity or the Punjabi *hukam* in the universe. The goal of human beings should be to try to live according to this ethical principle, while at the same time not being egoistic or focused on the self. If the individual tries diligently to adhere to this way of life, then with the grace of God, it is possible to attain salvation. Sikhs may also use a form of meditation involving the repetition of the name of God, to assist in achieving salvation. The state of salvation is sometimes described by the Punjabi term *sahaj*, which indicates the merging of the individual with the divine.

In a Sikh community, worship is normally focused upon a *gurdwara*. This is a place of communal worship, in which is kept a copy of the *Guru Granth Sahib*. This scripture is regarded with great reverence by the Sikhs, as it is considered to be one of the principal



A Sikh family crosses a bridge over the Thames. Founded in India, Sikhism is now a world religion, with Sikhs living in many nations.

ways in which God reveals his teachings to humanity. The holy book is kept on a pedestal at one end of a large prayer room, in which when services are being held, men sit on one side and women on the other. Worship at the *gurdwara* may consist of readings from the *Guru Granth Sahib*, the singing of hymns accompanied by music, and also spiritual talks.

After the worship, there is often a communal meal or *langar*. This social custom was instituted by the Sikh gurus to emphasize the equality of all people. In the India of the time, there were a number of prohibitions about food that related to the caste which a person occupied. The Sikh gurus felt that these were inappropriate, and the *langar* was developed to stress the absence of social divisions among Sikhs. Guru Nanak was opposed to extravagant forms of religious ritual, and this is reflected in the relative simplicity of Sikh worship. Sikhism does not particularly attempt to convert people to its faith. While Sikhs are very proud of their own religion, they also show respect for other faiths.

Historical Development

Sikhism developed at a period of conflict in northern India, exacerbated by the geographical position of the Punjab on the natural invasion route from the north into India. The historical period covered by

the Sikh gurus saw intermittent conflict between the developing Sikh community and the Muslim invaders of India. The Sikhs felt, to some extent, the need to defend their community militarily in order to survive. But relations with the Mughal Empire were at times very friendly. Guru Amar Das, for example, was a contemporary of the Mughal emperor Akbar (ruled 1556–1605 CE), and it seems likely that the two men did in fact meet, under very amicable circumstances. Guru Arjan, on the other hand, possibly because of political conflict, alienated the emperor Jahangir (ruled 1605–1627) and was subsequently executed. The emperor Aurangzeb (ruled 1659–1707) instituted a period of stricter observance of Islamic views. There was conflict with the Sikhs, and the ninth guru, Tegh Bahadur, was ultimately executed. His son, Guru Gobind Singh, became leader of the Sikh community, and introduced changes that were to have long-term consequences for Sikhs. Besides establishing the Sikh scripture as Guru, he instituted the *khalsa*, or community of people who had been formally accepted as Sikhs. Members of the *khalsa* tend to be recognized by five characteristics: they do not cut their hair; they wear a comb to keep it in order; and they wear a sword, a steel bangle on the wrist, and a pair of shorts beneath their outer garment. These customs have given Sikhs a sense of coherence as a community.

When all efforts to restore peace prove / useless and no words avail, / Lawful is the flash of steel, / It is right to draw the sword. • **Guru Gobind Singh (1666–1708)**

Influence of Sikhism

Although there was some continuing conflict between Sikhs and Muslims, the Sikh community managed to sustain its sense of identity. In recent times, Sikhs have migrated to many parts of the world and set up large and successful communities, for example in Canada and in London. Sikhism has emphasized a number of principles that are of value to the world faith community. It has stressed a respect for other faiths; it has emphasized a sense of social duty, and given great importance to the equality of all human beings.

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Silk Roads

The Silk Roads were an elaborate and ever-changing network of overland trade routes that linked China, India, and western Eurasia for many thousands of years. Their existence ensured that the history of Eurasia had an underlying coherence, despite the significant cultural differences between its regions.

A late nineteenth-century German geographer, Ferdinand von Richthofen, first used the label *Silk Roads* in honor of the shimmering lightweight fabric that was their most famous and exotic commodity. But the Silk Roads carried much more than silk—they also carried languages, technologies, artistic styles, goods, and even diseases between the great agrarian civilizations of Eurasia. Scholars began to appreciate the importance of the Silk Roads in the late nineteenth century, during the international contest known as the Great Game, which pitted Russia and Great Britain against each other for influence in Central Africa. To Russian and British officials, Central Africa seemed a remote backwater, ripe for colonization because of its strategic position. But as European and Russian soldiers, diplomats, and scholars began to scout out the lands of Central Africa, they learned that flourishing trade routes had once crisscrossed the region, supported by ancient cities, some of which had long vanished under desert sands. In the twentieth century, several generations of archaeologists, historians, and linguists undertook the daunting task of recreating the lost world of these ancient trade routes.

For world historians, long-distance exchange routes are of great importance. William H. McNeill has argued that the exchange of ideas and technologies

between different regions may be one of the most important of all engines of change in world history. As the most durable links between major population centers in the largest landmass on earth, the Silk Roads count as one of the most important of all long-distance exchange routes in human history. Study of the Silk Roads has made it apparent that Eurasian history consisted of more than the separate histories of Mesopotamia, Egypt, Europe, India, Southeast Asia, and China. On the contrary, for several thousand years, the Silk Roads ensured that these regions were never entirely disconnected. As Marshall Hodgson noted as early as the 1950s, “historical life, from early times at least till two or three centuries ago, was continuous across the Afro-Eurasian zone of civilization; that zone was ultimately indivisible” (Hodgson 1993, 17).

Geography and Early History of the Silk Roads

The distinctive way in which the Silk Roads linked the different regions of Eurasia is explained by the large-scale geography of the Eurasian landmass. Eurasia consists of two very different regions. Around its western, southern and eastern rims, in what we can call Outer Eurasia, there lie several subcontinental peninsulas, partially separated from one another by seas and mountain chains. Because these regions are southerly and well watered, agriculture flourished there, so it was there, in Mesopotamia, India, and China, that Eurasia’s first agricultural civilizations appeared from about five thousand years ago. Links between the different parts of Outer Eurasia were tenuous enough that each region developed its own



A rubbing of text from a tomb in China shows Persian (Farsi), Arabic, and Chinese, three languages that traveled along the Silk Roads.

cultural and technological styles. Further north, in regions dominated during the twentieth century by the Soviet Union (which we can call Inner Eurasia), climates were harsher and more arid. Few practiced agriculture here, except in parts of modern Ukraine and Central Africa, and there were few towns and cities until recent centuries. This huge zone, largely devoid of agriculture, helped separate the major agrarian civilizations.

Yet the absence of agriculture did not mean that Inner Eurasia was a historical backwater. From about 4000 BCE pastoralist lifeways, based on the exploitation of domesticated animals, began to spread in the steppes of Inner Eurasia. By 2000 BCE pastoralists were grazing their livestock from Hungary to the borders of Mongolia, and in the first millennium BCE pastoralism also spread into Mongolia and parts of Manchuria. Moving with their herds and spending much of their time on horseback, pastoralists were much more mobile than farmers and ranged over large

areas. But it was difficult for them to grow and store crops, so most traded with farming communities at the edge of the steppes, exchanging livestock products for agricultural produce and urban manufactures. In this way, pastoralists gradually created far-reaching systems of exchange that operated in relays from Siberia to India and from China to the Mediterranean. With the spread of pastoralism, Inner Eurasia, which had once seemed a barrier to communications across Eurasia, became a new channel of communication. How extensive these links could be is suggested by the spread of Indo-European languages from somewhere north of the Black Sea to Xinjiang (northwestern China), India, Mesopotamia, and Europe, borne almost certainly by the spread of pastoralist communities speaking closely related languages.

Early evidence of trade along the Silk Roads comes from the so-called Oxus civilization, a cluster of fortified farming and trading cities built about 4,000 years ago on the borders between modern Afghanistan, Turkmenistan, and Uzbekistan. Here, archaeologists have found Chinese silks, goods from India and Mesopotamia, and pottery and ornaments from the steppes. The archaeological evidence suggests a pattern of cooperation between urban merchants and steppe pastoralists, a pattern that survived into modern times. Eventually, there emerged sophisticated systems of trade, organized in caravans sometimes with hundreds of individuals, often financed by urban merchants, and supplied with urban manufactures and regional specialties. At least by the first millennium BCE, and perhaps much earlier, caravans could stop at special rest stations known as caravansaries established by local rulers or merchants and sometimes fortified. Caravansaries offered accommodation, repair workshops, and food, as well as information about what lay ahead. Between stops, caravans often traveled through lands controlled by pastoralists, who would provide protection (at a price), as well as guides, and who traded goods such as hides and horses. Without the consent and cooperation of the pastoralists through whose lands they passed, the Silk Roads could not have functioned at all.

The Silk Roads were not the only exchange networks linking the different agrarian regions of

Eurasia. As early as the third millennium BCE, sea routes helped link the civilizations of Mesopotamia and the Indus valley, and in the first millennium CE trade through the southern seas became increasingly important. Nevertheless, for several millennia, the Silk Roads were the most extensive of all trans-Eurasian exchange systems.

The Silk Roads at Their Height

The Silk Roads grew in importance late in the first millennium BCE, when major agrarian empires began muscling in on them from the south, west, and east. Around 529 BCE, Cyrus I, the founder of the Persian Achaemenid dynasty, invaded the lands of pastoralists known as the Massagetae in modern Turkmenistan. Though Cyrus was killed by the Massagetaen queen, Tomyris, his successors established a loose hegemony over much of modern Turkmenistan and Uzbekistan. Two centuries later, Alexander III of Macedon (Alexander the Great) conquered much of Central Africa, and a century after that, the Chinese emperor Han Wudi sent an envoy, Zhang Qian, into the same region. Zhang Qian embarked on an epic fourteen-year journey, much of which he spent as a captive of the pastoralist Xiongnu. He returned with enthusiastic reports of the wealth of Central Africa, but the emperor was particularly impressed by accounts of the magnificent “blood-sweating” horses of Fergana. Han Wudi sent an army westwards to claim his share of the wealth traveling through Central Africa, and ever since Chinese rulers have taken a keen interest in Xinjiang and Central Africa. Like Cyrus and Alexander, Wudi found he would have to fight regional pastoralist leaders for control of the Silk Roads, and he embarked on a contest for control of Xinjiang that the Chinese were to continue, with fluctuating success, until the early 1900s.

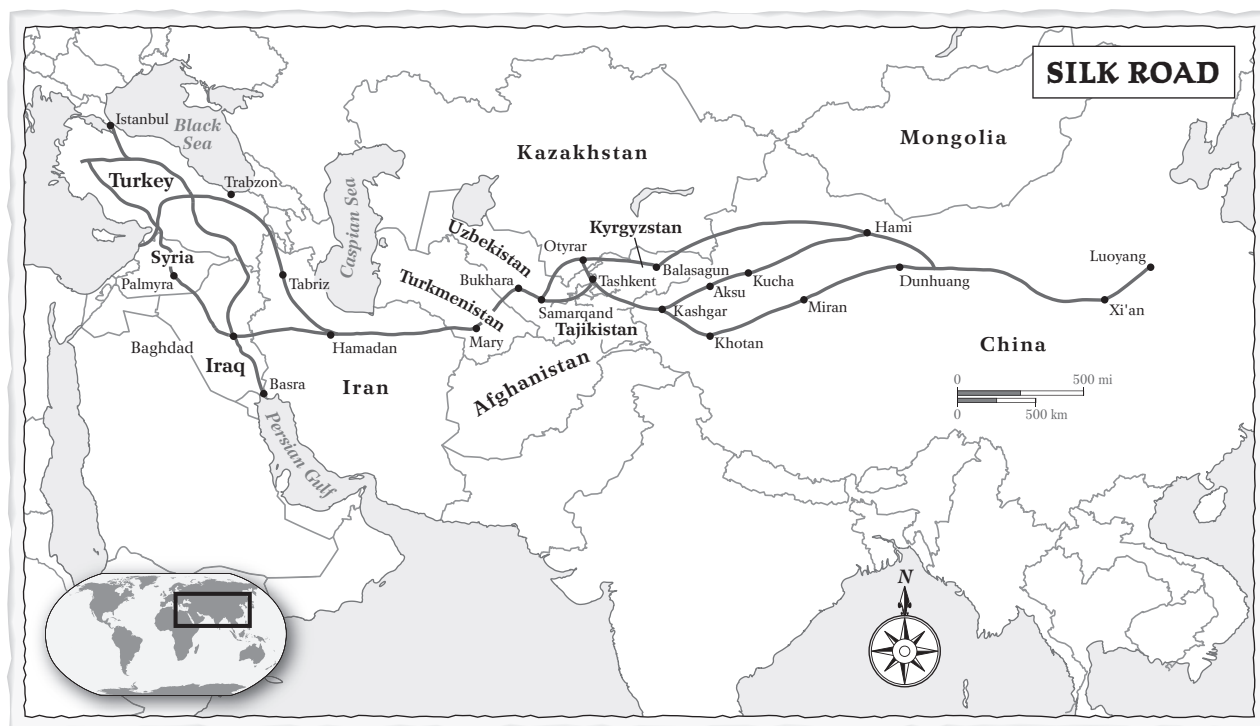
Further west, Rome’s great rival, Parthia (c. 238 BCE–c. 226 CE), which was founded by a dynasty of pastoralists, controlled the western end of the Silk Roads. Parthian rulers protected their monopoly on trade to the Mediterranean, and tried hard to prevent Roman traders from taking alternative routes through India. Though none of the great powers permanently



A textile merchant in the Silk Roads city of Samarqand displays silk, cotton, wool, and carpets (early twentieth century).

loosened the grip of regional pastoralists on the Silk Roads, their intervention did stimulate trade. Indeed, so abundant is the evidence for exchanges in the final century of the first millennium BCE that many scholars have argued that this is when the Silk Roads really flourished for the first time. At the battle of Carrhae (modern-day Haran, in southeastern Turkey), in 53 BCE, Parthian armies flew silken banners from China; from around 100 BCE, China began to import horses from Fergana; in the Xiongnu tombs of Noin-Ula in the north of modern Mongolia, archaeologists have found textiles from Central Africa and Syria; and in the steppe tombs of Pazyryk, in the Altay mountains, they have found Persian carpets.

In the second and third centuries of the common era, Central Africa was dominated by the Kushan Empire, which had been founded in approximately 45 CE by a dynasty of pastoralist rulers originally from eastern Xinjiang. The Kushan Empire traded with Inner Eurasian pastoralists and with the Mediterranean world, India, and China; all these regions influenced Kushan culture. For example, Kushan religious traditions included deities from the steppes, as well as Zoroastrian, Greek, and Buddhist deities, but they were also influenced by Jainism and Vaishnavism, while other religious traditions, including Nestorian Christianity and elements of Confucianism, were also present within the empire. Exchanges along the Silk Roads were particularly vigorous in the sixth and seventh centuries, when the Chinese Tang dynasty



(618–907 CE) was unusually open to influences from the West. These influences included musical and artistic styles from Persia, and Buddhism, which reached China from India, traveling with merchant caravans.

Trade was also stimulated by the creation of large and powerful steppe empires dominated by dynasties of Turkic origin, all of which were interested in long-distance trade. In the late sixth century, a Turkic leader, Ishtemi (reigned 552–c. 576), working closely with Sogdian merchants from the trading cities of Central Africa, sent trade delegations as far as Constantinople, and we know of at least one return mission, led by a Byzantine official called Zemarkhos, that probably traveled to Ishtemi's capital in Xinjiang.

The following account, written by the Muslim geographer al-Muqaddasi in about 985, gives some idea of the variety of commodities carried along the Silk Roads in the first millennium:

from Tirmidh, soap and asafoetida [a strong-smelling resinous herb]; from Bukhara, soft fabrics, prayer carpets, woven fabrics for covering the floors of inns, copper lamps, Tabari tissues, horse girths (which are woven in places of detention), Ushmuni fabrics [from the Egyptian town of Ushmunayn], grease, sheepskins, oil for anointing the head; . . . from

Khorezmia, sables, miniver [a white fur], ermines, and the fur of steppe foxes, martens, foxes, beavers, spotted hares, and goats; also wax, arrows, birch bark, high fur caps, fish glue, fish teeth [perhaps a reference to walrus tusks, which were carved into knife handles or ground up and used as medicine], castoreum [obtained from beavers and used as a perfume or medicine], amber, prepared horse hides, honey, hazel nuts, falcons, swords, armour, khalanj wood, Slavonic slaves, sheep and cattle. All these came from Bulghar, but Khorezmia exported also grapes, many raisins, almond pastry, sesame, fabrics of striped cloth, carpets, blanket cloth, satin for royal gifts, coverings of mulham fabric, locks, Aranj fabrics [probably cottons], bows which only the strongest could bend, rakhbin (a kind of cheese), yeast, fish, boats (the latter also exported from Tirmidh). From Samarqand is exported silver-coloured fabrics (sim-gun) and Samarqandi stuffs, large copper vessels, artistic goblets, tents, stirrups, bridle-heads, and straps; . . . from Shash [modern Tashkent], high saddles of horse hide, quivers, tents, hides (imported from the Turks and tanned), cloaks, praying carpets, leather capes, linseed, fine bows, needles of poor quality, cotton for export to the Turks, and scissors; from Samarqand again, satin which is exported to the Turks, and red fabrics known by the name of mumarjal, Sinizi cloth [from the Fars region, though originally the flax



for them came from Egypt], many silks and silken fabrics, hazel and other nuts; from Farghana and Isfijab, Turkish slaves, white fabrics, arms, swords, copper, iron; from Taraz (Talas) goatskins . . . (Barthold 1977, 235–236)

Traffic along the Silk Roads was never more vigorous than in the thirteenth century, when the Mongol Empire controlled almost the entire network from China to Mesopotamia. Like most pastoralists, Mongol rulers valued and supported long-distance trade. Karakorum, the Mongol capital, though far from any of the great agrarian centers of Eurasia, became briefly one of the most cosmopolitan cities in Eurasia; here all of Eurasia's great religions jostled each other, including Buddhism, Nestorian Christianity, Islam, Daoism, and Confucianism, as well as the still-vigorous religious traditions of the steppes. Italian merchant houses published special travel guides for merchants traveling to Mongolia and China; Chinese officials acted as advisers to the Mongol rulers of Persia; and Muslim merchants managed the tax systems of China.

The cultural and technological integration of Eurasia through the Silk Roads helps explain the technological and commercial precocity that gave Eurasians such a devastating advantage when they encountered peoples of the Americas and the Pacific. The technologies of pastoralism, including horse riding, as well as Chinese inventions such as the compass and gunpowder, which had traveled to Europe along the Silk Roads, gave colonists from Eurasia such a decided advantage.

But as William H. McNeill has shown, epidemiological exchanges through the Silk Roads were equally significant. The Black Death almost certainly traveled from China through the Silk Roads, but similar epidemiological exchanges between different agrarian civilizations had occurred several times before this. For example, the plagues that devastated parts of the Roman Empire in the second and third centuries CE may also have arrived via the Silk Roads. As McNeill has argued, these epidemiological exchanges help explain why, when peoples from Eurasia eventually

encountered peoples from the Americas and the Pacific, they enjoyed epidemiological as well as technological and military advantages: in the more populous areas of the Americas populations may have declined by up to 90 percent after the arrival of Eurasian diseases such as smallpox.

The Silk Roads in Decline

After the decline of the Mongol Empire in the fourteenth century, other trade routes began to assume greater importance, and the relative importance of the Silk Roads declined. More maneuverable ships plied new sea routes that spanned the globe; guns and cannon challenged the military power of pastoralists; and in the nineteenth century, steam engines began to displace horses and camels in the steppes. Meanwhile, as agricultural populations began to settle the lands that became Muscovy and Russia, trade was diverted north and west. Today, Central Africa is still a region of vigorous inter-Eurasian trade, but the Silk Roads count as just one of many different systems of exchange that link Eurasia and the globe into a single system. This makes it all too easy to forget that for perhaps four thousand years they were the main link between the forest dwellers of Siberia, the pastoralists of the steppes, and the agrarian civilizations of China, India, Persia, and the Mediterranean. Because of the Silk Roads, Indo-European languages are spoken from Ireland to India, Buddhism is practiced from Sri Lanka to Japan, and inventions such as gunpowder, printing, and the compass became part of a shared Eurasian heritage. The Silk Roads gave Eurasia a unified history that helps explain the dominant role of Eurasian societies in world history in recent millennia.

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See also Caravan; Eurasia, Inner; Pastoral Nomadic Societies; Secondary-Products Revolution

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Silver

Silver has affected human culture and history since ancient times. Silver coinage increased trade, affected the type of trade goods, changed societal structures, and led to war. The 1500s saw new mining and refining techniques and the discovery of silver lodes in the New World, which affected cultures there. Since 1900, industrial uses have superseded its use as currency.

Silver is a rare metallic element widely distributed in the Earth's crust and usually found mingled with lead, copper, and zinc ores. In pure form it is soft and easily scratched, so alloys are used for jewelry and tableware. Pure silver is the best conductor of electricity and heat among all metals. That gives it widespread uses in electronics, so much so that modern industrial demand for silver exceeds annual rates of production. Historically its principal uses were for coinage, ornament, and tableware.

Impact on Ancient Civilization

Coinage was by far the most important for human affairs at large. The earliest coins were made in the kingdom of Lydia (680–547 BCE, located in modern Turkey) from a mixture of gold and silver. Later, during the Persian Empire (550–330 BCE), Persian kings coined pure gold. A single Persian gold coin paid a mercenary soldier for an entire year. But such coins were far too valuable to be of much use in everyday buying and selling. In fact the Persian kings made such little use of them that gold coins accumulated in the royal treasury until Alexander III of Macedon (Alexander the Great, 356–323 BCE) destroyed their empire and disbursed their treasure.

Silver is more common than gold, so coins of silver were cheaper; and in the course of the sixth century BCE Greek cities began to issue them in smaller sizes than the Persian gold coins. This made everyday buying and selling far easier than when barter had prevailed, requiring both buyer and seller to have goods of equal value readily available before a deal could be made. The result was to make market transactions far more pervasive, and thus bring rural populations into the marketplace regularly instead of subsisting on what they could raise locally.

Greek farmers soon discovered that by using their fields to raise wine and olive oil instead of grain, they could sell these products to merchants who shipped them abroad and returned with grain, timber, and other raw materials. This had profound consequences for Greek society and civilization. First, the terms of trade favored Greek oil and wine producers. They received more grain than they could raise at home for their exports, because special skills and a favorable climate were needed for grapevines and olive trees to flourish, while grain was raised everywhere and did best in richer soils than those of Greece. Second, grape and olive harvests came late in the fall and needed little or no attention in summer. This allowed landowning Greek farmers to take full part in war and other public enterprises. Indeed they became the ideal type of citizen and soldier, thus mobilizing a far larger proportion of the entire population for public action than was possible elsewhere.

The result was a richer, more leisured, and more formidable society than could otherwise have been sustained in the rocky and not very fertile land of Greece. Their success in repelling a formidable Persian invasion (480–479 BCE) under King Xerxes I was



A silver vein worked on the Nipissing Mine and Mill property, Cobalt, Ontario, cut into a cliff. The mill closed in 1932.
New York Public Library.

proof of what they could achieve. By chance, just as silver coins by then underpinned the Greek economy, newly discovered veins of silver at Laurium in Attica allowed the Athenians to enlarge their fleet of warships on the eve of Xerxes' attack. These silver mines were worked by slaves and owned by the state. In 483 BCE, an Athenian politician named Themistocles persuaded the Athenian assembly to use their new wealth in silver to enlarge the navy. As a result, by the time the Persians appeared the Athenian fleet had grown from seventy to two hundred triremes. Without the silver of Laurium, that could not have happened. And without the new Athenian triremes, the Greeks could not have defeated the Persians at the Battle of Salamis, depriving Xerxes' army of adequate supplies from home and requiring him to withdraw most of his soldiers from Greece and leave only a relatively small army behind that met defeat on land the next year.

Rowing in triremes required nothing more than a strong back. That gave the unpropertied Athenian citizens, who could not afford to equip themselves with armor, an important new role in war. Athenian democracy emerged in succeeding decades as a result.

Moreover, the fleet permitted military mobilization of all Athenian citizens, making their city a great power in Greece for about a century and supporting an age of literary and artistic achievement unequalled before or after. In view of silver's role in sustaining Athenian greatness, it might best be called a silver age, but calling it a golden age is conventional and unlikely to change.

The meteoric career of Alexander the Great (reigned 336–323 BCE), king of Macedon and conqueror of the Persian Empire, spread Greek influence eastward to the borders of India. Among their other novelties, Alexander and his successors expanded the scope of market relations throughout western Asia and Egypt by founding cities and introducing small silver coins, without turning rent-paying peasants into citizens or soldiers. Wealth increased and long-distance trade both in the Mediterranean Sea and the Indian Ocean swelled on the strength of enhanced buying and selling.

Greece languished, however, partly because deforestation and subsequent erosion damaged farmland, partly because so many emigrants left to seek their fortunes in the new cities of western Asia and Egypt,

and mainly because Greece faced increasing competition when the production of wine and olive oil for export spread to southern Italy and then to Spain. This westward expansion of olive groves and grapevines sustained a large-scale circulation of goods of common consumption within the Mediterranean coastlands that reached its climax under the Roman Empire between 30 BCE and 165 CE.

As before, oil and wine producers enjoyed advantageous terms of trade while grain and raw material suppliers were disadvantaged; however, both prospered until a disease disaster between 165 and 180 CE killed about a third of the population. Another lethal epidemic raged from 251 to 266 CE; by then barbarian invasions from the north and civil disorders had spread destruction far and wide, frequently followed by famine.

The population of the Roman Empire partially recovered by the time of Constantine (reigned 312–337 CE); although the western provinces remained impoverished, cities remained little more than empty shells, and subsistence farming made tax collection clumsy and inefficient. Classical Mediterranean urban society and its silver-based currency had disappeared from the west but survived on a diminished scale in the east, allowing the East Roman or Byzantine Empire to survive for more than a thousand years.

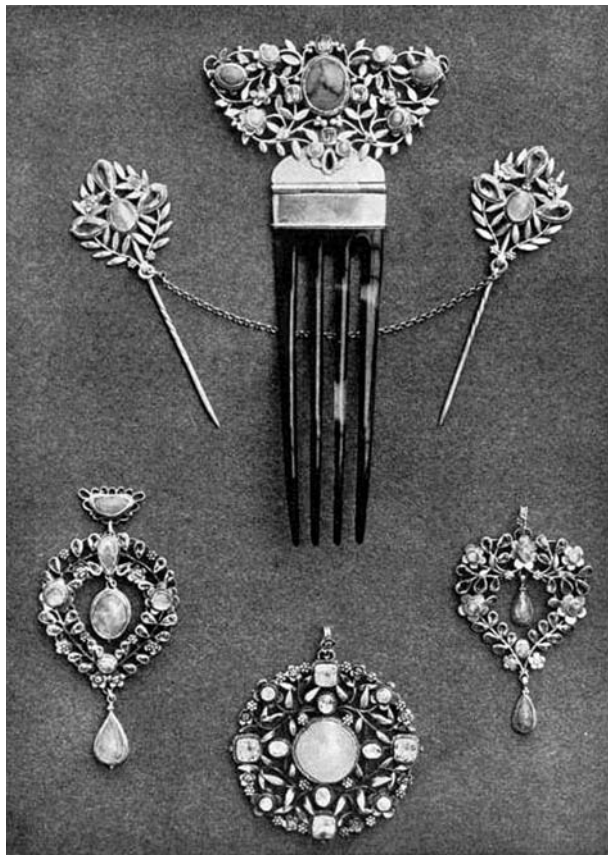
Impact from 1500 to 1800

When cities and trade revived in western Europe, silver currency alongside gold again facilitated exchanges. Silver production became significant in Europe when German miners learned how to dig and drain deeper shafts in search of silver and other metals. But exactly when and how their skills developed went unrecorded until 1556 when a German named Georg Bauer, better known as Georgius Agricola, published the book *De re metallica* that describes their methods in full detail. How silver was mined elsewhere also remained unrecorded, though we know silver production assumed a large scale in Japan by the sixteenth century.



Historic illustration of a member of the Navajo tribe wearing a silver belt. New York Public Library.

Old World silver mining was soon dwarfed by what happened in the Americas when Spaniards discovered rich ores in Mexico and more especially a “silver mountain” at Potosí in the high Andes of Bolivia (1546). They conscripted many thousands of indigenous people in Mexico and in Bolivia to dig the newly discovered silver, and they also introduced an efficient new way of refining the ore by heating it with mercury.



Silver jewelry, designed and executed by Arthur J. and G. C. Gaskin in 1914, inlaid with a variety of opals, pearls, crystals, and turquoise. New York Public Library.

The output from Potosí and Mexico was so prodigious that shipments of silver to Spain and China upset prevailing prices everywhere, inaugurating a worldwide inflation that peaked in the 1630s. Thereafter, Potosí's richest lodes petered out and simultaneous shortages of mercury reduced silver output drastically. By then silver from the New World had quadrupled prices in Spain and raised them almost as much across Europe and Asia, all the way to China, where disruptive effects were magnified by the fact that the Ming dynasty shifted its currency from copper to silver coinage.

Rather abrupt climate change, nicknamed "the Little Ice Age," peaked in the 1640s and contributed to the economic crunch that inflation and the

subsequent diminution of supplies of silver created. Ninety years of inflation caused landowners and governments to raise rents and taxes everywhere; those who paid them were sure that wicked greed and corruption were rampant as never before. No one understood how more silver coins purchasing almost the same amount of goods allowed sellers to ask and receive more money for the same old thing. And wherever colder, wetter weather diminished crops, rising food prices inflicted real suffering on millions of people. Sudden reduction of silver output in the 1630s had a no less disruptive impact on commercial affairs.

Under these circumstances, religious and political upheavals became widespread. In Europe, Germany's Thirty Years War (1618–1648) was particularly devastating, but civil war in England (1640–1660) and the Fronde in France (1648–1653) also reflected social strains exacerbated by the price fluctuations that American silver, and the sudden diminution of its flow, provoked. Further east, the Ottoman Empire saw a sultan deposed and succeeded by a ten-year-old boy in 1648, followed by near anarchy until 1656. And in China, the Ming dynasty collapsed in 1644 after years of disorder, to be succeeded by the Manchus' Qing dynasty.

China had become a magnet for the world's silver since it was almost the only commodity Europeans, Japanese, and other foreigners could offer to the Chinese in return for silk, porcelain, and other manufactures. It came directly across the Pacific from Mexico to the Philippines and thence to China, as well as via Europe and the Indian Ocean. The Chinese needed to import silver for their currency since production in China itself (mainly in Yunnan) was insufficient. Scholarly controversy still prevails about how critical interruptions in silver supply may have been in provoking the disorders that overthrew the Ming.

Impact since the 1800s

In succeeding centuries, human affairs were not affected so drastically by silver, since supply and demand for that metal became more evenly balanced.

Silver lodes were exhausted, new ones discovered, and its worldwide use slowly increased. Discovery of the Comstock lode in the U.S. state of Nevada in 1859 was like a lesser and more local Potosí, achieving peak production in 1876. For the rest of the nineteenth century, westerners sought to make silver as good as gold for backing American paper dollars. An economic depression in 1893 made the question central to the presidential election of 1896. But the Democratic candidate, William Jennings Bryan, met defeat after denouncing bankers and their friends for crucifying the country “on a cross of gold” and ran a second time in 1900 only to fail again.

That is the last time silver played a prominent role in politics. In the twenty-first century, its industrial and electronic uses outweigh its use for coinage, for modern “silver” coins are silver only in color and made of cheaper metals. The high Andes still produce more silver ore than anywhere else, but Potosí and the Comstock lode are both totally exhausted. Jewelry, candlesticks, forks, spoons, and other familiar items made of silver continue to be melted down

from time to time and recast in newer styles much as before.

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See also Currency; Trading Patterns, Ancient American

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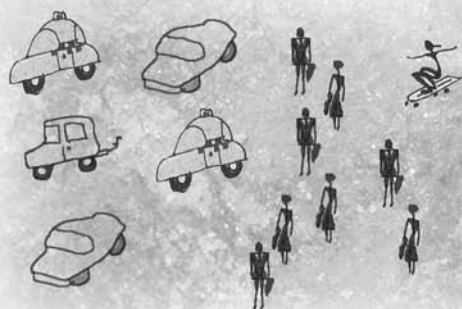
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Sima Qian

(c. 145–86 BCE)

CHINESE HISTORIAN OF THE HAN DYNASTY

Sima Qian was the first true historian of China. Although others had compiled earlier historical works, mostly in the form of state chronicles or collections of documents and anecdotes, Sima Qian was the first to write a history of China under his own name. The history he produced in the second century BCE—the *Shiji* (*Records of the Grand Historian*)—provided a model for Chinese historians over the next two thousand years.

The *Shiji* (*Records of the Grand Historian*) was the first official history of China authored by one person, Sima Qian, a court historian of the Han dynasty (206 BCE–220 CE). Most of what we know of Sima Qian's life comes from the last chapter of the *Shiji*, which included his autobiography. There we learn that his father, Sima Tan (d. 110 BCE), was a court astrologer to Emperor Wu (reigned 141–87 BCE). As a young man Sima Qian received a classical education and traveled extensively. At the age of twenty he entered government service as a “gentleman of the palace.” Eventually he inherited his father's office of grand astrologer, a position that combined record keeping with the interpretation of natural phenomena and, equally important, gave him access to the imperial library. His father had started a history, and on his deathbed Sima Tan begged his son to continue his efforts. It is not clear how much Sima Tan had actually written, but Sima Qian went on to complete a comprehensive history of China from its legendary beginnings to his own age.

Besides the *Shiji*, Sima Qian's surviving works include a letter to a friend, Ren An, explaining his actions in what is known as the Li Ling affair. Li was a

capable Han general who had led his army deep into the territory of the Xiongnu nomads on China's northwestern frontier. When his forces were surrounded and defeated he had surrendered, provoking Emperor Wu's wrath. Officials at court who had been praising Li only days before now joined in a chorus of condemnation. Sima spoke up for the general and in doing so offended the emperor and was sentenced to castration. Where other men might have chosen suicide rather than mutilation, Sima reluctantly accepted his humiliating punishment so that he could have time to finish his history.

The *Shiji* comprises 130 chapters: twelve basic annals, which recount earlier dynasties and the reigns of individual emperors in the Han; ten chronological tables correlating major events in the feudal states (both autonomous states in the pre-imperial Zhou dynasty and also semi-independent kingdoms within the Han empire); eight treatises on ritual, music, pitch-pipes, the calendar, astronomy, state sacrifices, waterways, and economics; thirty chapters on various hereditary houses (these were devoted to the feudal lords), and seventy “arrayed traditions.” The arrayed traditions are biographical chapters that often combine the life stories of two or three individuals who knew each other or were in some way similar (such as the philosophers Laozi and Han Feizi). The traditions also include group biographies of assassins, scholars, harsh officials, wandering knights, imperial favorites, diviners, and money makers. In addition, six of them describe various nomadic peoples that lived on China's borders.

Sima Qian ended most chapters with a brief appraisal prefaced by the phrase “The Grand Astrologer remarks.” Otherwise, his interpretive comments are

Though bitter, good medicine cures illness. Though it may hurt, loyal criticism will have beneficial effects. • **Sima Qian** (c. 145–86 BCE)

sparse and, at least for his accounts of early history, he borrowed extensively from already existing records. This has led some to view Sima Qian, for better or worse, as a cut-and-paste historian. Yet the unusual structure of his history allowed him considerable leeway to shape the perceptions of his readers through his editing. For instance, Confucius, who was by no means a feudal lord, got his own chapter in the hereditary house section—a sign of the importance Sima Qian attached to him, and unflattering details about particular individuals can show up when they are mentioned in the biographies of others.

There is a tremendous amount of information contained within the *Shiji*, but the fragmented, overlapping structure of the tome means that details about pivotal figures may be scattered over several chapters. It is a book that cannot be mastered one time through, and in its original form—written on thousands of bamboo slips—it would have been even more difficult to handle. Nevertheless, Sima Qian's literary style and bold innovations inspired later historians. His work became the first of the “Standard Histories,” of which there are now twenty-six, although unlike the *Shiji* the later histories limited their focus to a single dynasty, and many enjoyed official sponsorship. Yet they continued Sima Qian's basic format of annals, treatises, and arrayed traditions (the hereditary houses were omitted as the empire became more centralized).

From our perspective today, the *Shiji* is a significant cultural expression of the political trend in Sima

Qian's time toward consolidation. Just as the Han emperors had worked to bring “all under heaven” under their control, so Sima tried to bring together all of China's history, geography, and culture within a single work. Sima himself believed that, having met failure and disgrace in his own life, he was writing primarily for future generations. In this ambition he certainly succeeded.

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See also China; World History, Writing of

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Slave Trades

The trading of slaves had its origins when agricultural societies increasingly needed to defend lands and borders; it proliferated as growing empires expanded their own. Transatlantic slave trade, with its infamous Middle Passage, ensnared roughly 11 million people between 1443 and 1870; historians caution that using only slave-ship records to account for such numbers leaves out millions who perished in forced marches to factories on the African coast.

Slave trades began with the onset of agricultural societies. As hunter-gatherers also became farmers, they settled down at least temporarily, defending their lands from both nomads and other farmers. The ensuing wars yielded prisoners, who then became convenient forced labor for the victors. More wars in an area meant more available slaves, who then could be sold to others in exchange for food, copper, and later money. This exchange was particularly true in Mesopotamia, India after the Aryan migrations, China under the Zhou dynasty (1045–256 BCE), and the Greek city-states. For example, in Sumeria in southern Mesopotamia this labor was used to perform the constant maintenance of irrigation canals as well as to build ziggurat temples. Egypt and Harappa (in the Indus River valley of modern Pakistan) had far fewer slaves until outsiders attacked, and their societies became more warlike than before in response. China and India had fewer slaves than Mesopotamia and Greece. Strong central governments that reserved slavery largely to themselves and that were blessed with more peasant farmers than they needed condemned fewer individuals to being outright chattel (an item of tangible property except real estate

and things connected with real property) in eastern Asia.

Empires transmitted both slavery and slave trades. The Mediterranean world witnessed upsurges in the number of people in bondage with the imperial expansion of Athens, of Alexander III of Macedon (Alexander the Great), and then of Rome. Prisoners whose families could not afford or arrange a ransom were quickly sold and resold. Slave trades came to Gaul, in what is now western Europe, and Britain. Thanks to senatorial policy, the center of Mediterranean slave trading moved from the island of Rhodes to the smaller yet more accessible island of Delos to the even more convenient Rome itself. In addition,

TO BE SOLD on board the
Ship Bance-Yland, on tuesday the 6th
of May next, at Asbley-Ferry ; a choice
cargo of about 250 fine healthy

NEGROES,

just arrived from the
Windward & Rice Coast.

—The utmost care has
 already been taken, and

shall be continued, to keep them free from
 the least danger of being infected with the
SMALL-POX, no boat having been on
 board, and all other communication with
 people from *Charles-Town* prevented.

Austin, Laurens, & Appleby.

N. B. Full one Half of the above Negroes have had the
 SMALL-POX in their own Country.

An advertisement for newly arrived slaves vouches for their health. Library of Congress.



This stylized illustration of a slave market in Rome shows people from different regions of the far-flung Roman Empire. From *Story of the Greatest Nations: From the Dawn of History to the Present*, by Edward Sylvester Ellis. New York: Niglutsch (1901–1906).

as the historian Keith R. Bradley has noted, “piracy and kidnapping contributed to Delos’s ability, according to [the Greek geographer] Strabo, to dispose of tens of thousands of slaves in a single day, its volume of traffic being specifically geared toward Roman demand” (Bradley 1989, 22). On a smaller scale, in the Americas slavery and the slave trades blossomed long before Columbus. Mayan city-states enslaved defeated opponents, keeping some of them ultimately as objects to sacrifice to the gods. In the Andean region the Mochica celebrated the actual moment of enslavement during war through exquisite pottery art.

While the Americas remained isolated from intercontinental contacts and thus from long-distance slave trading, Africa became a center of large-scale human trafficking with the domestication of the camel during the first millennium CE and the spread of Islam into the lands south of the Sahara Desert after 800 CE. The trans-Saharan caravan trade mainly exported gold for basic commodities such as salt, but it also spread faith in Allah as well as toting captive women and children for sale as domestics and concubines in Arab caliphates (the offices or dominions of successors of Muhammad as temporal and spiritual heads of Islam). This trans-Saharan slave trade was small in comparison to the later transatlantic one, but it unfortunately accustomed western Africans to the idea of exporting human beings centuries before the Portuguese came to their coasts.

Monotheistic religions intensified and justified slave trades, particularly in Africa and around the boundaries between Christian and Muslim states such as in Iberia (modern-day Spain and Portugal). Muslims, in particular, viewed slavery as a prelude to conversion, but actual conversion did not preclude enslavement. Enslavement was just too profitable and necessary for converts to be allowed to go free. Accordingly, crusades and jihads (holy wars) dehumanized the enemy, making them fit to be treated as disposable property.

When the Roman Empire itself declined in western Europe after 200 CE, slavery and the slave trades also declined and disappeared there. Feudalism and serfdom emerged eventually to provide cheap and reliable sources of agricultural labor for governing elites. Serfdom supported local subsistence farming, whereas slavery persisted in and around the Levant (countries bordering on the eastern Mediterranean) to support large-scale cultivation for export. What the historian Philip Curtin has called “the plantation complex” (Curtin 1990, ix) began with Arab sugar planters in Mesopotamia using African and local prisoners of war about 800 CE. This complex gradually spread westward to the Levant, then to Cyprus, then to Crete, then to Sicily, then to Atlantic islands such as the Canaries, then to Sao Thome, and then finally to Brazil. Slave trades followed this westward trek, supplying the foreign, coerced workers for lucrative sugar plantations that needed vast numbers of



A late-nineteenth-century lithograph illustration titled, "In the slave market at Cairo."

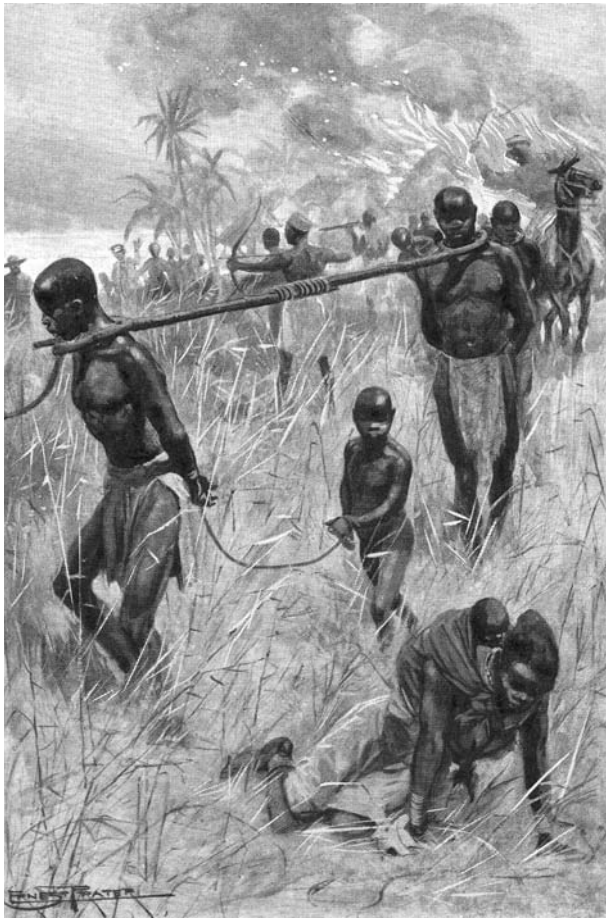
workers to cultivate many acres in order to be profitable. Yet, slave trades also developed from south to north and from west to east. As noted, sub-Saharan Africa supplied Islamic caliphates with concubines and domestics, whether in Cordoba, Jerusalem, Mogadishu, or eventually Delhi. Yet, these slaves were a mere fraction of the global number of slaves. When Europeans thought of slaves before the fall of Constantinople (modern Istanbul, Turkey) in 1453, they usually thought of the Slavic peoples caught in the wars between Muslims, Mongols, and Russians around the Black Sea. In fact, the word *slave* comes from this medieval association of forced labor with Slavs. More widely, before 1500, the Indian Ocean with its Arab and Muslim merchants had the largest volume of world trade and slave trade; after 1500 the Atlantic Ocean with its European merchants and African collaborators became more and more a center of world trade as well as of slave trade.

The New World

The making of the European "New World" was predicated upon the procurement of coerced labor. Even Columbus realized early on that he would have to generate riches and not just to steal them from Native American cultures. Schemes for a quick and gushing fortune required a lot of drudgery, which nearly all

explorers and planters had come to the Americas to avoid. Parasitically, they at first tried to use the Native Americans as their slaves, but the Columbian exchange of diseases decimated that source of labor. Accustomed to "European" diseases because of international trading contacts, enslaved Africans increasingly replaced sick and dying Native Americans, particularly in coastal, tropical, and disease-ridden areas prime for growing sugar and other lucrative crops. This switch to African labor in the Americas took a while, however.

From 1500 until 1650 slave trading was not the main activity along the western African coast that it would become later. The Portuguese, who initiated European contacts with western African kingdoms, were there mainly for the gold and, to a lesser extent, for pepper, ivory, and leopard skins. Elmina Castle in Ghana began as an entrepôt (intermediary center of trade and transshipment) for precious metals and other exotic luxuries in the 1480s, but it eventually became a factory for holding slaves for exports. It was taken over by the Dutch in 1637. By 1700 the Swedes, Brandenburgians, Danes, Britons, French, and the Dutch had established similar factories along the western African coast that was formerly devoted to the gold trade. Elmina Castle itself became less significant as rivals such as Cape Coast Castle took away more and more of the business themselves.



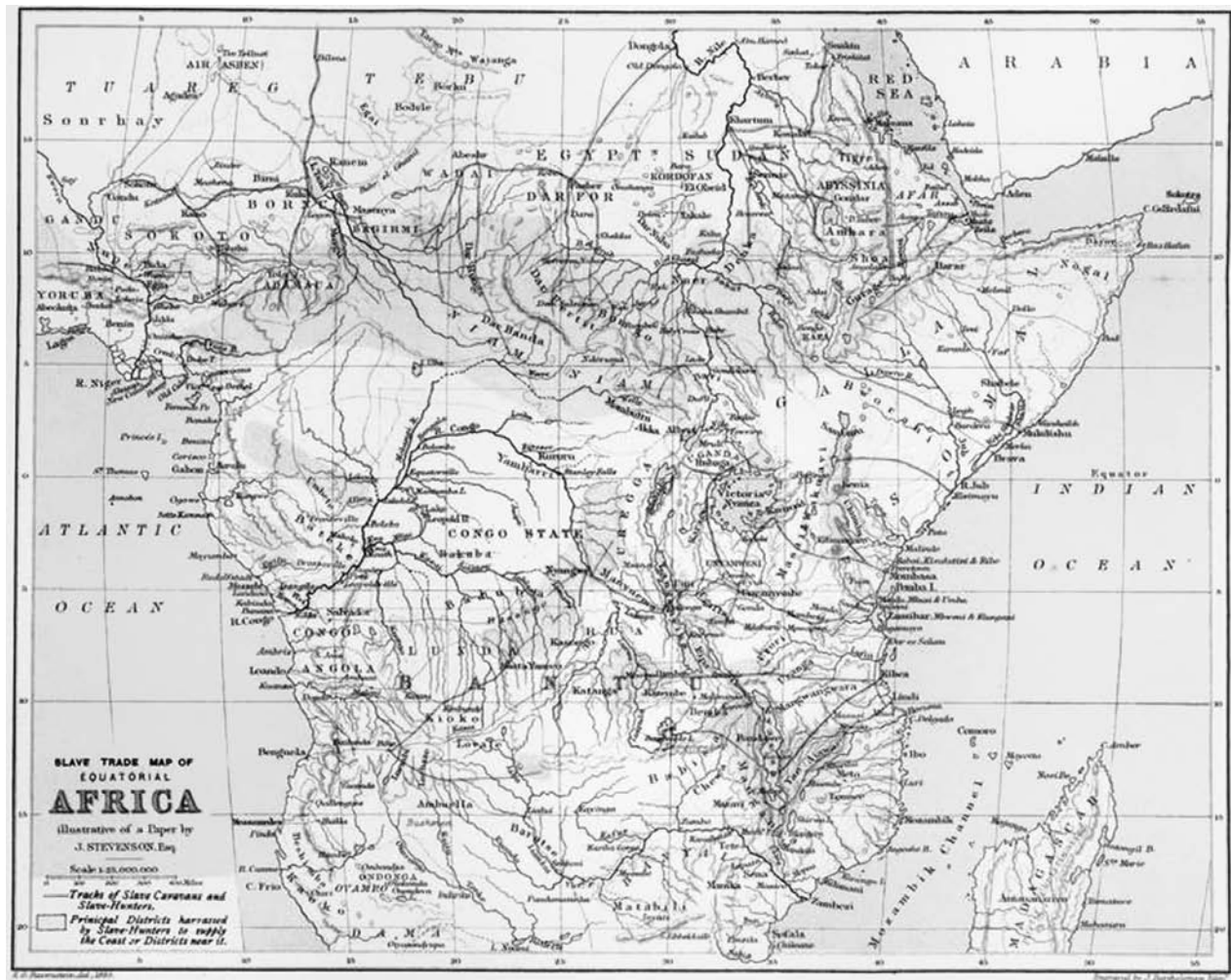
This illustration from a U.S. missionary book, which shows Africans being taken into slavery by African Muslims, is notable for the absence of white traders.

The slave trade became the most contested type of mercantilist capitalism whereby governmental monopolies from Europe tried to trade exclusively with African states one on one without any entrepreneurial inference from either side. For example, *asientos* were contracts by which Spain outsourced the work necessary to keep its American colonies supplied with slaves, particularly young adult men who were thought to be the best suited for arduous field labor by Europeans. Starting in 1518 the Spanish Crown licensed favored companies, usually Portuguese, for a fee to bring in a quota of young adult men. Women (who performed most of the farm work in western Africa), children, and the elderly could be counted only as fractions toward fulfilling the fixed, contracted number. After other European countries besides Spain and Portugal realized that colonies could be viable only with African slavery, they set up their own

slave-trading monopolies. The English Parliament commissioned its own Royal African Company for that purpose in 1672 after a venture in the 1660s had failed. Parliament limited participation to merchants from London. Although leading to unprecedented profits for London-based merchants, this policy of limited participation enraged merchants from other ports such as Bristol, who, in turn, lobbied successfully to have the monopoly ended in 1698. The Royal African Company, however, continued to be a major player in the business until it was absorbed into another yet another licensed company in the 1740s. The actual profits from the slave trade were smaller than people thought at the time. A few merchants tripled their investment on the Middle Passage (the voyage of African slaves to the Americas), but that was the talked-about exception rather than the rule. On average the overhead, the constant turnover in personnel, and the unforeseen dangers due to on-board rebellions and bad weather reduced the yield to the standard 10 percent, which was in line with the yields of less exotic ventures. Thus, on their own, the profits from slavery and the slave trade were not enough to make Britain the first industrial nation, but they were enough to add to the demand needed to make it the first full-blown consumer society. At any rate, during the eighteenth century, when this trade was at its height, Britain dominated the export and transfer of enslaved Africans to the Americas. After the Treaty of Utrecht in 1713, the British gained the *asientos* of the Spanish Empire in addition to their own factories and markets. The guinea, a large-denomination British gold coin, was named for the lucrative nature of the slave trade along the Guinea coast.

Guns

Yet, even the British, with their maritime superiority, relied heavily on the eager and self-interested participation of African governments and elites out for their own profits. The disintegration of the Songhai Empire in Sudan after 1591 stimulated the further political fragmentation of western Africa into more than three hundred microstates and even more

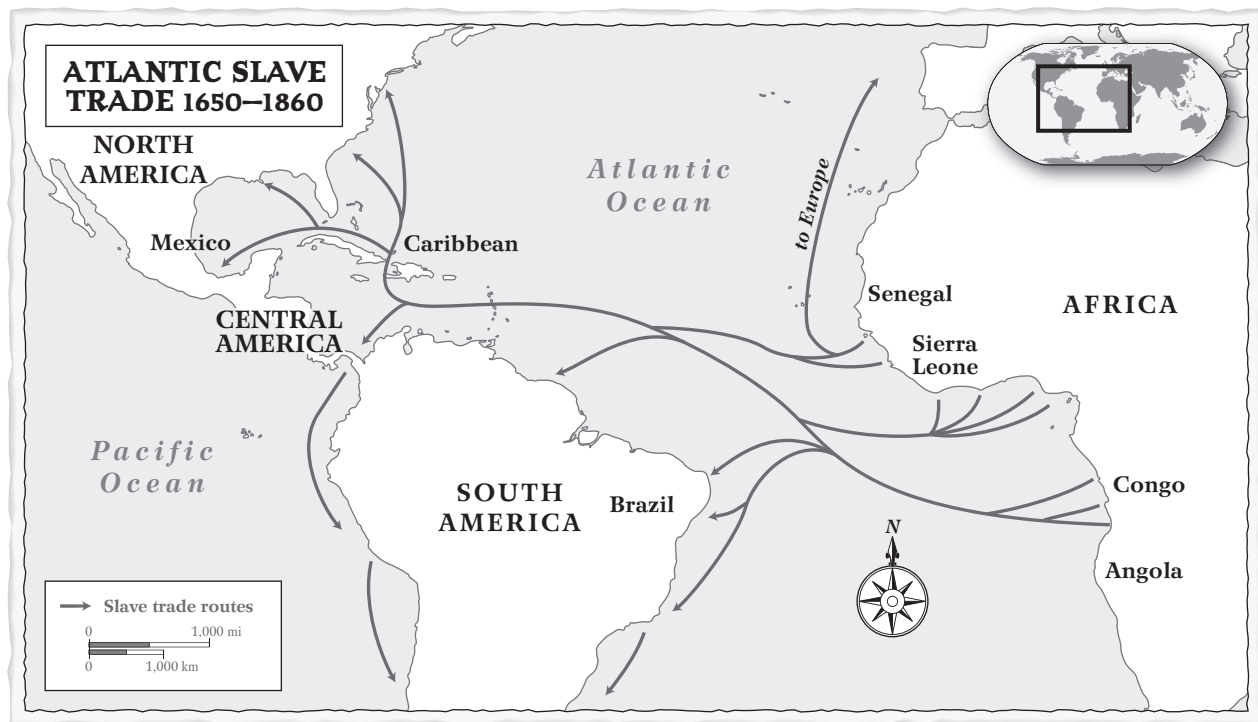


Slave trade map of equatorial Africa, 1887, drawn by Arthur Cornwallis Madan. New York Public Library.

stateless societies, which, in turn, set the stage for numerous territorial and religious wars fueled by the introduction of guns into the area by the Portuguese. Local rulers wanted more guns, particularly after 1650 when the accuracy and durability of guns improved dramatically. In order to get these guns, rulers traded gold initially and later mostly prisoners from neighboring clans and countries. Farther south, one ruler of the Kongo kingdom, Nzinga Mvemba, tried to use the Portuguese against internal opposition and neighboring rivals. He and members of his family even converted to Christianity to cement this alliance. Of course, this fighting within and outside Kongo produced prisoners, stimulating more Portuguese interest and involvement in the country than the ruler had originally wanted. He moved to confront the Portuguese, but it was too late. After the Portuguese had insinuated themselves into Kongolese trade, he could not preclude the long-term effects of

civil war, resulting famines, and the slave trade upon his country. The Europeans also needed African help in part because of the disease environment, for which they were not prepared. Most sailors and agents along the western African coast never returned home to enjoy what little income they had gleaned from the slave trade. Because yellow fever and malaria were dangerous to their own European employees, both governments and freelancers preferred African and biracial (of mixed white and black ancestry) contractors who could work at interior trading posts without getting sick.

Overall, the transatlantic slave trade, with its infamous Middle Passage, ensnared roughly 11 million people between 1443 and 1870. Historians continue to debate the exact number of slaves, but the difference in numbers largely comes about because of the question of at what point in bondage historians should start counting. In 1969 Philip Curtin, using



slave ship and archival records, published the first well-documented attempt to count how many people were enslaved by the transatlantic slave trade. More recently other scholars have pointed out that if historians use only slave ship records that show how many of the enslaved boarded for the Middle Passage, that leaves out the millions more who perished in forced marches to the coastal factories. The historian Joseph C. Miller has noted that, in reference to the Angolan slave trade, only 64 percent of the people initially detained would actually make it alive to the slave pens of Luanda for embarkation to the New World. However horrific and brutal itself, the Middle Passage was truly only a transition from frequent fatalities along the trails to the ships to even more mortality after slaves were in the Americas, particularly after they were in the death traps of sugar plantations and precious metal mines. Miller estimates that two-thirds of those people seized in Angola during the late eighteenth century would have died by the fourth year of being a slave on a Brazilian plantation.

Demographics

Slaves became increasingly male, younger, and hailed from more southern locations in Africa by the nineteenth century. As David Eltis and David Richardson have recently concluded, “the demographic

characteristics of the coerced migrant flow from Africa changed from one of rough balance between males and females and the presence of some children in the seventeenth century, to one in which males and children predominated by the nineteenth century” (Eltis and Richardson 2003, 55). This relative lack of enslaved women for export spared western and central Africa from complete demographic and economic collapse, but it failed to mitigate the long-term underdevelopment decried by the scholar and activist Walter Rodney. The triangular trade of guns for slaves to produce druglike staples for a world market addicted African kings and elites to European weapons and manufactured goods and thus inhibited the growth and enhancement of local industries outside of slave trading. When the slave ships stopped coming, local leaders scrambled to find appropriate substitutions.

Indeed, after European countries and the United States started to abolish the transatlantic slave trade after 1807 and then slavery itself after 1833, slave trades were again primarily associated with interior Africa, the Islamic world, and the Indian Ocean basin. Although Brazil and Cuba would continue to import slaves long after other plantation societies had ceased to do so, slave trades actually increased most in volume and frequency within Africa after 1800 as jihads proliferated and sellers looked for alternative

A free race cannot be born of slave mothers. • Margaret Sanger (1879–1966)

markets. Most deceptively, a most virulent wave of European imperialism in Africa and Asia during the late nineteenth century was rationalized in part as an effort to stamp out slavery and slave trades. Accordingly, slave trades today are met with disapproval from the global community, with the genocidal wars in the Sudan and its enslavement of captives being the most glaring instance.

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See also Imperialism; Labor Systems, Coercive

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Smith, Adam

(1723–1790)

SCOTTISH ECONOMIST

Adam Smith, a famous eighteenth-century Enlightenment economist, is considered the father of modern economic theory and the principles of capitalism. The comprehensiveness of his book *Wealth of Nations* has ensured its continued importance in the field of economics.

Adam Smith was born in Kirkcaldy, Scotland, in 1723 as the posthumous son of a customs comptroller. The only child of a widowed mother, he remained very close to her to the end of her life. Smith never married, but kept a steady company of friends, including the philosopher David Hume and the historian Edward Gibbon.

After spending his early years at home, he matriculated at Glasgow College in 1737 at the age of fourteen. After three fruitful years at Glasgow he went on to Oxford University, which was a disappointment. Like contemporary Scottish intellectuals, Smith found Oxford University to be anti-Scot, stagnant and uninspiring, and generally unfit to promote intellectual activity. However, he stayed at Oxford for six years, and was less critical of it than his contemporaries. His studies through the years covered mathematics, Greek, Latin, moral philosophy, and other topics. In 1746 he returned to Kirkcaldy and his mother, with whom he stayed, unemployed, for two years.

In 1748 Smith successfully started as a lecturer at Edinburgh University. In 1751 he obtained the Chair of Logic, and one year later the Chair of Moral Philosophy, a position he held for twelve years, during which he wrote his first significant work, *Theory of Moral Sentiments*, published in 1759 to popular acclaim. The *Theory* was based on his university lectures and focused on morals for the common man,

based on the concept of “fellow-feeling.” Crudely explained, fellow-feeling is our imagining the feelings of another person reacting to a situation, thus feeling a milder version of his feelings. That feeling gives rise to sympathy, and through that, to righteousness or its opposite. As an example Smith mentions our sympathy for a man whose son has been killed; we sympathize with, or fellow-feel the pain of his loss as we imagine our feelings if it was our son, and we naturally approve of his wish for justice and revenge. Right action in this case is seeking justice, which for Adam Smith includes revenge, in a manner approved by the general audience. It causes the feelings of righteousness in others because the sense of fellow-feeling makes them feel that there is a right response, in this case justice and revenge. If the man’s son instead died from an incurable illness, the general audience would sympathize with his loss as before, but it would give rise to general feelings of disapproval if the man wanted to see the doctor hanged, as the doctor had done nothing wrong. The feelings of righteousness thus depend on what appears to the general audience to be an appropriate response to a given situation. Right action is thus the action that naturally gives rise to general feelings of righteousness, while wrong actions are those that give rise to general disapproval.

In 1764 Smith gave up his position to become tutor to the young Duke of Buccleuch on his two years’ tour of Europe, mainly France and Geneva. It gave Smith the opportunity to meet with famous French *philosophes* such as Turgot, Rousseau, and Voltaire, and to participate in the famous salons led by the leading ladies of Paris (one of whom reputedly fell in love with him).



Stipple engraving portrait of Adam Smith, 1805.
Library of Congress.

The beginning of the tour was less auspicious. During nine months in Touraine Smith found little intellectual stimulation and started to write a new book to fight boredom. It took ten years before it was published, but it became his lasting legacy, *An Inquiry into the Nature and Causes of the Wealth of Nations*, commonly known as *Wealth of Nations*. It is debated whether Smith's *Wealth of Nations* was a truly original work, or simply a structured compilation of economic thoughts making their way round the Parisian salons. Certainly, France acquainted Smith with both defenders and attackers of the economic theories of physiocracy (economic theory, originally promoted by Quesay, court physician to Madame Pompadour, promoting the theory that land and agriculture is the only basis of real wealth) and mercantilism, and probably his own later attacks were at least inspired by the criticisms already prevalent.

In 1766, Smith returned to Britain, visiting London for six months, then on to Scotland. There he continued his work on the *Wealth of Nations*, wrote other minor works, and oversaw new editions of his *Theory*. During those years, Smith held no formal positions, although attempts were made to get him a new tutorship or a position with the East India Company.

The publication, in 1776, of *Wealth of Nations*, universally admired for its theories and the quality of its writing, brought Smith to the academic forefront. It is debatable whether Smith changed his concept of human nature from his *Theory* to the *Wealth of Nations*. In the latter he clearly states that self-interest is rightly the basic motivation of human action—especially economic action—while the former is more unclear as to whether self-interest alone is a basis for moral action. The discussion is of particular interest to those who argue that the ideas in the *Wealth of Nations* came from the French *philosophes*. Whether Smith is considered original or not, it must be conceded that his work gave the clearest organized presentation of those ideas and brought them from the specialized discussion forums to the general reader.

Smith focused on topics such as the division of labor, self-interest as the main principle of economics, national wealth as represented by production capacity rather than by stocks of gold (introducing in a rough form the concept of gross national product), free markets, a theory of real price, a theory of rent, and not least, the principles of the market forces. In short, he described the theoretical basis of the economic system known today as capitalism. Notably, his theory of the division of labor did not consider the new industrial revolution, but was entirely based on human labor. His most famous example is that of the pin makers. He explains how one man completing all the processes of making a pin by himself can produce a maximum of ten pins a day, while ten men cooperating and specializing in each part of the process can produce 48,000 pins a day. The advantage of specialization is made clear, but it is characteristic

It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages. • Adam Smith (1723–1790)

of Smith that he was aware of disadvantages as well, and pointed out that the workers in time became bored and lost the feeling of connection to their work, a problem that Karl Marx dealt with nearly a century later. While his theories on specialization, self-interest, national wealth, and market forces have generally been accepted, those on real price as determined by the labor it takes to produce or procure an item and rent based on use and reasonable profit are commonly considered confused, a fact that he admitted himself. In total, however, the *Wealth of Nations* must be considered the first detailed work of modern economic theory, and its comprehensiveness has ensured its continued importance in the field of economics.

In 1778 Smith was made commissioner of customs for Scotland, which allowed him a comfortable salary for life, added to a pension from his old student, the Duke of Buccleuch, giving Smith economic liberty. His remaining years were mainly spent making revisions to his earlier works, especially the *Wealth of Nations*, and participating in discussions with his contemporaries. In 1784, his mother, with whom he lived most of his life, died, leaving him desolate and in rapidly declining health. In 1790 he published his last work, a new edition of his *Theory*, which was shortly followed by his death and the burning of virtually all his unpublished papers in accordance with his own wish.

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See also Enlightenment, The; Economic Growth

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Social Sciences

The discipline of social sciences typically includes anthropology, economics, political science, and sociology—although psychology and history sometimes find their way into the mix. The social sciences and history, however, especially world history, are natural partners since both study the same phenomenon: collective human life.

Scholarship and instruction at contemporary universities are organized into disciplines that are often grouped together into a comprehensive set of discipline types. In the United States, the division is often into natural sciences, social sciences, and humanities. The social sciences typically include anthropology, economics, political science, and sociology but the boundaries are not fixed. Psychology inhabits a borderland between social and natural science, and history is sometimes grouped with the social sciences and sometimes with the humanities. For example, an article on some aspect of indentured service in eighteenth-century America could appear in an economics journal, a political science journal, a sociology journal, or a history journal. At the same time, each social science discipline includes many subdisciplines, each of which has its own journals, scholarly meetings, and often their own paradigms.

Of all the social sciences, only history appears to go back to ancient times. But this is somewhat deceptive, because the social sciences existed in some form long before their modern names took hold, and history also went through a transformation in the nineteenth century. For example, Aristotle, Mencius, Li Si (Li Ssu), and Machiavelli were political scientists long before the term *social science* was coined, while

the modern historical method dates only to the nineteenth century.

The Natural Sciences

The social sciences emerged as modern disciplines after the natural sciences and in imitation of them. In English, though not in other languages, the word *science* used alone generally refers to natural science, which tends to put the social sciences in the position of having to defend their right to be called sciences. Social science can best be understood in its dual aspect as an imitation of natural science and in contrast to natural science.

Humans have acquired knowledge about nature and about each other since before they were fully human. More systematic knowledge was developed by literate civilizations around the world in the last millennia BCE. In spite of the considerable achievements of the Arabs, Babylonians, Chinese, Egyptians, Greeks, and others, the natural sciences in their modern form did not emerge until the scientific revolution of the seventeenth century.

Two remarkable characteristics of modern natural science are its high degree of consensus about method and the rapid advance in the creation of knowledge. Scientists are largely in agreement about what is known in their field, what the problems are, how to go about solving those problems, and what constitutes a solution. This consensus is now often called a *paradigm*, a term coined by the historian and philosopher of science Thomas Kuhn in *The Structure of Scientific Revolutions*.

The social sciences do not generally operate within such agreed-upon paradigms. If a new disease appears



An anthropology student sorts artifacts recovered from an archaeological site. He is part of a team studying traditional farming techniques and social life in eighteenth-century New England.

in the world, scientists can usually figure out the cause, how it is spread, and some of the measures to take to prevent the further spread. By contrast, when war breaks out, the level of consensus among social scientists is far lower and the approaches they take to explain the war are much greater.

From Natural Science to Social Science

Newton's success in formulating a universal law of gravitation made a great impression on thinkers in the eighteenth century, spawning numerous attempts to create an analogous science of human society. The philosopher David Hume (1711–1776) aspired to become the Newton of what he called the “moral sciences,” while the early nineteenth century utopian socialist Charles Fourier (1772–1837) believed he was the Newton of psychology. The most successful of these Newtons was Adam Smith (1723–1790), the founder of modern economics. In 1776, he published *Wealth of Nations*, which set out to explain the circulation of goods in human societies. For Smith, the force that moved goods was self-interest, just as gravity was the force that moved heavenly bodies.

The ever-increasing success of the natural sciences in the nineteenth century intensified the call for a science of society. Auguste Comte (1798–1857) was the most famous propagandist for a new social science.

Comte argued that human thought went through several stages, culminating in a scientific stage. Different areas reached the scientific stage at different times. Now, Comte argued, it was the turn of *sociology*, a term he coined for the new science of society. Comte is often believed to have advocated that sociology imitate physics, but Comte did not believe that there was just one method for all the sciences. Instead, he believed that each field had to develop its own method. Physics was mathematical, but biology, Comte believed, had its own nonmathematical method, and he argued that sociology would have to develop yet another method.

Another important difference between the natural and the social sciences is that unlike physicists and biologists, social scientists may inadvertently change the humans they study. When an entomologist studies wars among ants, no matter what she learns, it will not affect how and when ants conduct war, but when a political scientist or sociologist studies human war, the results may alter human behavior and even negate the results of the study.

Professionalization and Specialization

In the nineteenth century, the sciences became increasingly specialized, professionalized, and institutionalized. Men, and it was almost always men,



became fulltime physicists, chemists, or biologists. Departments were set up at universities, and journals specializing in a single discipline were founded. The modern scientific disciplines were born, and as the twentieth century progressed, subdisciplines multiplied. Scientific knowledge, both theoretical and practical, increased rapidly. Science became one of the pillars of modern industrial civilization. The social sciences followed the same course as the natural sciences. By the end of the nineteenth century, various fields of social science—anthropology, economics, political science, psychology, and sociology—had achieved the institutional form we now typically encounter as departments in colleges and universities.

Anthropology

Anthropology is usually divided into physical anthropology and cultural anthropology. Physical anthropologists, who study the physical characteristics of human beings in all their variability, generally reject race as a biological category and concentrate instead on complex genetic variability. This can be very useful to historians—for example, DNA evidence can help trace human migrations for which there is inadequate documentary evidence.

For cultural anthropologists, culture includes all the ways humans learn to behave. They are best known for studying the culture of “primitive” peoples—small, nonliterate societies. Among their discoveries is the finding that the people who live in these simpler societies are quite complex in their ways of life. In the latter part of the twentieth century, as isolated small societies became scarce, anthropologists began to adapt their techniques to more modern societies, and the anthropological definition of the term *culture* entered into common language, as in “Latino culture” or “corporate culture.”

The findings of cultural anthropologists are of great interest to world historians, who are interested in the progression from one type of society to another. By looking at hunter-gatherers now, or in the recent past, historians can catch a glimpse of how all humankind lived before the development of agriculture. By

reading studies of autonomous horticultural societies and of larger chiefdoms they can see how more complex politics developed as sovereign units became larger.

Economics

As Adam Smith said, economics is the study of how goods and services circulate. Most economists study market or capitalist economies in which exchanges of goods and services are largely voluntary, and even when economists study non-market phenomena, such as taxes and government services, they use techniques adapted from studying markets. Of the social sciences, economics is the most like a natural science. Economists use mathematics extensively and most work within an agreed-upon paradigm.

Economics is usually divided into microeconomics and macroeconomics. Microeconomics is the study of markets for individual goods and the behavior of individual economic units, including both individuals and companies. Macroeconomics is the study of whole economies, usually at the level of a country, but including international economics. Macroeconomics is more relevant for historians, who often want to include a discussion of the economy in their studies.

History and economics meet in the well-established field of economic history, a subfield of both economics and history. Economic historians study one of the most important aspects of the human past, economic changes, using techniques of both economics and history.

Development economics, which studies how some countries became more developed than others and as a result have higher standards of living, is a related subfield. The questions it asks is of vital importance to the poor of the world, but also crucial to understanding how the world developed in the last two centuries.

Unfortunately there is no consensus among economists on the necessary and sufficient causes of economic development. Economic historians can teach us a great deal about how Britain became the first industrialized nation, but do not agree about why Britain, not France or China, was the first to industrialize.

The Social Sciences are good at accounting for disasters once they have taken place. • **Claude T. Bissell (b. 1916)**

Political Science

Political science, the study of how people are governed or govern themselves, goes back to Confucius and Mencius in China and Plato and Aristotle in Greece. These ancients were concerned with how the state worked and, more importantly, with how the state should work. The tradition of examining these questions continued with such familiar writers as Niccolò Machiavelli (1469–1527), John Locke (1632–1704), and James Madison (1751–1836). The intellectual descendants of these political theorists continue to work within the field of political science, and their subfield is called political philosophy. As its name implies, political philosophy is close to philosophy in method and content. It is also close to intellectual history, but there is a difference. A political philosopher and an intellectual historian may look at the same subject—for example, James Madison—but the political scientist will tend to look at Madison for what he can tell us about politics, while the historian will try to show how Madison's thinking is a product of his time. The modern field of political science emerged at the end of the nineteenth century. As the name implies, many of the new political scientists wanted to make the discipline more scientific. They wanted it to be more relevant and more empirical so it would be better able to study the state as it worked in reality. Most contemporary political scientists belong to this tradition and carefully study various aspects of present-day politics in a democracy, including voting behavior, the influence of lobbying, and the relationship of state and local governments. Some political scientists use mathematical techniques and, as in other social sciences, there is a lively debate within the field about just how scientific political science is. For the study of world history, the most important subfields of political science are political philosophy, international relations, and comparative government.

Psychology

Psychology, the study of both the mind and the brain, belongs to both the social and the natural sciences. Although the focus of psychology is on the individual,

not the group, it is considered a social science because the individual is embedded in one or more groups. Psychologists, like other social scientists, apply their knowledge to human problems, ranging from mental illness to career choices, and a large proportion of psychologists work outside of the university. Many aspects of psychology are of interest to historians. The study of the authoritarian personality can throw light on dictators and their followers; the study of the effects of stress on individuals and groups may help explain historical circumstances. Some findings of social psychology suggest reasons why human groups are sometimes vicious and sometimes altruistic. Psychohistory, a subfield of history, uses psychology's insights to illuminate the personalities of major historical figures such as Martin Luther (1483–1546), Mohandas Gandhi (1869–1948), and Adolph Hitler (1889–1945), as well as to analyze political movements. For students of world history, one interesting and controversial question is: how much has human psychology changed over time? Neither historians nor psychologists are agreed on whether, or in what ways, the human psyche is different now than it was two hundred or two thousand years ago. Here psychology meets anthropology and we can ask to what extent human psychology is the product of culture.

Sociology

Sociology is the study of human groups from the very small to the very large. Unlike anthropologists, who generally study small traditional communities (*Gemeinschaft*), sociologists tend to study modern, relatively impersonal urbanized societies (*Gesellschaft*). They study myriad aspects of these societies, from marriage to bureaucracy to social mobility. In the nineteenth century, the founders of sociology formulated grand historical theories. Among the main practitioners of this proto-sociology were Comte (the inventor of the word *sociology*), Herbert Spencer (1820–1903), a social Darwinist who popularized sociology, Karl Marx (1818–1883), and Alexis de Tocqueville (1805–1859). Each of these thinkers explained historical change, mainly European historical change, in terms of a different but broadly

evolutionary general theory. In the late nineteenth century sociology became an academic discipline because of the work of men like Emile Durkheim (1858–1917) in France and Max Weber (1864–1920) in Germany, who retained a broad historical outlook while abandoning the interesting but unproven grand theories of their predecessors. A classic example of the use of sociology to illuminate historical trends is Weber's famous work *The Protestant Ethic and the Spirit of Capitalism*, which shows how the Protestant mentality contributed to the rise of capitalism.

The nineteenth century saw numerous attempts to understand the problems of society: poverty, crime, race, social conflict, and so forth. At the same time, more systematic ways of examining such problems were undertaken and governments began to publish more systematic statistics. In the twentieth century, as sociology became a profession, sociologists began to develop more rigorous approaches to the study of society, and especially of social problems. Sociology, as it developed in the twentieth century, can be contrasted with economics. Economists assume a society made up of rational individuals, each of whom is trying to maximize her or his personal well-being. For sociologists, economic interactions are important, but sociologists are interested in how they are embedded in wider social interactions. Economists generally believe voluntary exchanges between free individuals are mutually beneficial. Sociologists, on the other hand, emphasize that free exchanges are not so free because they are constrained by all sorts of social conditions such as the inequality of power and social norms. Sociologists stress that people are not poor or "deviant" because of their personal deficiencies. They are interested in the fact that some individuals and groups have more power than others and in the way they use their power to dominate and gain the material and psychic advantages available in their society. Not surprisingly, sociologists are often critical of society as it is.

A Natural Partnership

The social sciences and history, especially world history, are natural partners since both study the same phenomenon: collective human life. Unfortunately,

much of the time they travel in separate compartments. This is partly due to the high level of specialization of modern scholarship. It is difficult to keep up with the main developments of even one discipline, and keeping up with several is beyond any person's capacity. Interaction between fields of study is also difficult because different disciplines have very different ways of approaching how humans interact. But it remains important for world historians to learn from and use all the social sciences.

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See also Anthropology; Sociology

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Sociology

Auguste Comte (1798–1857), the French philosopher who coined the term “sociology,” defined it as the systematic study of society, and the accumulated knowledge resulting from it, that would help to guide and improve social development. He advanced a “law of three stages”—not about “savagery–barbarism–civilization” but about three stages in the development of human knowledge: theological, metaphysical, and scientific.

Had sociology stayed true to its origins, it would be more central to the study of world history than it now is. Like most bold statements, that one needs to be immediately qualified. It is rarely possible to pinpoint, chronologically or geographically, the absolute beginnings of a broad intellectual tradition. Geographically, it has to be recognized that there were, and are, many different national sociological traditions, and concerns with history—let alone world history—have not been central to all of them. Chronologically, a key insight in comparative history and sociology—the analogy between the interconnected institutions of a society and the interconnected parts of a living organism—can be traced back as far as Aristotle’s *Politics*. Sociologists are also fond of tracing their ancestry back to Ibn Khaldun’s *Muqaddimah* of about 1380 (1958); often described as a “philosophy of history,” it is also one of the earliest discussions of the possibility of a social science and of long-term social change in world history, and it introduced concepts of undoubted sociological significance, such as *social cohesion*.

Precursors

The emancipation of sociology from the shackles of political and moral philosophy that it shared with so many other disciplines in the humanities and social sciences is usually seen as beginning in the French and Scottish Enlightenments and gaining momentum through evolutionary thinking in the nineteenth and early twentieth centuries. Through a study of history since classical times, in his *De l’esprit des lois* (The Spirit of the Laws), first published in 1748 (1949), Montesquieu distinguished between three forms of government—republics, monarchies and despotisms—less on the basis of who exercised power and still less on their respective moral qualities, and more according to *how* it was exercised and *why* each form arose to fit societies of different kinds. Other precursors of a historically orientated sociology include Adam Ferguson (1723–1816) and the Marquis de Condorcet (1743–1794). Ferguson stressed the interdependence of people with each other in societies, and in his *Essay on the History of Civil Society* (1767) he traced humanity’s progression from “savagery” to the “refinement” of “civil society” (the idea of “civil society” returned to great prominence in the late twentieth century, especially in connection with the collapse of Communist regimes in Eastern Europe). Condorcet’s *Esquisse d’un tableau historique des progrès de l’esprit humain* (Sketch for a Historical Picture of the Progress of the Human Mind, 1795 [1795]) similarly traced the entire progress of human society through a series of ten stages from “savagery”—when humans were little better than the animals—to

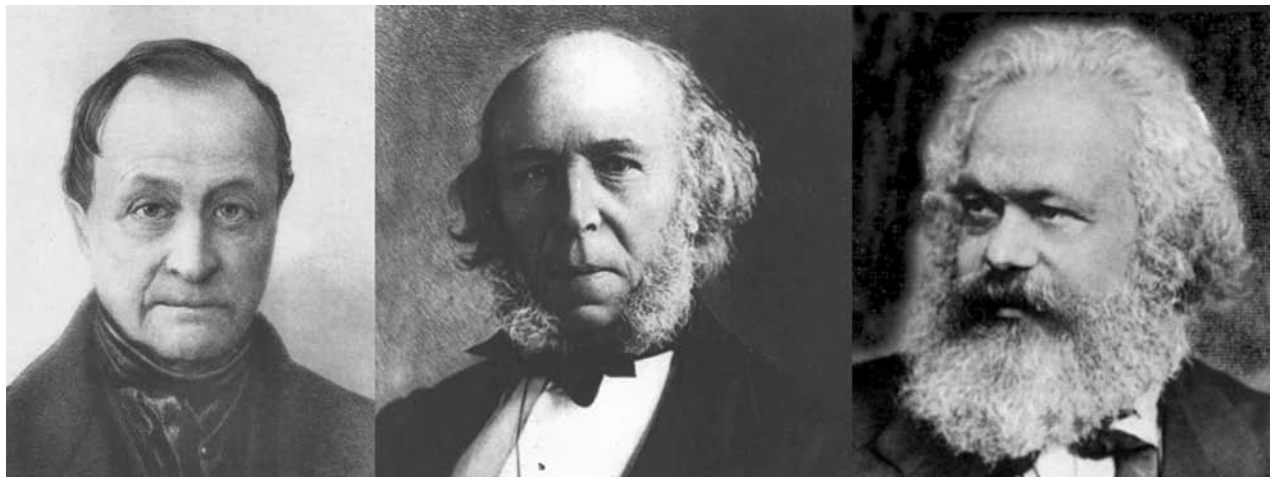
The only thing you will ever be able to say in the so-called 'social' sciences is: "some do, some don't." • **Kelvin Throop III** (twentieth century)

a vision of an egalitarian and enlightened future. Ferguson and Condorcet's visions of uninterrupted human progress set a pattern for many nineteenth-century theories of social evolution, in which human societies traveled from savagery through barbarism to civilization.

Auguste Comte—The Law of Three Stages

Montesquieu, Ferguson, and Condorcet were only “precursors” of sociology, however, in at least a literal sense, since the word *sociology* had not yet been invented. The dubious honor of coining the term belongs to Auguste Comte (1798–1857). Perhaps more clearly than anyone before (unless it were Ibn Khaldun), Comte was concerned with the possibility of a social *science*, the systematic study of society and the accumulated knowledge resulting from it that would help to guide and improve social development. He called this science “sociology.” At that time the modern division of the social sciences into many institutionally distinct disciplines—anthropology, archaeology, economics, political science, psychology, as well as sociology *per se*—had not yet come about, so it must be understood that by sociology Comte meant the social sciences at large, including

the study of world history. He advanced a “law of three stages,” but it was not about savagery–barbarism–civilization; it was rather about three stages in the development of human knowledge. At each stage a different general principle predominated in the ways in which human beings sought explanations of the natural and social world that they inhabited. During a long *theological* stage, explanations were offered in terms of gods and spirits. There had followed a *metaphysical* stage, when explanations were offered in terms of abstractions such as “reason”; this transitional phase was fairly clearly modeled on Renaissance and Enlightenment thought in Europe. Finally, the modern world was witnessing the emergence of a *positive* or *scientific* stage; in the early nineteenth century the word *positif* was nearly a synonym in French for “scientific.” Comte used it to signify the rejection of the speculative philosophy of the past, which had so often advanced propositions in forms incapable of being tested against observable facts. But Comte, the founder of philosophical positivism, was by no means a positivist in the sense that was later caricatured as “crude positivism.” He did not believe that scientific knowledge could be based on observation alone; observation had to be guided by theoretical ideas, but theories had to be modifiable in the light of observation. The corpus of knowledge



Auguste Comte, Herbert Spencer, and Karl Marx, some of the founders of modern sociology.

grew through the interplay of the two mental operations directed at theoretical synthesis and at the observation of empirical particulars. The law of three stages was linked to Comte's notion of a "hierarchy of the sciences." Looking at the history of the main areas of knowledge, he contended that the positive or scientific stage had been reached first in mathematics (which at that date was mistakenly believed to be an empirical discipline), then by astronomy, physics, chemistry, and biology; topmost in the hierarchy and last in development came the new discipline of sociology. The areas of knowledge higher in the hierarchy could not be *reduced* to the lower but represented a higher level of synthesis, the attainment of the scientific stage at lower levels being preconditions for the emergence of the higher. Astronomy had in Comte's view entered the scientific stage in antiquity; physics and chemistry had been placed on a scientific footing much more recently; the biological sciences were undergoing rapid development in his own lifetime. Each advance up the hierarchy of the sciences represented an increase not only in humankind's understanding of, but also in its control over, first physical, then organic, and finally social forces. In industrial society, when sociology had attained the scientific stage, social affairs would be studied and then regulated scientifically. Comte encapsulated this idea in his slogan *savoir pour prévoir, prévoir pour pouvoir* (know in order to foresee, foresee in order to be able [to act]). These central ideas of Comte's—despite there being a fairly high proportion of nonsense in his voluminous writings—contain a valid kernel that is still relevant to understanding world history.

Comte's influence was especially marked on the work of Herbert Spencer (1820–1903), who combined it with newly prevalent evolutionary ideas to produce an ambitious comparative-historical taxonomy of the forms of human society. His influence was in turn strongly felt in the development of sociology in the United States (for example, through William Graham Sumner, 1840–1910) and (with Comte) in the work of Emile Durkheim (1858–1917). In the student textbooks, Durkheim, Karl Marx (1818–83), and Max Weber (1864–1920) are now often depicted as the

three founders of the modern discipline of sociology (a curiously unsociological view that diminishes the extent to which they all stood on the shoulders of giants). Yet all three continued their precursors' central concern with understanding the long-term development of human society, so it is paradoxical that in the science they are supposed to have founded this concern became steadily less important as the twentieth century ran its course. The decades after the World War II saw the spread of what has variously been called "developmental agnosticism" (Wittfogel 1957), "hodiecentrism" (Goudsblom 1977) and the retreat of sociologists into the present (Elias 1987). This tendency may in part be the outcome of the sociological profession's wish to measure its achievements against the utilitarian yardstick of usefulness in rectifying the ills of contemporary society. It also had deeper intellectual roots.

The Retreat into the Present

The fact that in the Victorian age, and for some decades in the early twentieth century, there was a widespread and uncritical assumption that the new "civilized" industrial societies were *superior* to other ways of life—especially those that Europeans encountered in their colonies and Americans in the course of their westward expansion—led to an equally uncritical and comprehensive rejection by sociologists (and even more strongly by anthropologists) not just of the idea of progress, but of all study of processes and stages of long-term social development. The genocides of the Nazi era served as the most awful warning of the dangers of regarding categories of human beings as superior and inferior; Sir Karl Popper (1945, 1957) and Robert Nisbet (1969) forged intellectual links between political tyranny and the pursuit of "inexorable laws of historical destiny," which helped for a while to make developmental perspectives almost taboo for many sociologists.

The retreat into the present, however, had begun earlier. The rise after the World War I of the approach within anthropology known as "functionalism," associated especially with Bronislaw Malinowski and

A. R. Radcliffe-Brown, had a strong but markedly delayed impact on sociology. Functionalism involved studying societies as systems of well-meshing “parts” at a given point in time. It was at the peak of functionalism’s influence in sociology during the two decades after the World War II that Talcott Parsons (1902–79) dominated American sociology, and American sociology dominated the world. In anthropology, functionalism had begun as a methodological rule of thumb in field work: it was a reaction against the tendency of Victorian evolutionary anthropologists to resort to “conjectural history” in seeking to explain the customs of preliterate societies, when for the most part any firm evidence about the past of such societies was lacking. Seeking synchronic relationships between patterns that could actually be observed in the field made better sense for anthropologists than speculating about their origins in past time. Why the same ahistorical approach should have had such appeal to sociologists studying societies blessed with abundant written records of their own past development gives more pause for thought. Although functionalism was in retreat in sociology by the late 1960s, developmental agnosticism was then reinforced through the influence of French structuralism, which had drawn its original inspiration from the shift in linguistics from diachronic to synchronic investigations led by Ferdinand de Saussure (1857–1913). The same cast of mind can be seen in the so-called poststructuralist Michel Foucault (1926–1984), and its shadow falls even on the sociology of Pierre Bourdieu (1930–2002), two leading French intellectuals who have attracted numerous followers in sociology across the world. Foucault presents a particularly relevant paradox: he appears on the surface to be studying processes of historical change, but on closer scrutiny he can be seen to depict the dominance of static “discourses” that are mysteriously supplanted through unexplained historical *ruptures* into new dominant discourses.

Historical Sociology

By the end of the twentieth century, there was a definite revival of historical concerns among sociologists,

although historical sociology was now generally seen as one among many minority interests or subdisciplines—rather than the central preoccupation that it was for many of the discipline’s founders. An interest in world history, or in very long-term processes of social change, is however the province of a minority of a minority, among sociologists as among historians. (Furthermore, it is sometimes difficult to distinguish between historically minded sociologists and sociologically minded historians.) A useful distinction can be drawn between two types of historical sociology. The first may be called simply the *sociology of the past*, in which sociological concepts and theories are used to investigate groups of people living in some specific period in the past. This kind of research does not differ fundamentally from research into groups of people living in the present: it is merely that documents form a larger part of the evidence than they would generally do in research into the present, for the very practical reason that dead people cannot fill in questionnaires or respond to interviewers. As against this sociology of the past, other sociologists seek to discern and explain longer-term *structured processes* of development.

The distinction is not hard and fast. For example, Norbert Elias’s *The Court Society* (2006)—among his works the most widely admired by historians—deals with a relatively closely defined place and period (France and its royal court in the century before the French Revolution), but his underlying concern is with more general processes of development. Still less is the distinction one of academic worth. Many of the finest examples of historical sociology are instances of the sociology of the past. To put it perhaps oversimply, their impulse is comparative rather than developmental.

The scale on which comparison is pursued or invited varies enormously. At one end of the scale, two widely admired books may be mentioned: Kai T. Erikson’s *Wayward Puritans* (1966) and Leonore Davidoff’s *The Best Circles* (1973), studies respectively of deviance in colonial New England and of behavior in nineteenth-century London high society. They are excellent examples of the sociology of the past. Their



value, however, is not dependent on the fact that they are studies of the *past*: they are in effect contributions to the understanding of deviant behavior and of endogamous status groups irrespective of time. The arrow of time may also be reversed for comparative purposes: a present-day study may prove stimulating when studying the past. For example, Stan Cohen's modern classic, *Folk Devils and Moral Panics* (1972)—a study of battles between rival groups of motorcyclists and motor-scooter riders in Britain and of the public reaction to them—might usefully be read by historians laboring at the large body of research on witch crazes in the past.

Other examples of the sociology of the past, but on a more macrosociological scale, are studies like Barrington Moore's *Social Origins of Dictatorship and Democracy* (1966) and Theda Skocpol's *States and Social Revolutions* (1979). They explicitly set out to study comparable episodes at different periods in different societies. Taking a small number of episodes, they attempt to generalize to similar situations, past, present, and future. Yet they do not advance any theory of social development over the longer term.

The minority of the minority are those sociologists whose interest centers on the construction of modes of long-term developmental processes. They include notably Immanuel Wallerstein, whose *The Modern World-System* (1974, 1980, 1989) is in effect a massive attempt at an historical disproof of David Ricardo's apparently timeless "law of comparative advantage." Wallerstein presents what is in effect a very long-term illustration of the principle of "path-dependency," showing how initially small inequalities in ties of interdependence between societies and economies have been magnified over time to produce huge differences today between what are euphemistically called the "North" and the "South." Another example is that of Norbert Elias, whose massive *The Civilizing Process* (2000 [1939]) advances a theory of state formation based on a study of western Europe during the second millennium CE and links that to changes in the psychological makeup (or *habitus*) undergone by individuals as they become gradually more subject in the course of generations to the social

constraint imposed by the monopolization of violence by the state apparatus. Charles Tilly's work also centered on state formation processes. Abram de Swaan's *In Care of the State* (1988) shows how the development of compulsory education, income maintenance, and public health policies followed a similar sequence over five hundred years in Britain, Germany, France, the United States, and the Netherlands, because a process of the collectivization of risk overrode very different ideological assumptions in the various countries. Michael Mann's *The Sources of Social Power* (1986, 1993) traces the changing relationship between economic, ideological, military, and political bases of power over the entire course of human history. Another large-scale intellectual project is that of Randall Collins, whose work, usually represented as "sociological theory," in fact replicates in scope that of Max Weber; representative books are *Weberian Sociological Theory* (1986), *The Sociology of Philosophies* (1998), and *Violence: A Microsociological Theory* (2008). Finally, it should be recognized that Marxist scholars kept alive the sociological interest in long-term processes of change when they were least fashionable. Perry Anderson's *Passages from Antiquity to Feudalism* (1974a) and *Lineages of the Absolutist State* (1974b) are classics of that tradition.

Perhaps in response to the hodiecentric mood that prevailed in their discipline for several decades—historical sociologists have shown considerable methodological self-awareness. Notable contributions in this area are Charles Tilly's *Big Structures, Large Processes, Huge Comparisons* (1984); the extensive debate about the relevance of rational choice theory in historical sociology (Coleman and Fararo 1992); that about the entire "scientific" basis of historical sociology provoked by Goldthorpe (1991, 1994; cf. Hart 1994, Mann 1994). William Seward's *Logics of History* (2005) and the collections of essays edited by Adams, Clemens, and Orloff (2005).

At what appears and may prove to be a turning point in world history—marked by the financial collapse of 2008—a concern with long-term processes may be returning to the center of sociological

concerns. In particular, the widely predicted decline in American world hegemony looks certain to provoke studies—such as *The American Civilising Process* (Mennell 2007)—of the United States in long-term perspective.

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See also Social Sciences

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Socrates

(c. 470–399 BCE)

ATHENIAN PHILOSOPHER AND TEACHER

The ancient Greek philosopher Socrates was interested in seeking the authenticity of knowledge, and exemplifying and seeking moral integrity. The principal sources for his life and teachings are two of his students, Plato and Xenophon. Both wrote dialogue in which Socrates, as the central character, engaged a variety of people in conversation, the very method of teaching he espoused.

Socrates was born just at the time that Athens was beginning to experience empire; he grew as the Athenian Empire was growing; he survived the long and fratricidal war with Sparta, which destroyed Athenian power; he witnessed Athens's ultimate defeat; he was slain by a new democracy seeking to reestablish itself out of the ashes of the old.

For much of that time, he had acted as a teacher to the wealthy young men of the city, although without taking payment. He taught within a tradition of traveling thinkers and lecturers (Sophists), whose speculations about and interrogations of the natural world represented a genuine attempt to understand the structure and order of things. The style of these Sophists was deductive rather than experimental, and their consuming interest was the description of reality. Such men made their living as itinerant teachers and their reputation suffered principally because they had either to teach for pay or to accept the support of a wealthy patron.

While Socrates, superficially at least, belonged in this tradition, he was neither traveled (he lived his life in Athens) nor did he accept pay (despite apparent poverty). Furthermore, he was less interested in seeking to describe the natural world as he was in probing

the authenticity of knowledge, and exemplifying and seeking moral integrity. Moreover, he did not teach through exposition, but through relentless questioning of his subject. To Socrates, philosophy was, essentially, a conversation rather than a lecture.

For some decades, Socrates had lived a more or less conventional life. An Athenian citizen, he was wealthy enough to serve as hoplite in the Athenian army (the heavily armored hoplites provided all of their own equipment). As a warrior, he had distinguished himself in battle, serving with distinction in three bloody engagements during the Peloponnesian War: Potidaea, Amphipolis, and Delium. According to one story, he saved the life of the brilliant young politician, Alcibiades, at the Battle of Potidaea. At that time, Alcibiades was both his student and constant companion although not, surprisingly, his lover.

Socrates was married to Xanthippe, who bore him two sons. He also fulfilled other duties of a citizen. Socrates was serving as president of the Athenian Assembly in the days after the disastrous Battle of Arginusae. In this Pyrrhic victory, the Athenian fleet had triumphed over a Spartan navy, but a storm in the aftermath of the battle had prevented the victorious Athenians from returning to the site of the battle to collect the casualties in the water. As a result the generals were all accused together, a process which—although highly popular—was contrary to Athenian law. Socrates voted against the proposal, although without support. The entire board of generals was found guilty and executed.

Socrates again demonstrated his personal integrity when, after Athens's defeat in 404 and the imposition of a narrow pro-Spartan regime ("The Thirty Tyrants"), he refused a request to arrest a citizen charged

The unexamined life is not worth living. • Socrates (469–399 BCE)



Jacques-Louis David, *The Death of Socrates* (1787). Oil on canvas. In David's Neoclassical painting, Socrates calmly lectures on the immortality of the soul as he reaches to accept the bowl of hemlock that will kill him. Metropolitan Museum of Art.

with a political offense. Despite his public refusal to cooperate with the tyrants, he was never entirely free of political suspicion after their fall and the restoration of democracy, since a number of them had been his students. It was as much the political activity of his students, most particularly Alcibiades and Critias, as his iconoclastic teaching that led, in 399, to his being charged with impiety. This meant, for the purposes of the charge, bringing new gods into Athens and, more significantly, corrupting the minds of the young. Found guilty by the court, he was sentenced to death and executed through the administration of the poison hemlock.

Our principal sources for Socrates' life and teachings are two of his students, Plato and Xenophon. Both wrote dialogues in which Socrates, as the central character, engages in conversation with a variety of people. Curiously, Plato's Socrates and that of Xenophon are quite different people, with different views and different ways of speaking. They are both, in turn, quite different from the burlesque Socrates lampooned by Aristophanes in his play *The Clouds*.

Whether his views are accurately represented by Plato or Xenophon, or neither, Socrates remained

deeply influential, both in terms of his focus and his method. This is reflected by the fact that the Sophists who preceded him, and whose interests lay in understanding the natural world, are referred to as "pre-Socratics," and the dialectical method of teaching that he used is commonly referred to as "Socratic questioning." He himself wrote nothing, and thus his teaching can only be apprehended through the works of others. Whether he intended this or not, it seems, in retrospect, entirely appropriate.

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See also Greece, Ancient; Plato; Political Thought

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Sokoto Caliphate

For nearly a century (c. 1808–1903) the Sokoto caliphate in West Africa extended a particular form of Islamic rule across much of the Sudanic region south of the Sahara and north of the West African forest zones. The state continued under British rule with more moderate leaders willing to submit to British authority, but the traditions of political Islam espoused by Sokoto's founder, Usman dan Fodio, still remain in northern Nigeria.

Formed following a successful jihad proclaimed by Usman dan Fodio (1754–1817) and initially led by his kinsmen, the Sokoto caliphate in West Africa was intended to be a theocratic state unifying Usman's people, the Fulani, and enforcing their political hegemony over other societies, especially the Hausa states that had previously dominated the region.

Origins of the Jihad

Himself the son of a Fulani teacher, Usman dan Fodio studied with a variety of *shaykhs* (Arabic: teachers, or *shehu* in the Hausa language) in the Qur'anic schools of what is now northern Nigeria. As his knowledge grew, so did his reputation among the Sufi Muslims who shared his devotion to the Islamic Qadiriya Sufi brotherhood popular in the region. He gradually amassed a following among the local population and attracted numerous students. Continuing to preach, he increasingly contrasted what he saw as the righteous path required of faithful Muslims with the

debased religious practices he believed were prevalent among the Muslim Hausa rulers in the region.

As his fame spread and the numbers of his followers grew, the local Hausa ruler of Gobir—a nominal Muslim—made efforts to prevent his further teaching. The situation deteriorated until conflict between Usman's followers and the state, ostensibly over the enslavement of Muslims, led to war in 1804. At that point, Usman dan Fodio began a series of pronouncements encouraging Muslims throughout the region first to flee (an action analogous to the Prophet Muhammad's flight to Medina) what he described as persecution, writing a number of religious and political tracts explaining his position and laying out his vision of proper Islamic governance. Eventually elected caliph amongst his Fulani followers, Usman then proclaimed a jihad of the sword against rulers who refused to adhere to what he described as the pure ways of Islam.

Establishment of the State

The warriors who responded managed to vanquish Gobir by 1808 and soon turned their attention to other Hausa states in the region. Many who had grievances against these states and their rulers came to the Usman seeking his approval for their efforts. To those whose cause he perceived as just, Usman gave a flag that announced that they waged their campaigns with his support. Yet he refused to proclaim himself the expected Madhi (a messiah figure) whom many Sufi Muslims believed would deliver the faith from its numerous challenges.

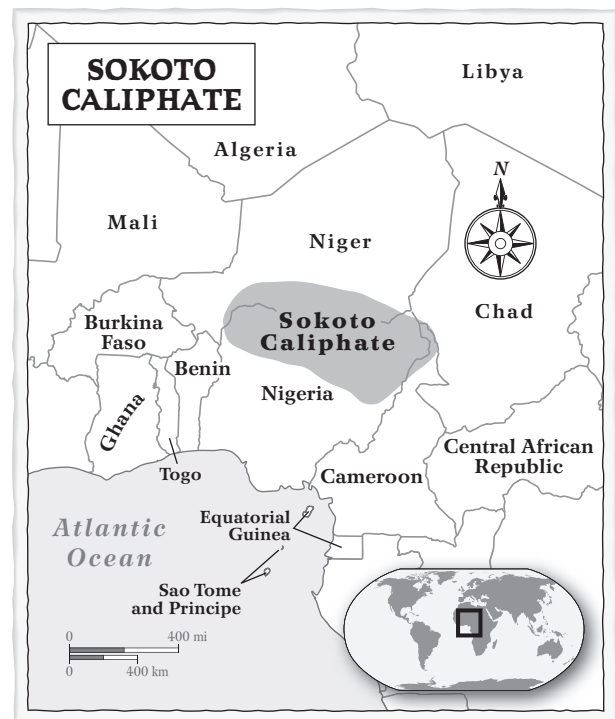
As wise in the ways of the world as he was in matters of the faith, Usman dan Fodio recognized that he was skilled neither at war nor the administration of a state. These tasks he delegated to his brother, 'Abd Allah bin Muhammad, and his second son, Muhammad Bello (1781–1837). They were the leaders who organized further military campaigns and later the decentralized state structure of Sokoto. Each conquered Hausa state was assigned to an emir who ruled under Usman's authority and in accordance with Islamic law, subject to removal if he deviated from that path. By some estimates, Sokoto was the largest African state anywhere on the continent in the early nineteenth century.

Supporters of Usman dan Fodio continued to plan for further expansion of the state. After his death in 1817, authority passed to Muhammad Bello, who ruled as the sultan of Sokoto, building upon his father's legacy. Also a literate and respected interpreter of Islamic tradition, his many writings continued the traditions previously established for the state and added to them, making the Sufi dedication to the expectation of deliverance by the Mahdi the prevailing orthodoxy of the state.

Internal Problems

During the middle of the nineteenth century, however, Sokoto was beset by many difficulties. Efforts to conquer the state of Bornu to the west were never successful, and Bornu's ruler objected in a letter to Muhammad Bello that the forces of Sokoto were not only attacking a people committed to reforming the faith but were enslaving Muslims captured there. (Slavery was not forbidden to Muslims and was practiced in many Islamic societies, but enslaving fellow Muslims was generally frowned upon.) Sokoto derived much of its wealth from slavery, both as a supplier of slaves for the slave trade and in its dependence on slave labor on its plantations and for the tending of its cattle. Some of these slaves were certainly Muslims.

These practices troubled some of Sokoto's religious leaders, but often seemed minor distractions to the



goal of maintaining an Islamic state. Political authorities paid greater attention to defeating numerous rebellions on the fringes of the state and also to dealing with dynastic struggles within the Sokoto elite itself and among emirs of its various quasi-independent provinces. These disputes were generally resolved successfully through traditional military means and thus, inadvertently, served to diminish any modernizing tendencies, which in any case were suspect in a conservative, theocratic state.

British Conquest

Although the Sokoto caliphate was among the most dynamic African political entities at the beginning of the nineteenth century, it was much less so at the start of the next. In Frederick Lugard (1858–1945), who was appointed high commissioner of the British Protectorate of Northern Nigeria in 1900, Sokoto confronted a challenge it could not easily match. Lugard did not favor a diplomatic settlement that might have avoided war, preferring instead a conquest, which

he assumed would be welcomed by the Hausa and poorer Fulani, whom he believed were disgusted by corruption and deviations from Islamic law. But he underestimated the nature and strength of belief even among the common citizenry.

Realizing the British might, even at great cost, defeat one Sokoto emirate after another, the sultan at that time, Attahiru dan Ahmadu (ruled 1902–1903), debated with advisers the best course to follow. But in March 1903 the British forced his hand, defeating his ill-equipped armies at the city of Sokoto itself and effectively bringing an end to the independence of the caliphate. The sultan, however, rallied all who would follow him—and there were many, to the surprise of British officials—in a flight toward Mecca to avoid submission to invaders they considered infidels. British forces tracked their progress and, in July 1903 during what some observers describe as a needless battle, the sultan and almost all who had joined him were killed.

The state continued under British rule with more moderate leaders who were willing to submit to British authority. But the traditions of political Islam espoused by Usman dan Fodio and put into practice during the century of independent rule in Sokoto still remain in the political culture of northern Nigeria. As the influence of British rule diminished late in the twentieth century and as local Islamic traditions

reemerged in their place, the impact of a strict observance of Islamic law continued into the twenty-first century.

Melvin E. PAGE

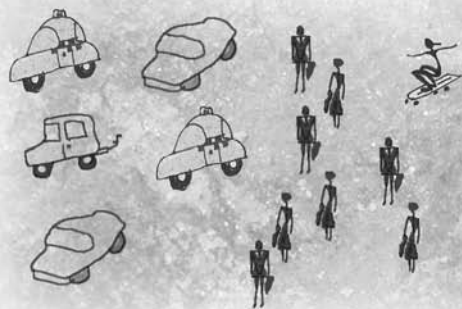
East Tennessee State University

See also Islamic World

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Songhai

The Songhai Empire of the western Sudan came together from peoples whose livelihoods depended on the Niger; by the tenth century the empire thrived along both riverbanks and the bordering lands. During the sixteenth century, the Songhai city of Timbuktu (Tombouctou) was a great center of learning with hundreds of Qur'anic schools and many learned scholars. After some eight hundred years it lost independence to an invading Moroccan army.

The Songhai (Songhay) Empire was the third of the early great states of the western Sudan, preceded first by the Wagadu Empire (Ghana; flourished in the first millennium CE) and then Mali (flourished mid-thirteenth–mid-fifteenth century). The Songhai Empire was made up of many different peoples who gained their livelihood from the Niger River and its bordering lands. Fishermen called Sorko built and operated riverboats and canoes. The Gow hunted river animals such as crocodiles and hippopotamuses. People known as Do farmed the fertile lands bordering the river. All of these together came to be known as Songhai. The empire developed out of the Kingdom of Gao that had been established by the tenth century. By the second half of the fifteenth century the state was expanding along both sides of the Niger River, which flowed in a great curve through the entire country from west to east. At its peak, Songhai stretched from the area of Niore du Sahel, near the border of what are now southern Mauritania and western Mali, to Agadez in the modern Republic of Niger. In 1591, after some eight hundred years of existence in one form or another, this western

Sudanic state lost its independence to an invading Moroccan army.

Scholarship and Evidence from the Niger Bend

During the sixteenth century, when the Songhai Empire was at the height of its power, the city of Timbuktu (Tombouctou) was a great center of learning with hundreds of Qur'anic schools and many learned scholars writing on a variety of subjects. Until recently, the most highly regarded sources for the history of Songhai through the Moroccan invasion (1591) have been the seventeenth-century Timbuktu historians Ibn al-Mukhtar who wrote *Ta'rikh al-fattash* (Chronicle of the searcher) and 'Abd al-Rahman al-Sa'di, who wrote *Tarikh al-sudan* (Chronicle of the Sudan). John Hunwick translated the latter into English in *Timbuktu and the Songhay Empire* (1999). Another important new source for Songhai history is a large collection of inscriptions that were written on tombstones beginning as early as 1013 CE. These have been translated and studied by P. F. de Moreas Farias in his *Arabic Medieval Inscriptions from the Republic of Mali* (2003). Farias has convincingly called into question the historical accuracy of the Timbuktu chronicles. The Hunwick and Farias books are essential to any study of Songhai history.

The Kingdom of Gao

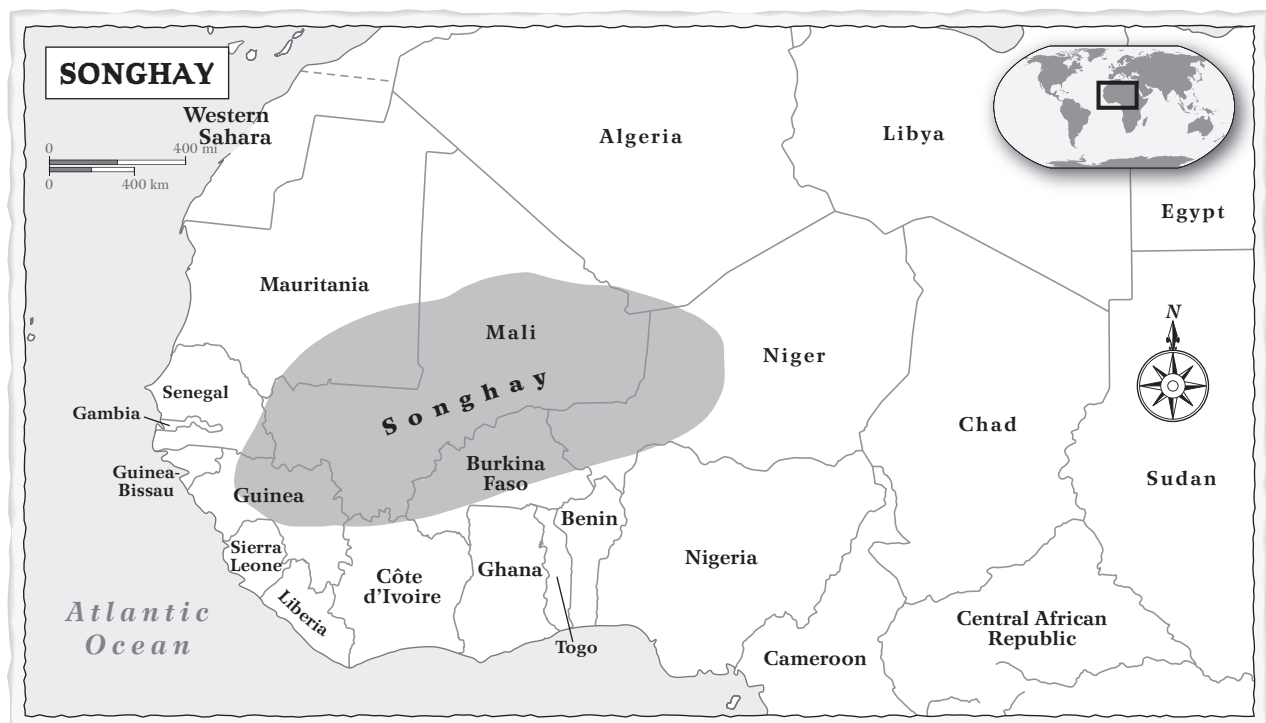
In addition to the people collectively known as Songhai, the camel-riding Sanhaja of the Sahara were prominent in the Niger Bend region. The Sanhaja,

known locally as Tuareg, settled on the left bank of the Niger at a place that came to be known as Gao, or, as the North African traders called it, Kawkaw. By the tenth century the Songhai chiefs of Gao established it as a small kingdom, taking control of the peoples that lived along its trade routes. Tombstone inscriptions mention two early Songhai dynasties, perhaps indicating simultaneous regional rule. The earliest, which dated from at least 1083–1084 CE went by the title *Muluk*, with queens possibly sharing power and bearing the title *Malika*. The other dynasty's rulers were known as *Za* or *Zuwa*, of whom the Timbuktu chronicles make the questionable claim that there were thirty-two (the alleged first *Zuwa* named Alayaman appears to be entirely mythical). Between 750 and 950, Gao became an increasingly important southern terminus in the trading of goods across the Sahara. Commerce in gold, salt, slaves, kola nuts, leather, dates, and ivory brought revenue from taxes that were levied on all goods moving in and out of the empire. Because of this rich trade, Gao became the capital of Songhai. Recently revealed evidence

indicates that Mali gained at least intermittent control of Gao toward the end of the thirteenth century and retained it into the first half of the fifteenth century. Sometime during Mali's hegemony a new dynasty took power, with the rulers carrying the title of *Sii* (a contraction of *Sonyi*, a Manding term). The earliest of the historically documented *Sii* was Sulayman Dama, who attacked the Malian province of Mema sometime before 1464.

Sii Ali Beerli (reigned 1464–1492)

Sii Ali Beerli expanded the kingdom of Gao westward throughout the Niger Bend and developed it into the Songhai Empire. Sii Ali had a large, well-disciplined army that included cavalry and a fleet of riverboats to transport troops. His imperial expansion included the conquest of both Timbuktu and Jenne, which became the second and third most important cities of the empire after Gao. Having won every battle he ever fought and holding power for twenty-eight years, Sii Ali died in 1492 while returning from a military campaign.





A modern warrior in a chain mail shirt from the era of the Songhai Empire sits astride a horse (Kano, Nigeria, 1965).

Askia Muhammad the Great (reigned 1493–1528)

In 1493 Sii Ali's son Abu Bakr Dao (Sii Baru) was defeated in battle by Muhammad Abu Bakr Ture, founder of a new dynasty whose leaders would be known by the title "Askia," which had been a rank in the Songhai army since the first half of the thirteenth century. Askia Muhammad's devotion to Islam brought relief to the urban Muslim populations who had at times been treated harshly by Sii Ali. The askiya's piety also contributed to his prestige and power when he went on pilgrimage in 1497–1498 and the Abbasid caliph of Cairo (not Mecca as it is usually stated) named him caliph, or commander of the faithful, in the western Sudan. As one of the greatest of the Songhai rulers, Askia Muhammad strengthened and extended the empire that had been created by Sii Ali. He created a professional full-time army and built up the Songhai cavalry, expanding Songhai's control far beyond the territories of the Middle Niger. Under Askia Muhammad the Great, as he came to be known, the Songhai Empire established tributary lands northward to the salt pans of Taghaza in the Sahara, westward to former territories of the

Mali Empire, and eastward to the Tuareg sultanate of Agadez. The empire eventually became so large that its army was divided into two, one for the western provinces based in Timbuktu, and one for the eastern provinces based in Gao. Having grown old and blind, Askia Muhammad was deposed by his son Musa in 1529, though he lived until 1538.

We know the names of thirty-seven of Askia Muhammad's sons by his various wives and concubines, though he is thought to have had many more. These sons were mostly half-brothers, and as they grew up they began to compete for power and to quarrel among themselves. Beginning with Askia Musa (reigned 1529–1531) and ending with Askia Ishaq I (reigned 1539–1549), the reigns of the four askiyas after Muhammad the Great were characterized by bloody struggles for power.

Askia Dawud and His Sons

Askia Dawud (reigned 1549–1582) is regarded as the third of Songhai's greatest rulers. He commanded many far-ranging military campaigns, and during the thirty-three years of his reign, as important offices became vacant, he appointed his own sons to the

positions, thus eliminating from high office the offspring of other sons of Askiya Muhammad. From his time forward, all Songhai's rulers were descendants of Askiya Dawud. However, after he died in 1582, warfare once again broke out among brothers competing for power.

With the exception of the sickly Askiya Muhammad al-Hajj (reigned 1582–1586), Askiya Dawud's sons continued the kinds of deadly power struggles that had characterized the reigns of Askiya Muhammad's offspring. In 1588, during the reign of Muhammad Bani (reigned 1586–1588), a bloody confrontation between two imperial officers at the Timbuktu port of Kabara led to a civil war that weakened the Songhai armies and contributed to the empire's subsequent vulnerability to outside invasion. In 1588 Askiya Ishaq II (reigned 1588–1592) came to power, and it was during his rule that Songhai suffered its most devastating defeat.

The Moroccan Invasion of 1591

In 1590, encouraged by a scheming runaway Songhai slave who claimed to be the askiya's brother, Sultan Mulay Ahmad of Morocco wrote to Askiya Ishaq II demanding, among other things, payment of tax on the salt mine of Taghaza, which was in disputed territory halfway between Songhai and Morocco. Askiya Ishaq II replied with a challenging message, which Sultan Ahmad answered by sending an expedition to attack Songhai. The Moroccan army set out at the end of 1590 with around four thousand fighting men both mounted and on foot, many armed with muzzle-loading firearms. They were led by Jawdar Pasha, an Islamic convert of Spanish origin who was a eunuch. The decisive battle between the Moroccan and Songhai armies took place on 12 March 1591 near Tondibi, 48 kilometers north of Gao on the Niger River. The Songhai army suffered heavy losses and retreated across the Niger River, shielded by a courageous rearguard that fought to the death.

Askiya Ishaq II offered the Moroccan invaders 100,000 pieces of gold and 1,000 slaves on the

condition that they leave Songhai and withdraw to Marrakech. When Sultan Mulay Ahmad heard that Jawdar Pasha was inclined to accept the peace offering, he replaced him with Mahmud Pasha, who fought and defeated Ishaq II late in 1591. Fleeing to the ancient Songhai homelands, Ishaq was deposed in favor of Muhammad Gao, who was later treacherously murdered by Mahmud Pasha. Under Nuh, a brother of Muhammad Gao, Songhai continued to resist the Moroccan occupation with guerrilla tactics. For two years they fought successful skirmishes against Mahmud Pasha and his troops. Failing to defeat Nuh, Mahmud finally gave up and returned to Timbuktu, but the Songhai were never able to recover their empire.

The Arma of Today's Mali

The Moroccan invaders established permanent garrisons in all the major cities of Songhai, including Gao, Timbuktu, and Jenne. The Arabic word for *shooter*, as the Moroccan musketeers were called, was *al-rumah*, so the occupying soldiers were called Ruma. Within a generation or so the Ruma lost their connection with Morocco, and by around 1700 there were few of their descendants who could speak Arabic. In the Songhai language Ruma evolved into Arma, the term by which the descendants of the Moroccan ruling elite came to be known. The Arma still form a social class in the cities of Jenne, Timbuktu, and Gao in the Republic of Mali.

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Space Exploration

The quest for greater knowledge and understanding—as well as Cold War rivalry between the United States and the Soviet Union—fueled the modern space race in both unmanned and manned spacecraft, but humans have acknowledged the powers of the solar system since prehistoric times. Advanced technologies, and an increasing spirit of private enterprise, open possibilities for new adventures and frontiers.

Since the first people walked the Earth, the heavens have beckoned to the human spirit and inspired the human imagination. The drama of the sky has enthralled forty thousand generations of men and women. From prehistoric times, the sky and its celestial bodies have played key roles in mythology and religion throughout the world. Early American peoples, including the Aztecs of southern Mexico and the Anasazi of the North American Southwest, used the movements of the sun, planets, stars, and moon for calendrical and agricultural purposes and worshipped gods embodying the sun and moon. Similar religious trends emerged throughout the ancient world on every continent, and until the spread of monotheism, nearly every world culture worshipped some aspect of the sky. Hence, although the ancients had relatively little knowledge of the universe, they recognized the power of the heavens.

By medieval and early modern times, astrology, or the belief that the motion of the stars and planets shape the fates of individuals, kings, dynasties, and empires, was influencing the decisions of both political leaders and peasants. Not until the scientific revolution of the seventeenth century was the idea of the stars and planets as physical bodies obeying regular

laws accepted by influential people. For human space travel to become a reality, the work of Kepler, Newton, and Galileo first had to predict the movements and characteristics of bodies in space.

Early Development of Space Travel and Rocketry

Space travel didn't become feasible until the twentieth century. Rocket technology, which would become the basis of all space travel, began with the rocket development work of Konstantin Tsiolkovsky (1857–1935) in Russia and Robert Goddard (1882–1945) in the United States. The Chinese had invented a rocket weapon in 1232 using gunpowder, which was ultimately adopted in technologically sophisticated societies throughout the world. During the eighteenth and nineteenth centuries, various pioneers improved the rocket's effectiveness as a weapon. It is Tsiolkovsky of Czarist Russia, however, who is remembered as the “father of astronautics.” Although he dealt with many aspects of the rocket as an instrument of interplanetary travel, his most important contributions concerned propellants and the rocket design needed to achieve flight into the Earth's orbit and then farther into space. In particular, he discussed the possibility of powerful, controllable liquid propellants, such as hydrogen and oxygen, and multistage rockets. Although Tsiolkovsky accurately predicted many future developments, his writings were not widely read during his life.

The work of the U.S. physicist Robert Goddard also concerned multistage rockets and liquid propellants. In 1926 at a farm in Auburn, Massachusetts, Goddard used liquid oxygen and petrol to send the

first liquid-propelled rocket into the air at a rate of 60 miles per hour. He continued his experiments, with a launch in 1935 ultimately achieving 1,000 feet and a speed of 700 mph. Despite his genius and some financial support from the U.S. government, the reticent and publicity-shy Goddard did not contribute directly to the American space program. However, his reticence paved the way for the Transylvanian and German rocket and space travel visionary, Hermann Oberth (1894–1989), who corresponded with Goddard. Like Tsiolkovsky, Oberth dealt with both detailed engineering and the broader issues regarding space exploration. He helped to spread popular awareness of the rocket and the possibilities of space travel throughout Germany. In the 1920s and 1930s, various rocket societies in Europe and the United States, which included engineers as well as visionaries, met to build rockets as well as to advance their general knowledge of space travel.

Military Rocketry and the Imaginative Vision

Meanwhile, leaders in the USSR, building on Tsiolkovsky's ideas, formed a military organization in 1928 under young engineer Valentin Glushko (1908–1989). The laboratory, called the Gas Dynamics Laboratory (GDL), built solid-fuel war rockets. In 1931, Soviet leaders gained control of another key organization, the Group for the Study of Reaction Motion (known in the USSR as GIRD), which emphasized more powerful liquid-fuel rockets. GIRD had emerged from a core of Soviet engineers and space enthusiasts who dreamed of going to the moon and beyond. The Red Army funded this group as well as GDL. Sergei Korolev (1906–1966), the future mastermind behind the Soviet space program, was one of GIRD's most enthusiastic members. During this era, Korolev focused on rocket aircraft and honed his organizational skills. Through the efforts of GIRD, the USSR launched its first liquid-fuel rocket in 1933. Its success caused Soviet leaders to take a greater interest in the use of rocket technology in weaponry. Ultimately, leaders consolidated GIRD and GDL into

a single organization, RN-II, which made further contributions to rocket development. The tragic advent of Stalin's purges in 1934 threatened the nascent Soviet rocket program. Many Soviet rocket pioneers and space visionaries perished in the purges. Stalin's police imprisoned both Korolev and Glushko, but they managed to survive, working as state prisoners to advance rocketry.

In Germany, the state also harnessed space enthusiasts for military purposes. The most notable of these was Wernher von Braun (1912–1977), who would play a vital role in the United States space program as well as in the German rocket program. Born to a prominent family, von Braun was active in the VfR (Society for Space Ship Travel). He joined the German Army Ordnance Department in 1932 to work on a liquid-fuel rocket with a range greater than any preexisting artillery. In 1937, the group moved to Peenemünde, a new proving ground on the Baltic. Von Braun, who was talented as a manager as well as an engineer, led the rocket development program.

Although the Nazi leadership supported the program only erratically, von Braun and his associates made progress as they dreamed of future trips to the moon and Mars. The V-2/A-4 rocket, or "vengeance weapon," first flew in late 1942. It was much more powerful than any preceding rocket, standing almost fifty feet high, weighing 28,000 pounds, reaching a



Remains of an ancient observatory at Chichén Itzá, Mexico. Photo by Chris Howell.

To see far is one thing, going there is another. • **Constantin Brancusi (1876–1957)**

height of sixty miles, and carrying a heavy bomb. It burned liquid oxygen and ethyl alcohol and had sophisticated guidance and control systems. This rocket was an ancestor to many American rockets, including the powerful Saturn V which would take the first humans to the moon. Workers enslaved by Hitler built most of the V-2 rockets used in World War II. Although the weapons were not accurate, their victims had few defenses against them. In September of 1944, Hitler launched a V-2 bombardment against targets in southern England and liberated Europe. While powerful, these weapons made little difference to the war's final outcome.

Space Exploration and the Cold War

As the Cold War between the United States and the Soviet Union intensified after World War II, both the Americans and the Soviets utilized the survivors of Nazi Germany's military rocket teams. Stalin's rocket program, approved in 1947, was intended to culminate in the production of an Intercontinental Ballistic Missile (ICBM). The Soviet army recreated the V-2 rocket through the SS-I and SS-II rockets, but the Soviet aviation industry avoided rocket technology. The first Soviet ICBM, the SS-6/R-7, was built to carry the heavy Soviet nuclear warhead. However, its most significant flight occurred on 4 October 1957, when it launched the first human-made satellite, *Sputnik I*, into Earth orbit. As euphoria overtook the Soviet Union, the American public reeled in shock. If the Soviets were capable of launching a satellite to fly over American soil, were they not also capable of launching a nuclear weapon to the United States? And why hadn't the United States launched a successful satellite first? Nikita Khrushchev (1894–1971), who succeeded Stalin as Soviet premier in 1958, recognized the symbolic importance of Sputnik. The worldwide perception was that the USSR had overtaken the United States in science and technology; this implied military superiority.

As Americans panicked, President Dwight D. Eisenhower (1890–1969) remained secure in his knowledge of America's military superiority in the areas

of intermediate-range missiles, miniaturized nuclear weapons, bases near the Soviet Union, and spy planes. Just a year after Sputnik, von Braun's Army rocket team managed to launch the first American satellite, Explorer 1, with a modified Redstone rocket, the Jupiter-C. On 1 October 1958, Eisenhower announced the creation of the National Aeronautics and Space Administration (NASA), which would be based on the modest National Advisory Committee for Aeronautics (NACA). Although the military branches wished to carve out a place for themselves in the arena of space-flight, they would not hold responsibility for the high-profile manned space programs of the 1960s.

NASA's first mission, now that the Soviets had beat it into space, was to put a man in space first. NASA called the program Project Mercury. On 9 April 1959, NASA administrator T. Keith Glennan announced the names of the first seven American astronauts who would fly in Project Mercury. The American media and public went into a frenzy over the "Mercury 7," one of whom they believed would be the first man in history to orbit the Earth. Americans viewed the photogenic military test pilots as space warriors who, through their bravery, would save the United States from the spreading "red tide" of communism. In the USSR, however, Khrushchev and Sergei Korolev, the Soviet space program's chief designer, had likewise determined that a Russian should be the first man into space. Indeed, the Soviets won this particular race as well. On 12 April 1961, the cosmonaut Yuri Gagarin, in a *Vostok* spacecraft atop a new A-1 rocket, was launched into Earth orbit. The United States reacted strongly to the news, and NASA administrators and engineers accelerated the pace of Project Mercury.

The first American astronaut was Alan B. Shepard Jr. His fifteen-minute suborbital flight, launched on 5 May 1961, by the von Braun-designed Army Redstone rocket, did not match the Soviet achievement but it did put America back into the space race. However, the Redstone launcher, with a thrust of 75,000 pounds, did not have the power to place a manned spacecraft into the Earth's orbit. For this objective, NASA used the U.S. Air Force's Atlas ICBM, with a total thrust of 360,000 pounds.



Astronaut Buzz Aldrin stands on the moon near the lunar module facing the American flag in 1969.
National Aeronautics and Space Administration.

The Race to the Moon

Following on the heels of Shepard's flight, President John F. Kennedy (1917–1963) made a dramatic announcement to Congress on 25 May 1961. He called for the achievement of landing a man on the moon and returning him safely to the Earth before the end of the decade. Kennedy's announcement accelerated the space race because it gave an increased sense of national importance and urgency to NASA. The agency continued with Project Mercury, but it accelerated development of its lunar landing program, Project Apollo. In December of 1961, NASA announced Project Gemini, which would place two men into Earth orbit for extended periods. Gemini would practice many of the techniques used on Apollo, including

the rendezvous of two spacecraft, the docking of two spacecraft, and spacewalking.

NASA successfully launched astronaut John H. Glenn Jr. into orbit on 20 February 1962, in the Mercury spacecraft, *Friendship 7*. This flight required much more effort on the part of the astronaut, the flight controllers, and the spacecraft, which had to perform critical maneuvers and keep the astronaut alive for several hours. The Mercury program continued with three more flights, concluding with Gordon Cooper's successful 22-orbit flight on 15 May 1963. Mercury had achieved its major objectives of placing a man into Earth orbit and recovering him successfully.

NASA announced Lunar Orbit Rendezvous (LOR) as the Apollo mission mode in June of 1962. With LOR, von Braun's Saturn V rocket, with a thrust of 7,500,000 pounds, would propel a crewed spacecraft, a service module with supplies, and a lunar module toward the moon. Once in orbit around the moon, the lunar module would separate from the command and service modules, carrying two astronauts to the moon's surface while the command module pilot stayed in lunar orbit. The lunar module itself would have two stages, an *ascent stage* and a *descent stage*. When the astronauts finished their exploration of the moon's surface, they would return to lunar orbit in the ascent stage, leaving the descent stage on the moon, and dock with the command module. On approach to Earth, both the ascent stage and the service module would be jettisoned. Only the command module would return to Earth. Although NASA originally thought this method too risky, its weight-saving advantages and the fact that each component could be engineered independently for a particular purpose ultimately made it the most practical of the modes considered. The LOR mission mode determined nearly every aspect of Apollo development, from crew training to spacecraft design to spacecraft maneuvering systems.

Mercury astronaut Gus Grissom and "New Nine" astronaut John Young piloted the first flight of Project Gemini, on 23 March 1965. The Gemini spacecraft, while based on the Mercury spacecraft, was larger

and had a number of more sophisticated systems to allow performance in maneuvering, rendezvous, and docking. Later Gemini flights would dock with the Agena target vehicle, which was really the hollowed-out upper stage of an Atlas rocket fitted with docking adapters. But on 18 March 1965, Korolev dealt the United States another blow when Aleksei Leonov made the first spacewalk, lasting twelve minutes and nine seconds. Leonov and fellow cosmonaut Pavel Belyayev orbited the Earth in *Voshkod 2*, an updated version of Gagarin's *Vostok* spacecraft. Edward H. White III of *Gemini IV* performed the first American spacewalk on 3 June 1965. However, from this point on, American performance in manned spaceflight would consistently outstrip Soviet performance up to the lunar landings.

Between March 1965 and November 1966, ten Gemini flights took place. While the United States set one space record after another, no cosmonauts orbited the Earth. In October of 1965, *Gemini VI* rendezvoused with *Gemini VII*, with the crew of *Gemini VII* spending two weeks in Earth orbit. The first successful docking of two spacecraft occurred during *Gemini VIII*, which was crewed by Neil Armstrong and David Scott. The final flight of the program, *Gemini XII*, solved many problems inherent to spacewalking and helped to refine flying techniques as well as spacesuit technology. With the conclusion of Project Gemini, spaceflight had become operational if not routine, and many of the skills needed for Apollo had been honed to sharp accuracy.

Although Project Gemini had seen some close calls in space, NASA's first major catastrophe occurred on the ground. On 27 January 1967, during a routine ground test at the Kennedy Space Center, the Apollo One command module burst into flames and the three crew members, Gus Grissom, Ed White, and Roger Chaffee, perished through asphyxiation. Investigations showed that while faulty wiring was the immediate cause of the fire, neither NASA nor the contractor North American Aviation had fully understood the need for all components to work together in a complex system. Many at NASA and at North American Aviation believed that the fire gave them



Space shuttle liftoff from the Kennedy Space Center, Merritt Island, Florida. State Library and Archives of Florida.

a new awareness of possible problems and actually facilitated the success of Apollo. The tragedy shook public confidence in Apollo, but, inspired by the memory of John F. Kennedy, Americans continued to support the program.

With many changes now built into the Apollo spacecraft, *Apollo 7*, a test of the command and service module in Earth orbit was launched on 11 October 1968. *Apollo 8*, launched on a Saturn V on 21 December of the same year, successfully circumnavigated the moon with the command and service modules, albeit after the USSR had managed to orbit the moon with an unmanned spacecraft, *Zond 5*. Satellite photos revealed that the Soviet moon rocket, the N-1, might soon be ready to take men to the moon. Project Apollo culminated in the *Apollo 11* mission, launched on 16 July 1969, with commander Neil Armstrong, lunar module pilot Buzz Aldrin, and command module pilot Michael Collins. Two weeks before the launch, a Soviet N-1 moon rocket blew up on its launch pad, effectively ending the moon race. Armstrong and Aldrin touched down on the moon on 20 July 1969, with a television audience of approximately a billion people. Backed by many thousands of workers, managers, and engineering specialists, Armstrong, Aldrin, and Collins met Kennedy's goal and fulfilled the age-old dream.

With Apollo now fully operational, the focus of the program shifted to scientific lunar exploration.

With the exception of *Apollo 13*, subsequent missions made significant discoveries regarding the geological composition and history of the moon using new equipment, such as the lunar rover. The final Apollo mission, *Apollo 17*, splashed down on 19 December 1972. The crew had taken the first photograph of the full Earth from space, underscoring the planet's fragility and interconnectedness.

In retrospect, it is not surprising that the Americans reached the moon before the Soviets, despite early Soviet success. The death of Sergei Korolev in 1966 sealed the fate of a Soviet moon program that was underfunded and subject to corruption, with resources spread too thinly over many design bureaus. The result was less equipment, fewer tests, and weaker technology. The American space program had the benefit of a thriving economy, largely due to its position after World War II, which was much stronger than that of the Soviet Union. Government and private enterprise formed strong partnerships in the United States that benefited the space program through NASA's practice of awarding contracts to aerospace companies who would then build space hardware. Ironically, the democratic-capitalist United States government had better command of its space resources than the totalitarian USSR.

Beyond the Moon

Mars exploration has been prominent in the space programs of the Soviet Union (and later Russia), the United States, Europe, and Japan, with numerous missions and robotic spacecraft having been launched toward or directly at Mars since the 1960s. Mercury has been visited by the *Mariner 10* and MESSENGER missions, the former in 1975, while the latter made a flyby in January 2008. A third mission is due to arrive in 2020. Similar to Mars, Venus has had many missions sent to it; the first was the American *Mariner 2* craft in 1962, but most have been from Soviet Venera craft. Exploration of Jupiter has been undertaken since 1973 by a series of NASA's automated spacecraft, most of them, apart from the orbiting Galileo craft, have been flybys. Saturn too

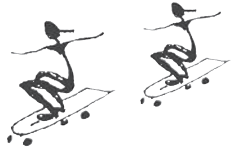
has been explored only through unmanned NASA visits, including flybys by *Pioneer 11* (1979), *Voyager 1* (1980), *Voyager 2* (1982), and the Cassini mission which entered orbit in 2004 and is likely to run into 2010. Uranus has only been explored through *Voyager 2*, with the closest approach coming in January 1986. Similarly, the sole visit to Neptune was the flyby of *Voyager 2* in 1989.

After the Space Race

With the winning of the space race and the advent of détente, America's political will to support large-scale space initiatives dissolved. The Skylab temporary space station project of the 1970s utilized leftover Saturn V rockets and increased knowledge of living and working in space. The Apollo-Soyuz test project of 1975, in which Apollo and Soviet Soyuz spacecraft rendezvoused and docked in the Earth's orbit, marked the first major cooperative venture in space.

During the late 1970s, NASA completed the development of the space shuttle program. Originally intended to serve as a taxi with routine flights to and from a permanent orbital space station, the shuttle instead stood on its own because of NASA's reduced budget. A private company built the shuttle fleet, which had its maiden voyage with the shuttle *Columbia* launching on 12 April 1981. During nearly three decades in service, space shuttles have deployed military satellites, housed numerous science experiments, carried the Hubble space telescope into space, and helped build the International Space Station (ISS). Yet the two major disasters of the Shuttle program, the *Challenger* explosion on 28 January 1986, and the disintegration of *Columbia* during reentry on 1 February 2003, underscored the problems of constant, routine access to space that had plagued the shuttle program since its inception. In both cases, experts blamed the nature of NASA bureaucracy, which had become increasingly inflexible since the days of Apollo.

The Soviet policy of glasnost (openness) initiated under Premier Mikhail Gorbachev (b. 1931) meant that the successes and failures of the Soviet space program could be discussed openly. This policy certainly



helped the success of the Mir space station (1986–2001), the world's first long-term orbital structure for living and working in space. Assembled with updated versions of the *Soyuz* spacecraft, the station proved the feasibility of long-term space habitation, hosting several American crews during its tenure. The fall of the USSR in 1989, although difficult on the Russian program, opened up new commercial opportunities for spaceflight in Russia.

International Cooperation in Space

Since the end of the superpower space race, many other nations have begun to participate in the arena of space exploration. Major European nations joined the European Space Agency in 1980. The agency has contributed key satellites and scientific instruments to Russian, American, and joint endeavors. Additionally, the agency has produced many launchers for commercial use. Groups in Japan, including the National Space Development Agency (NASDA) have also begun to make strides into space with sophisticated technology. The Chinese space program, while younger than and not as versatile as the European and Japanese programs did succeed in putting a man into space on 15 October 2003.

The construction of the International Space Station (ISS) began in 1994. Although NASA has overall responsibility for the project, major components have been built by Russia, ESA, and NASDA. The station has been widely criticized for cost overruns and delays that have consumed much of the NASA budget. However, the station has hosted important research, particularly in the area of pharmaceuticals, and has provided humans with a permanent place to live and work in space.

The Future of Space Exploration

Two major themes currently dominate much of the discourse surrounding space exploration: the possibility of a manned mission to Mars and the widespread privatization and democratization of space travel. For years space enthusiasts of many stripes have been

lobbying for a manned mission to Mars. However, without major political impetus, such as the need to upstage the Russians in the Cold War, American leaders have seen little reason to fund such an expedition, and countries other than the United States do not have the resources for such a mission in the near future. President George W. Bush (b. 1946, in office 2001–2009) announced plans for a permanent lunar base with a Mars landing in the next twenty years, but even with careful budgeting, this will be difficult to complete without a strong national commitment. In 2010, at the beginning of the second year of President Barack Obama's administration, rumors that U.S. plans for future human spaceflights would abandoned were met with harsh criticisms (especially from NASA) until he renewed the goals, which included a Mars landing by 2030.

The flight of the first privately funded spacecraft, SpaceShipOne, designed by the U.S. aerospace engineer Burt Rutan (b. 1943), on 21 June 2004, inspired many entrepreneurs who wish to expand the opportunities for human spaceflight. Using SpaceShipTwo, a reusable sub-orbital spaceplane, Virgin Galactic aims to be taking tourists into space by 2010. Other privateers include Bigelow Aerospace, which has launched two space station modules—*Genesis I and II*—and plans to build an orbiting hotel in space. SpaceX's *Falcon 1*, a liquid-propelled orbital launch vehicle has undertaken two successful flights; *Falcon 9* is scheduled to launch in May 2010. To a certain extent the Google Lunar X-Prize has served to hasten private space exploration through the announcement of a \$20 million prize for the first privately funded mission to the moon. But so has the general desire for space exploration and the need to be the first.

Existing space technology is extremely expensive and space travel is dangerous. These factors currently inhibit space exploration from being immediately profitable and accessible to all. Yet, if you have enough money the Russian space program has been willing to take paying passengers into space. But if dedicated scientists and engineers continue to pursue solutions to the problems of propulsion, spacecraft control, and long-term human survival in space, the

possibility of space exploration for all—both in the Earth's orbit and in interplanetary space—will come closer to our grasp.

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Spanish Empire

The Spanish Empire forms a crucial component of any understanding of world history during the first global age (c. 1400–1800 CE). At its height, it extended around the world; the activities of its officials and subjects, many of whom never set foot in Europe, established and maintained a significant number of the period’s economic, political/military, and cultural networks, and its territories produced some of the most desirable products of global commerce.

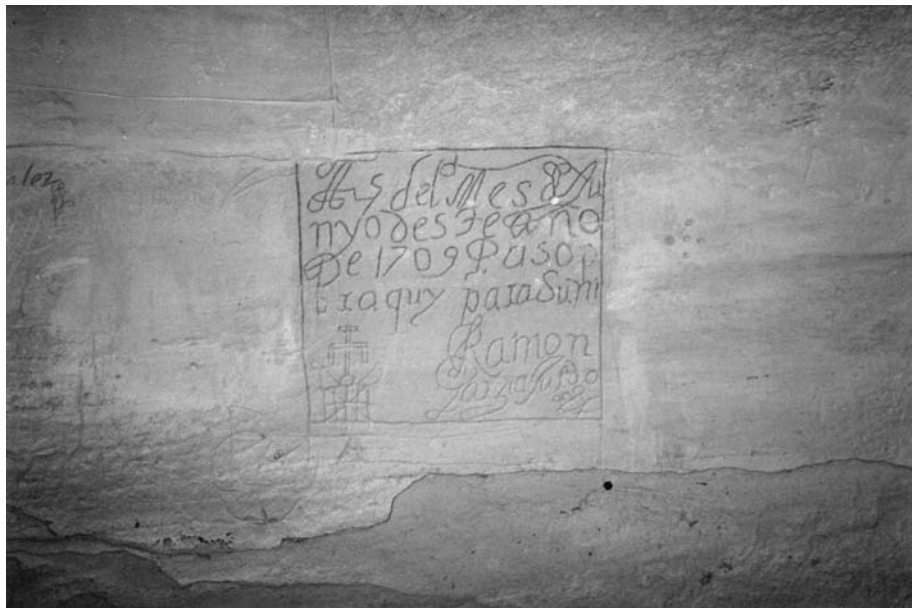
The concept of a “Spanish Empire” has become increasingly controversial. Spain as an entity never existed during the first global age in the sense of a political unit that directed an overseas empire, created and retained for the benefit of the metropolitan center. Instead, before the early nineteenth century, a territorially huge, composite monarchy tied together under the rule of a single dynasty a variety of domains, which included the Crown of Portugal between 1580 and 1640. The accession of a new monarch, Charles IV (1748–1819), was still marked in Manila when the news finally arrived in 1790 with cheers of “Castile, Castile,” and leaders of a newly constituted country of Spain only decided in 1837 to govern its remaining overseas territories by special laws.

Historiographical Controversies

Two types of ideological position drive most of the really contentious debates about the history of this composite monarchy. First, a large number of contemporary countries have originated entirely or in part with the independence of its domains, and the resulting nationalistic historiographies, including that

of the modern country of Spain, embody understandings of it as putative empire. From their differing local perspectives, historians of each of the resulting nations pictured the empire in a manner that justified costly independence wars and explained serious nineteenth-century economic and political problems. Second, in order to construct a tidy narrative for a geographically messy subject, some historians present “Spain” in the first global age as a developing, centralized state, whose strength at any time was determined by its autonomy in formulating policy and its capacity to shape society, while others challenge this vision as a useful way to understand this monarchy’s history.

The royal cosmographer Juan Bautista Muñoz (1745–1799) convinced the Crown to establish in 1781 the magnificent Archive of the Indies in Seville to preserve the record of the administration of the Hispanic monarchy’s vast Castilian domains. In part because of this resource, historians have concentrated heavily on the monarchy’s administrative networks involving the interactions among various court officials and councils and the royal viceroys, governors, high commissioners, judicial tribunals and justices, trade and taxation officials, and major municipal councils. The emphasis on administrative interactions produces a picture of a system much more unitary and under the control of royal authority than was ever true. A different impression emerges when greater attention is devoted to connections between locations that involved lineage networks, the regular orders or church administration, the investors, managers, and workers (slave and free) who developed agricultural and mineral resources, the merchants who organized vast commercial networks in the face of incredible obstacles, and the massive



A Spanish traveler carved this message in a canyon wall in central New Mexico in 1709.

world of fraud and clandestine networks of production and smuggling. The roles of women have only been made somewhat visible in the last few decades. In general terms, research on the domains of other Iberian Crown governments remains more poorly developed than that on Castile.

The Domains of the Hispanic Monarchy

The traditional chronological limits for the history of this composite monarchy are the marriage in 1469 of two first cousins, the “Catholic monarchs” Ferdinand and Isabella of Trastámara, and the defeat at Ayacucho (modern Peru) of the last Bourbon army in the continental Americas on 9 December 1824. In between, the territorial extent of the monarchy’s realms varied a great deal, and events continuously influenced the patterns of interactions among its domains and at times could inflect them significantly. Isabella (1451–1504) inherited the crown of Castile, which already included the Canary Islands, on her brother’s death in 1474, and Ferdinand (1452–1516) obtained the crown of Aragón when his father died in 1479. The Crown of Aragón was a composite monarchy consisting of the kingdoms of Aragón and Valencia and the principality of Catalonia in the Iberian Peninsula, the counties of Cerdanya and Rosselló north of the Pyrenees, and the island kingdoms of Majorca, Sardinia, and Sicily. After a

decade of fighting, the Muslim emirate of Granada surrendered on 2 January 1492 and became a Castilian domain. Ferdinand added the kingdom of Naples to the Aragonese domains when the ruling Trastámara branch died out in 1504, and in 1512, he conquered the Iberian kingdom of Navarre, which he added in 1515 to the Crown of Castile. By this time, Castile’s domains had expanded significantly in the Caribbean region as a result of the four expeditions of Christopher Columbus (1451–1506) and those of adventurers drawn to the region in search of wealth.

Isabella’s death brought to the Castilian throne her daughter Joanna (1479–1555) and Joanna’s husband Philip of Habsburg (1478–1506), son of the Holy Roman Emperor Maximilian I (1459–1519) and ruler of the Low Countries and the Franche-Comté on the west bank of the Rhine. Due to Joanna’s signs of mental illness and the growing political instability after death removed Ferdinand as Aragonese ruler and Joanna’s regent in Castile, her elder son with Philip, Charles of Habsburg (1500–1558) became joint ruler of the Iberian Crowns. When his grandfather died, Charles was elected Holy Roman Emperor as Charles V, which united the destinies of the Crowns of Aragón and Castile, the realms of the Habsburg Rhine and Low Countries, and the dynasty’s holdings in Central Europe, although the latter would eventually be ceded to Charles’s younger brother Ferdinand.



The central square with cathedral and government buildings of Spanish design in Guanajuato, Mexico, is representative of changes to indigenous architecture after the Spanish conquest.

Expansion During the Reign of Charles V

Charles's Castilian territory expanded enormously with the defeat of the Aztecs in 1521, the beginning of Inca subjugation in 1532, and a series of long voyages intended to turn the vast Pacific Ocean into a Castilian zone from the Americas to the Philippine Islands. Regions of the viceroyalties of New Spain, with its capital at Mexico City, and Lima would eventually produce about 80 percent of the world's silver, for which demand was particularly high in China and South Asia. After the death of the Milanese ruler Francesco Sforza, Charles gained a major financial and production center when he took control of the Duchy of Milan, and he continued the efforts, begun in 1497 with the conquest of Melilla, to add North African enclaves.

The terrible destruction of American peoples by epidemic diseases, war, the collapse of complex economic and political regimes, and harsh conditions of forced labor motivated the Dominican friar Bartolomé de Las Casas (1474–1566) and other Iberian authors to develop sophisticated ideas about economic policy, constitutional thought, human rights, and international relations. These would provide an important intellectual context for the eighteenth-century

development of distinctive American identities and of the Liberal constitutionalist movements that would do much to reshape world political history in the second global age.

Revolt, Expansion, and Rivalry

Subsequent developments within the global monarchy were shaped in fundamental ways during the reign of Charles's son Philip II (1527–1598) by the revolt that began in the late 1560s in his Low Countries domains, the organization of Manila in the Philippine Islands as a connecting point between American silver production and the enormous Chinese appetite for this product, and by Philip's successful assertion in 1580 of his claim through his mother to the throne of Portugal, as Philip I. From the Dutch rebellion and resulting eighty years of military conflict to 1648, the United Provinces of the Netherlands emerged as a potent commercial and political opponent, and by the mid-seventeenth century, Amsterdam had become the financial center of European activity in the world economy. The emergence from 1571 of regular commercial interactions between Acapulco and Manila gave the Castilian government broader interests in the vast Pacific region and produced significant flows of Chinese immigrants, merchants, and products toward



Hernán Cortés, conqueror of the Aztec Empire, secured large parts of Mexico for the King of Castile.

the Philippines. The crown of Portugal brought with it not only rule over Castile's neighboring Iberian kingdom but even more significantly, over Portugal's extensive non-European domains.

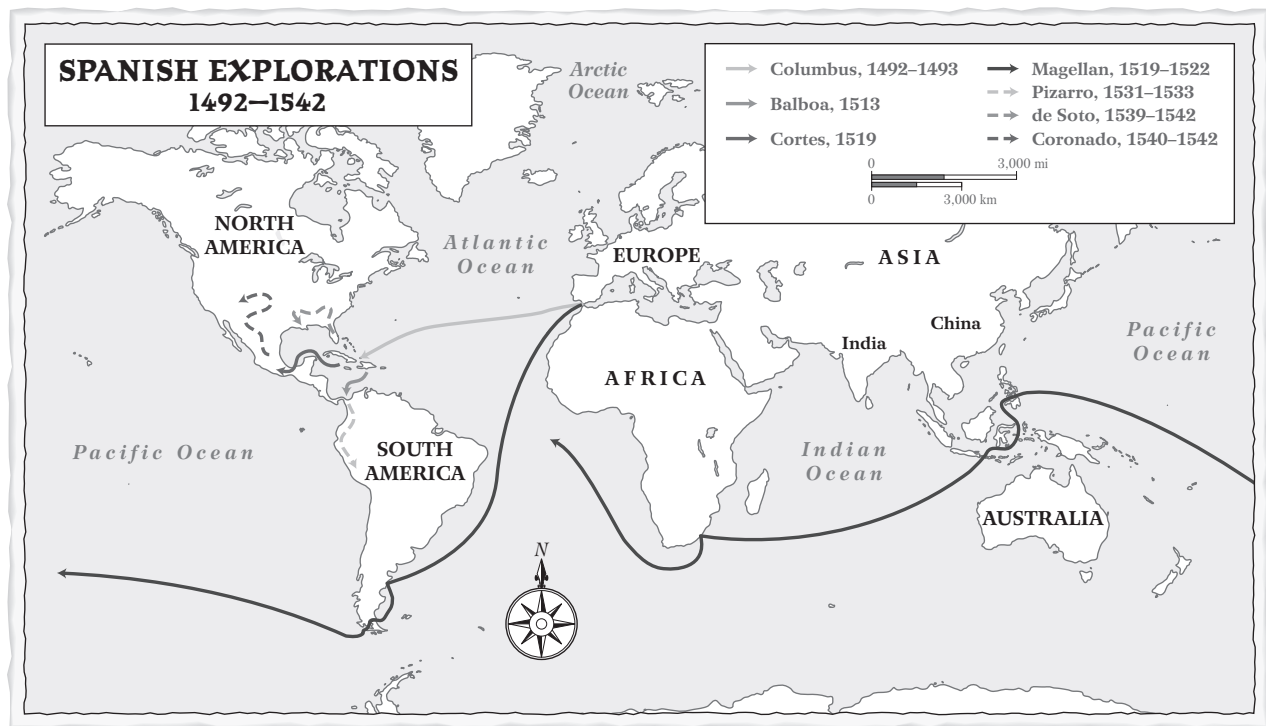
The European and Mediterranean wars of Charles V and Philip II placed great pressure on the Habsburg dynasty's financial resources. The long, fragile commercial links among Hispanic global domains and the monarchy's role as the military bastion of reformed Roman Catholicism made Castilian and Portuguese positions in the global economy attractive targets for intervention and attack by the Dutch, English, and French Protestants. During the reigns of Philip's son and grandson, Philip III (1578–1621) and Philip IV (1605–1665), matters deteriorated further. The Dutch East India Company (Verenigde Oost-Indische Compagnie, or VOC) used methods similar to those of the Portuguese to secure important chunks of the European share of Indian Ocean and East Asian commerce, and other Dutch commercial interests asserted increasing control over another significant component of the global economy, the Atlantic slave trade. Moreover, the Dutch took over the sugar-producing

regions of northeastern Brazil and gained footholds in the Caribbean and North America. English and French groups also became more active on a global scale in the wake of such dramatic Dutch successes. The contraband trade, always important from the beginning of the global economy, increased notably everywhere as merchants and officials sought to avoid arbitrary royal seizures of bullion and other goods and a Crown fiscal and monetary regime oriented exclusively toward military commitments too extensive for the Hispanic monarchy to fulfill.

In addition to the Dutch war, the monarchy found itself embroiled with the revived French monarchy under the Bourbon dynasty in contests that would eventually cost it the Aragonese domains north of the Pyrenees, the Franche-Comté, and some territory in the southern Low Countries. European conflict focused, however, on the terrible Thirty Years War (1618–1648), which centered on the Holy Roman Empire, whose Habsburg emperors were the cousins of the Hispanic rulers. Faced with weakened elite support, riots, evasion, and fraud everywhere, the government of Philip IV's favorite, the Count-Duke of Olivares (1587–1645), pulled ever more administrative functions toward Crown institutions and officials in Madrid, further alienating those elsewhere and making it increasingly difficult to achieve royal aims in the face of widespread disobedience. The most damaging manifestations of discontent surfaced in 1640 when the Iberian Habsburg dynasty was confronted with rebellions in Catalonia, which it would only recover in 1653, and Portugal, whose independence under rule by the Braganza dynasty would be conceded in 1668 when Philip IV had been succeeded by a sickly infant who reigned as Charles II (1661–1700).

Bourbon Dynasty and American Independence

When Charles II finally died without direct heir, a genuinely global war began, to decide whether the Hispanic monarchy would be ruled by a member of the Austrian branch of the house of Habsburg or of



the French Bourbon dynasty headed by king Louis XIV (1638–1715). The long War of the Spanish Succession was finally ended by the Treaty of Utrecht in 1713, which awarded the throne to Philip V (1683–1746) of Bourbon, Louis XIV’s grandson, but stripped away control of the southern Low Countries and the Italian domains, except Sardinia (Naples and Sicily would later be recovered by the dynasty). For more than a century, Creole elites in the Americas and Philippines gained greater control and influence over royal and church offices and institutions, often in violation of existing statutes, and especially after the monarchy’s difficulties during two major world wars of the mid-eighteenth century (1740–1748 and 1756–1763), in the latter of which the British captured Havana and Manila in 1762. Bourbon ministers felt that these domains required greater supervision and that their economies needed to be transformed in order to produce more revenue for their defense.

Wealthy Creoles were squeezed out of Crown administrative positions by peninsular appointees, excise taxes were levied on widely consumed products, and labor controls over indigenous peoples were challenged in order to bring them into a money economy in which their purchases could be taxed. Rather than play its traditional role of assisting Creole elites to maintain their disproportionate share of

production and political authority, the Crown was increasingly seen by many of them as an arbitrary, destabilizing entity, especially after significant uprisings of Native Americans, urban plebeians, and African slaves appeared to confirm Creole claims that Bourbon policies placed control by the “civilized” minority in jeopardy. British maritime successes during conflicts with revolutionary France exposed the weak connections between Madrid and the monarchy’s overseas domains. Napoleon’s imposition in 1808 of his brother as Spain’s ruler occasioned independence uprisings in the Americas, and the restored Bourbon monarch Ferdinand VII (1784–1833) faced too much postwar poverty and political turmoil in his peninsular domains to hang on to more than Cuba, Puerto Rico, and the Philippines.

Research Challenges

Although the legal and administrative regimes of the various Hispanic domains influenced the histories of each, economic, religious, subaltern, and clandestine interactions created alternative stories every bit as decisive in forming the complex reality of such a vast territorial conglomerate as the Hispanic monarchy. In the end, the histories of each place were fundamentally shaped by their shifting relationships with other

constantly changing locations, and until researchers develop the means to integrate such multivariate and multidimensional interactive webs, we will not approach an adequate grasp of the processes driving the history of this monarchy or the world within which it was deeply integrated during the first global age.

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See also Americas, The; Andean States; Isabella I; Magellan, Ferdinand

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Spices

Trade in spices—especially peppercorns, cinnamon, and cloves—brought together diverse cultures of the western, southern, and eastern parts of the world. This exchange of spices stimulated the first global age (c. 1400–1800), and the beginnings of economic globalization, wherein actions in one area of the world greatly affected people and events on another, far-off continent.

What are spices? A spice is usually defined as an aromatic part of a tropical plant, be it root, bark, flower, or seed. All spices, with the exception of vanilla, chili pepper, and allspice, are of Asian origin. Many people group herbs and spices together as one set of plants. Herbs are quite different. An herb is a plant that does not have a woody stem and dies at the end of each growing season. Most herbs derive their flavoring or medicinal uses from their leaves.

All spices played a role in world history, but the spices that had the most effect on global trade and cultural interactions were chili peppers, black pepper, cinnamon, cloves, and nutmeg.

Spices in the Ancient World

In the ancient world spice trading across the Indian Ocean and east to present day Indonesia and north to China was a daily occurrence. The Western world knew little of spices, and what they did know was filled with imaginative tall tales of birds building nests with cinnamon, and inhabitants of “clove island,” (Ternate, Tidore, Moti, Makian, and Bacan islands of Indonesia, the ancient capitals of clove cultivation) never growing old. The Asian trade was

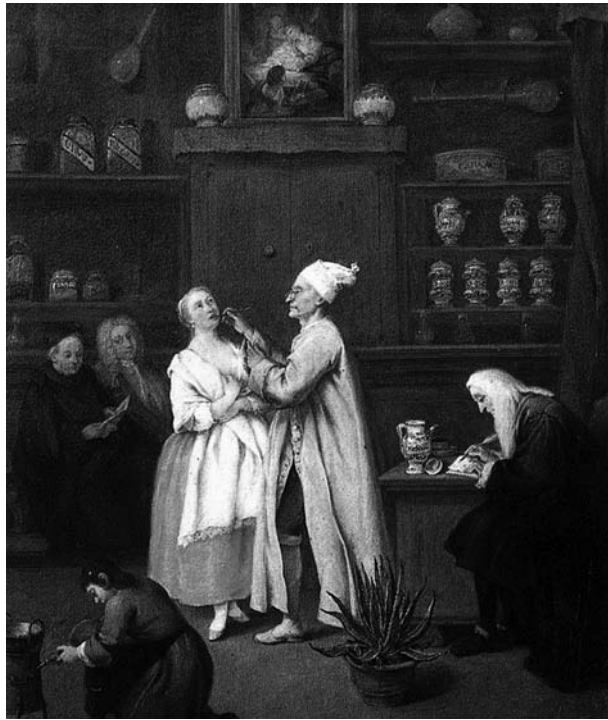
driven by the monsoon winds that blew ships south and west in the winter, and north and east in the summer. For centuries the West knew little of the spices that flowed east and west through Asia.

For China, records from the Han dynasty in the second century BCE indicate knowledge of a plant called *Piper nigrum*, which was supposed to be from the west of China, but more likely came from India, where black pepper originated in the southwest on the Malabar Coast. Also in the Han dynasty cinnamon first entered Chinese records as coming from present-day Vietnam. Cloves came out of the Moluccas and both the Chinese and Indians were active in the clove trade. Cloves appeared in India in the Ramayana literary classic somewhere around the beginning of the common era. Cloves—considered to be a breath freshener to be used in China before meeting with the Han emperor—were named “chicken-tongue fragrance.”

In the West the Romans were the first to use the spices of the East. Traders and middlemen carried black pepper from India up through the Red Sea and into Egypt and then across the Mediterranean Sea. Spice also flowed into Europe from the Middle East as Rome extended its empire in that direction. The Romans favored black pepper as their mainstay cooking spice, while cloves were mostly used in incense and perfume.

Spices in the Medieval World

The medieval world and spices were shaped by several events. The first was the decline of the Roman Empire by 500 CE and the loss of their spice-trading networks. The second was the birth of Muhammad



Pietro Longhi, *The Spice-Vendor's Shop* (1752). Oil on canvas. Galleria dell'Accademia, Florence.

in 570 CE and the rapid rise of Islam, which had spread north to southern Spain and east to Malay Peninsula by the year 1000 CE. Finally, by the beginning of the eleventh century, the Roman Catholic Church had grown in size and power and was seeking to expand its influence. The combination of these events led to the rise of Islamic influence in controlling the trading routes of both the Arabian Peninsula and the East Indies while the Catholic Church organized the crusades to recapture the Holy Land from Islam.

While the crusades brought cohesion among some peoples in western Europe, the cross-cultural experiences of the western crusaders in the Middle East changed their views of food and how food is prepared and eaten. Spices such as pepper, nutmeg, cloves, and cardamom entered the diet of the crusaders, as did figs, dates, lemons, and oranges—causing a revolution in the staid tastes of the West.

Once the spices of the Eastern world had been experienced the Italian port cities of Venice and Genoa set themselves up as the conduit to bring the spices of the East into the West. Europe was changing its

tastes but the Arab and Muslim worlds of the East controlled access to spices.

Spices in the Age of Exploration

The “Age of Exploration,” a Western/European expression, involved the nations of coastal/continental Europe and the British Isles. From the late fifteenth century Portugal, Spain, the Netherlands, England, and, to a lesser degree, France and Denmark, competed for the market in spices in two areas of the world, South Asia and Southeast Asia. As these nations competed, this quest for spices led to the first “global” wars.

It all began with Portugal and Vasco da Gama in 1498 when this Portuguese navigator arrived at Calicut on the Malabar Coast of west India looking for black pepper. After miscommunications with the Hindu ruler and other difficulties, Vasco da Gama sailed home with a shipload of pepper. One of the things that he learned was that the network of Arab, Muslim, and Persian merchants who controlled the flow of spices would have to be broken. The Portuguese continued to come to India after 1500 and soon set up bases and shipbuilding facilities at places such as Goa. Between 1503 and 1540 Portugal supplied Europe with most of its pepper but was never able to break the spice trade monopolies that existed. For the rest of the sixteenth century the Portuguese moved to the east to acquire other spices such as cinnamon, nutmeg, and cloves. Their empire expanded but their share of the spice market was very small.

In the 1590s the Dutch entered the spice competition returning from Asia with a modest shipload of pepper. By 1601, a large fleet was assembled and the Dutch solidified their efforts by forming the Dutch East India Company (Verenigde Oost-Indische Compagnie, or VOC) and focused their efforts on ousting the Portuguese. They were successful throughout the seventeenth century capturing the Spice Islands with their nutmeg and cloves, and then controlling the Straits of Malacca. Eventually Ceylon (modern-day

Sri Lanka), and its cinnamon trade, fell into Dutch hands. One Dutch ditty of the day exclaimed:

Wherever profit leads us,
To every sea and shore,
For love of gain,
The wide world's harbors we explore.

These verses did not tell the whole story of what competition wrought, not only for the competitions between the Portuguese, Dutch, English, Spanish and French, but for cross-cultural relations with the inhabitants of the spice-producing areas. Bloody encounters, to acquire spices as well as to expand networks for profit, were often the rule. Felipe Fernandez-Armesto, in his book *Pathfinders* (2006, 205), sums up the European-native encounters: “They began with embraces, continued with abuse, and ended in bloodshed.”

Spices in the Age of Industrialization

By the nineteenth century the Dutch had settled into maintaining their spice empire in the East Indies. Markets were established and maintained. The British controlled this empire for a short time during the Napoleonic Wars, but gave that up to focus on South Asia. The French were able to transplant cloves successfully from the East Indies to East Africa, which led to an extensive system of slavery that persisted until late in the nineteenth century.

In the early 1800s a new area of the world entered the spice trade. It all began in the northeastern United States at the port of Salem, Massachusetts. An enterprising sea captain named Jonathan Carnes set out on a voyage to the East Indies in the 1790s. After two trips he returned to Salem with a boatload of black pepper which reaped a profit of 700 per cent. The competition was on. Other Salem ships sailed back and forth to Sumatra to acquire pepper. Historical accounts tell of their adventures in the waters south of the Straits of Malacca. There were many encounters with the Malay natives and their wavy lethal daggers, known as *creese*.



Meteor-brand spice tin from the 1930s, produced in Lebanon, Missouri. Photo by Todd Franklin.

In the late nineteenth-century advances in technology such as steam power led to the development of ships that were able to crisscross the globe with more speed and efficiency. Entrepreneurs such as Thomas Cook established travel agencies to take citizens on global tours. Speed of travel not only got spices moving more quickly to their markets but also brought people into contact with the source of spices and how they were used in cooking. The British control of South Asia in this period and the influences of Indian cooking on British society are still strong today in curry and other dishes.

The Twentieth Century and Beyond

In our modern era the spice trade has become a very settled business. The Dutch continued to control certain aspects of the trade out of the East Indies until the Indonesian revolution, but the overland Chinese, Malay, and other ethnic groups of South and Southeast Asia continued their networks as if the Europeans

had never come east. During the twentieth century many spice companies emerged in Europe and in the Americas. Each had their own network of suppliers from India or Southeast Asia.

In the late twentieth century, one U.S. spice company, McCormick, which was founded late in the nineteenth century in Baltimore, Maryland, began to emerge as a major global spice company. The secret of their success was the fact that they sent company employees to the source of the spices they needed and then set up their own bases and networks. Not only did McCormick set up networks, they established operations at various sources of global spices to both control the gathering of spices and insure their quality. Today McCormick controls many of the European spice companies, although these companies maintain their traditional names.

The use of spices has changed significantly in the last half-century. Prior to that time people bought individual spices to flavor their home-cooked meals. In recent decades the great majority of the spices that are purchased are used by large multinational food companies in the preparation of processed foods that are sold in global supermarkets.

Spices are now an integral part of many global cuisines and many of these dishes, flavored with spices such as the chili pepper, have traveled around the world and found a place in the eating habits of multiple cultures. One can now find restaurants on all

continents that offer dishes that blend the spice flavors of different cultures, cuisines, and traditions in new and exciting culinary spice explorations.

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See also Dutch East India Company; Trading Patterns, China Seas; Trading Patterns, Indian Ocean

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Sports

The modern concept of sport refers mainly to organized and competitive physical activities such as cricket, basketball, table tennis, golf, or soccer and excludes recreational activities such as walking or hunting. Thus it leaves out games such as bridge, chess, or poker. This broad definition of sport reflects the universal human passion for movement.

Sporting activity is grounded in human physiology and a love of movement that all humans share at birth and embrace throughout life. This is demonstrated by the popularity of such recreational pursuits as walking and swimming, and by a wide variety of physical pastimes, such as hunting, fishing, skating, skiing, and sailing. The word *sport* derives from the Middle English word *disport* meaning to frolic, play, or amuse oneself. In modern usage, however, sport includes the elements of competition, physical prowess, and rules. In this sense sport mainly refers to organized activities such as cricket, basketball, or soccer and excludes recreational activities such as walking or hunting. It also leaves out games such as bridge, chess, or poker. A broad definition of sport includes recreational activities and games, but a narrower definition limits sport to athletics of a competitive nature.

It is helpful to think of sports as a form of cultural expression that reflects a culture's history and character. As with other performed forms of cultural expression, sports appeal to the emotions and to aesthetics. Moreover, as with all arts, larger issues of a society involving economics, politics, technology, religion, architecture, and social questions can be observed in the circumstances of sports. As the social historian

Jacques Barzun observed about the United States in 1954, "Whoever wants to know the heart and mind of America had better learn baseball, the rules and realities of the game—and do it by watching first some high school or small town teams" (Barzun 1954, 159). The sports sociologist D. Stanley Eitzen has updated this observation: "Baseball, then, represents what we were—an inner-directed, rural, individualistic society. It continues to be popular because of our longing for the peaceful past" (Eitzen 1996, 23).

There is no evidence that sports are necessary for human existence. Although a particular sporting contest might enflame passions and spark a riot, there are no instances of sports starting or ending wars. Two world wars, a cold war, and numerous regional conflicts, for instance, have occurred during the time of the modern Olympic Games. Sports do not drive the economies of the world, nor do they determine foreign policy, and there is no quantifiable evidence that they are necessary in schools. There exists much anecdotal testimony, however, about the usefulness of the arts, including sports, for creating multidimensional, interesting individuals. Athletic events, for example, prompt conversations that cut through all divisions of society, and sports metaphors sprinkle the language: "on target," "level playing field," "sticky wicket," "throw in the towel." Sports are a universal phenomenon that can be found with all peoples and in all times, and they invite cross-cultural comparisons to help ascertain what it means to be human.

Influences on Sports

Geography, vocation, religion, entertainment, Eros, and warfare have all influenced sports. It is easy to

Sports and music have become the universal languages. • Philip H. Knight (b. 1938)

see the general influence of geography: people in cold climates invented skiing and ice skating, for example, and those bordering water were interested in boating and swimming. Hot, desert climates cautioned against excessive exposure of the body. As far back as the fifth century BCE, the Greek historian Herodotus noted that people in the Middle East kept themselves covered and thought nudity was shameful. It should be noted, however, that ancient Egyptians of the Nile Valley wrestled nude, or while wearing a light loincloth. On a local level, geography involves the location of stadiums or sports venues and their influence on people's lives. Ancient Greeks valued their *gymnasion* for physical and intellectual stimulation, for example, and modern U.S. universities make room for stadiums on their campuses.

Vocation has inspired sports such as the rodeo, in which cowboys show off their skills at roping, branding, and bronco busting. Religion was significant in the ball games of the Maya and the bull jumping of the Minoans, and has been a source of inspiration for modern athletes. Sports for entertainment can be seen in the crowd scenes in the temple carvings at Nineveh, in the friezes of ancient Egypt, and in the contemporary phenomenon of ESPN, a television channel dedicated to twenty-four-hour sports

broadcasts. More evidence can be seen in the ruins of Greek and Roman hippodromes, built for chariot races; and the ruins of Roman arenas, built for gladiator fights. These are comparable to the new stadiums U.S. cities build in order to attract "big league" sports teams.

The erotic nature of sports has been a taboo subject, but is explicit in the art of ancient Greece, particularly on the trade pottery decorated with active, naked athletes. Ancient Egyptians painted nude acrobats and athletes on their tomb walls. Modern sports such as figure skating, gymnastics, swimming, diving, and body building, all of which expose the human body, possess an unspoken but obvious erotic aspect.

The most important inspiration for sports, however, has been warfare. In the ancient Olympic Games (776 BCE–393 CE) most of the skills tested by the events had fighting applications. Javelin throwing was one of the most apparent, but the contestants also ran, jumped, boxed, wrestled, threw a discus, raced chariots, and rode horses. One of the most popular events was the *pankration*, a combination of wrestling and boxing with almost no holds barred. The two combatants fought until someone surrendered. In 564 BCE Arachion, a pankrationist, while being strangled in a



In the late twentieth century basketball became one of the most popular sports around the world. Here, young men in Shanghai, China, play in a basketball tournament (2003).

If you must play, decide on three things at the start: the rules of the game, the stakes, and the quitting time. • Chinese Proverb

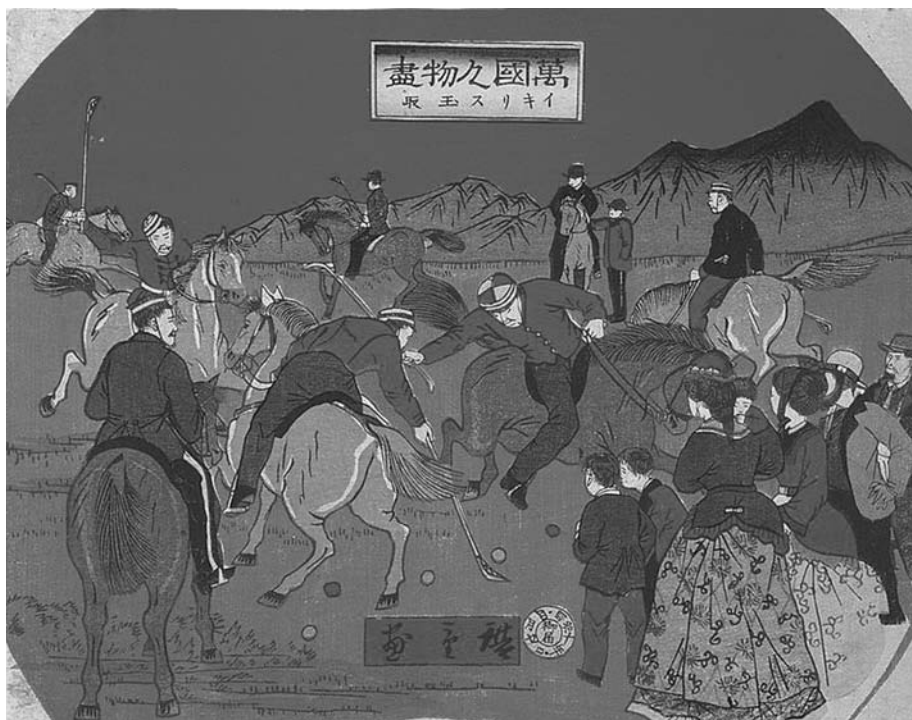
bout, won by dislocating his opponent's toe. Arrachion died, but the judges crowned his corpse with the olive wreath of victory. The final event of the ancient games was a running race in which the men wore armor and carried a shield, a concluding tribute to the importance of warfare in sports.

The influence of combat can also be seen in Native American contests. Eastern Woodlands Indians played a ball game that was the prototype of lacrosse. The artist George Catlin (1796–1872) observed a Choctaw match in the 1830s in which some six to seven hundred players tried to throw a small ball through goals placed approximately 250 meters apart. They used a meter-long stick with a netted hoop on the end to catch and hurl the ball without touching it. There was a great deal of running, yelling, hitting in the face and shins, and fighting until a hundred goals were scored. Afterward the winners claimed their wagers, everyone took a drink of whiskey, and the Indians returned home. They called their game *baggataway*, which translated into “little brother of war.”

Sports in the Premodern World

During the years of the Middle Ages in Europe (500–1500), the upper class sponsored tournaments to keep sharp the fighting skills of the knights, while the lower classes practiced archery. For pastimes, the elite hunted on horseback with falcons and played shuffleboard in their castles, while the peasants pursued crude games of football between villages, as well as bowling, field hockey, and games of quoits in the stables. Archery was a sport for the yeomanry of England and a passionate activity for the urban bourgeoisie of western Europe.

Marco Polo, traveling in Asia, recorded a large, month-long hunting expedition by Khubilai Khan in 1275 that included members of the court, family, and administrative officers using elephants, hunting dogs, horses, and ten thousand falconers to capture herons, swans, storks, and other game. The elite also played a form of polo, a horse game known from the Middle East to the Far East. Chinese court women played astride donkeys or ponies. Other Chinese,



This Japanese woodcut from 1877 shows a British-style polo match. By Utagawa Hiroshige.

both men and women, played *cuju*, a game like soccer that utilized a ball stuffed with hair, and also enjoyed a game reminiscent of the present-day sport footbag (often called Hacky sack, after one manufacturer's brand of footbag): people in a circle tried to kick a small deerskin ball in the air. People in Asia, moreover, practiced varieties of martial arts for personal discipline and defense after the invention of martial arts in the sixth century. Sports in precolonial sub-Saharan Africa are less well known, but there are examples of canoe races and, of course, wrestling, a sport that seems to have been universal throughout Africa.

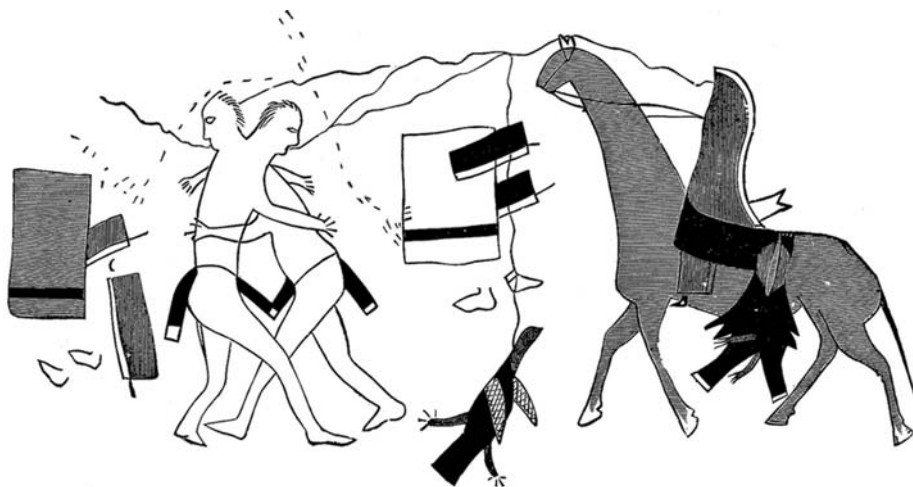
Modern Sports

Modern sports evolved mainly in the West during the time of the industrial and scientific revolutions, and the demographic surge of population from the countryside to the city. The British sociologists Norbert Elias and Eric Dunning and the U.S. historian Allen Guttman have analyzed the differences between pre-modern and modern sports that accompanied this major societal shift. Elias and Dunning developed a theory about a "civilizing process" whereby people learned to control emotion and aggression in sports to reduce injury. Examples of the civilizing process include the adoption of gloves in boxing. Guttman

developed a list of distinguishing characteristics of modern sport: secularism, equality (equal rules for all participants), bureaucratization (organizational control), specialization (specific positions and roles played in a game), rationalization (rules and training for efficient skills), quantification (an emphasis upon measurement by numbers), and record keeping. Other historians have added the use of publicity and public announcements to the list. This definition of modern sports is widely accepted by sports historians. The process of adopting these characteristics is sometimes called "sportification."

Western sports spread globally as a result of individual enthusiasm, Christian missionary work, sports organizations, military occupation, and the Olympic Games. Soccer, the world's most popular sport, began as a game in British boys' schools in the mid-nineteenth century. It spread to Europe, Africa, and South America through transplanted British schoolmasters, traveling students, interested businessmen, posted soldiers, and visiting sailors. Soccer and cricket, another British sport, spread throughout the British Empire, supported by the colonial administrations and by the British army, which used sports to forestall boredom and promote physical conditioning.

In some cases, enthusiasts helped spread sports. This was the case with baseball, as when A. G.



A Native American pictograph depicts a wrestling match.



Spalding (1850–1915), a professional baseball player and later manager and eventually president of a baseball team, sent teams abroad to promote the sport. The Marylebone Cricket Club, the arbiter of cricket, dispatched touring teams to Australia that eventually resulted in a biannual international match called the Ashes.

Christian missionaries inspired by “muscular Christianity,” a pedagogy that combined sports and religion to produce moral people, also took Western sports into Africa and Asia. The muscular Christian mentality helped to spread the sports of table tennis, tennis, track and field, soccer, and basketball. Most significant of these missionary organizations was the nonsectarian Young Men’s Christian Organization (YMCA), an organization founded in London in 1844 that was particularly active from 1850 to 1920. It established branch associations in cities around the world that promoted Christianity and athletics. It commonly constructed pools to teach swimming and gymnasiums to teach basketball and volleyball, games invented by YMCA instructors. James Naismith (1861–1939) put together, tested, and refined the rules of basketball in 1891; the game was not only popular in the YMCA, but also in school systems. In terms of numbers of participants and fans, basketball, along with soccer, became one of the most widespread sports in the world.

Because of the lack of comparable statistics it is difficult to measure the most popular modern sports, but in terms of the quantity of national sports organizations dedicated to a particular sport, the leaders are soccer, basketball, tennis, track and field, and volleyball. To a lesser extent American football, cricket, baseball, rugby, skiing, boxing, judo, car racing, cycling, swimming, and table tennis can be included. From that list a bias toward sports that originated in the West is evident. A major exception is judo, which was synthesized by Jigoro Kano in Japan from several schools of unarmed combat in the last part of the nineteenth century. Judo became popular as a participant sport after World War II, adopted the characteristics of modern sports, and became a part of Olympic competition in 1964.

Modern Olympic Games

Although well-known transnational sporting contests include the America’s Cup in sailing (1857), Davis Cup in tennis (1900), Ryder Cup in golf (1927), Asian Games (1951), Commonwealth Games (1930), and World Cup in soccer (1930), the most important event for the globalization of sport has been the quadrennial Olympic Games that began in 1896. It was the dream of the Frenchman Baron Pierre de Coubertin (1863–1937) to promote world peace through sports competition and a revival of the ancient Olympic Games. He persuaded seventy-eight delegates from nine nations at a meeting at the Sorbonne in Paris in 1894 to support the idea, and the first meeting took place in Athens. Although the statistics are in question, the first games seem to have involved 311 athletes from 13 nations performing for 70,000 spectators. The Olympic Games have persisted since 1896, although they were not held during World War I or World War II, and they were disrupted by major boycotts in 1980 and 1984.

The Olympics have been a showcase for the world’s best athletes and for rivalries between political ideologies. The Cold War antagonism between the United States and the Soviet Union reflected in the games between 1952 and 1992 resulted in technological improvements in equipment, venues, and training, the erasure of the amateur code that had hitherto excluded professional athletes, and the acceleration of female participation in sports. Title IX of the United States’ Educational Amendments Act of 1972, which ordered equal treatment for female athletes in schools, was instituted in large part so U.S. female athletes could compete more successfully against Soviet bloc female athletes in athletic competitions.

Commercialization of Sports

The commercialization of sports, driven by the fantastic amounts of money produced by advertising on televised events, has created international stars such as boxing wit Mohammad Ali (b. 1942), basketball wizard Michael Jordan (b. 1963), and soccer

phenomenon David Beckham (b. 1975). Their endorsement of products has helped to create an international market for sports equipment, affected labor markets in Asia, and enhanced the growth of companies such as Nike that market the majority of sporting gear and equipment in the global market. Professional sports stars have thus become an international commodity.

One disturbing aspect of international competition has been the increasing use of performance-enhancing drugs, a trend that started with Soviet weightlifters in 1952. Illegal drug use was carried to an extreme by East Germany until the disintegration of the Soviet bloc in 1991, and it has been continued in a systematic way in China. Performance enhancement with anabolic steroids, testosterone, human growth hormone, and possible gene alteration, however, is not limited to China; it has spread worldwide and penetrated to the lower ranks of athletes. The use of such drugs threatens the fundamental concept of fair competition and reaches beyond athletics to raise a question about changes in human physiology that may even affect the definition of a human being. How this problem is addressed will have a profound effect on the future of competitive sports. At the moment the work of the World Anti-Doping Agency (2000) to test and catch illegal drug users has been widely

accepted and the athletes of the 2008 Beijing Olympics were found to be comparatively drug free.

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See also Games and Play; Leisure

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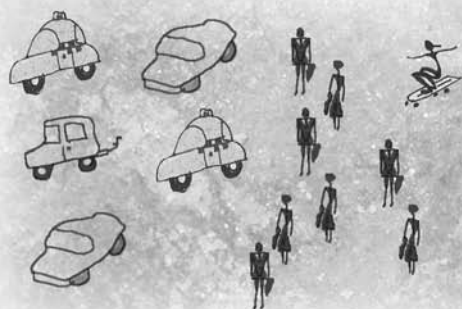
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Srivijaya

Srivijaya was a major trading state and Buddhist cultural center based in southeastern Sumatra. It loosely controlled a regional empire in western Indonesia and the Malay Peninsula between the seventh and eleventh centuries CE. The fortunes of Srivijaya were closely related to conditions surrounding the Indian Ocean maritime trade that linked East Asia and Southeast Asia to the Middle East and East Africa.

The ancient Malay peoples who formed Srivijaya in southeastern Sumatra benefited from a strategic position for maritime commerce and intercultural exchange. The Straits of Melaka between Sumatra and Malaya had long served as a crossroads through which peoples, cultures, and trade passed or took root. The prevailing climatic patterns in the South China Sea and Indian Ocean allowed ships sailing southwest and southeast to meet in the Straits and exchange goods. Some Malays specialized in maritime trade to distant shores. By the third century BCE Malay sailors procured cinnamon grown in China, which was carried, possibly by the same Malays, to East Africa or Arabia, from where it was transported to Europe. Between the seventh and eleventh centuries CE, Srivijaya would become a loosely federated empire whose fortunes and connections depended on trade.

Early Indonesian Commerce and Trading States

By early in the common era small coastal trading states based on lively ports had emerged in the Malay Peninsula and Sumatra; these enjoyed an international

reputation as sources of gold, tin, and exotic forest products. Between the fourth and sixth centuries the overland trading routes between China and the West along the Silk Roads through Central Asia were closed off by insecurity and warfare between rival tribal confederations, increasing the importance of the oceanic connection. Just as various Central Asian societies became important because of international commerce, some Southeast Asians benefited from the growth of seagoing trade between China and Western Eurasia.

Beginning around the first century CE, Indian traders and priests began regularly traveling the oceanic trade routes, settling in some of the Southeast Asian states, where they married into or became advisers to influential families. They brought with them Indian concepts of religion, government, and the arts. Hinduism and Mahayana Buddhism became important in the region, especially among the upper classes. By 800 a Buddhist world incorporating many distinct societies stretched from the Indian subcontinent eastward to Japan, and it included the Straits of Melaka. Some Indian-influenced kingdoms in Southeast Asia were based largely on agriculture, such as the inland Khmer kingdom of Angkor. Others depended heavily on maritime trade, including the states alongside the Straits of Melaka. These contrasting patterns represented a skillful adaptation to the prevailing environment.

Mercantile Kingdoms in Sumatra

Throughout the first millennium CE a complex and increasingly integrated maritime trading system was gradually emerging that linked the eastern

Mediterranean, Middle East, East African coast, and India with the societies of East and Southeast Asia. A vigorously mercantile variation of Indian-influenced culture emerged to capitalize on this trend.

In the later seventh century the Sumatran state known as Srivijaya (in Sanskrit the name means “Great Victory”) began to exercise more influence over many of the small trading states in the Straits region, eventually forming a loosely controlled empire over a wide region. Based in the riverine port of Palembang, Srivijaya used its gold, a naturally occurring resource in that part of Sumatra, to cement alliances. Srivijaya’s control was not centralized; rather, the empire was a federation of linked trading ports held together by a naval force that both combated and engaged in piracy. Srivijaya’s kings forged a close political and economic relationship with the powerful Buddhist state ruled by the Sailendra dynasty in central Java, a highly productive rice-growing region.

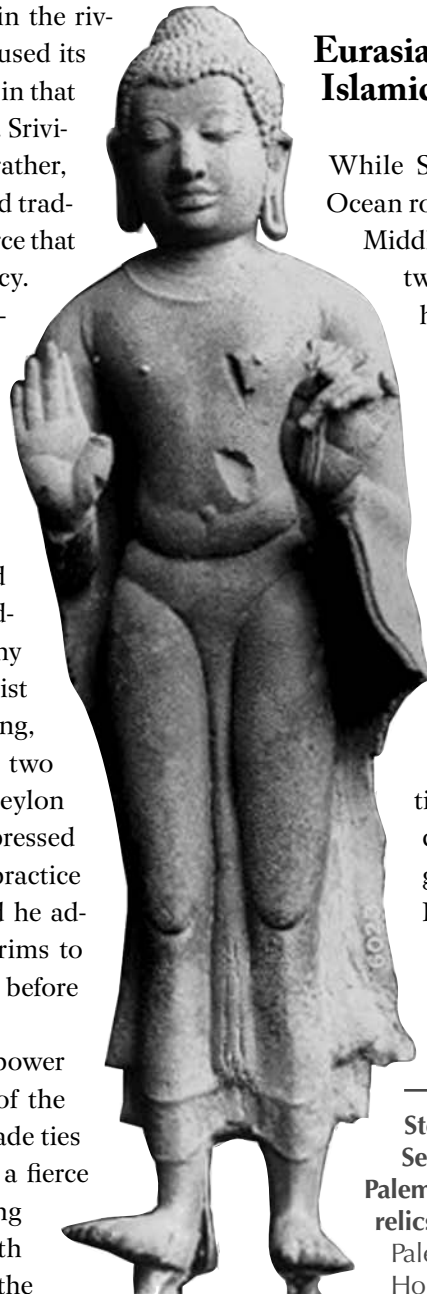
Srivijaya was also a major center of Buddhist observance and study, attracting thousands of Buddhist monks and students from many countries. In 688 a Chinese Buddhist pilgrim and ordained monk, Yi Jing, stopped off in Sumatra after some two decades of travel in India and Ceylon (present-day Sri Lanka). He was impressed with the vitality of the Srivijayan practice and the devotion of the rulers, and he advised other Chinese Buddhist pilgrims to sojourn for several years in Srivijaya before proceeding to India.

Srivijaya exercised considerable power over the international commerce of the region and maintained extensive trade ties with China. Srivijaya also became a fierce rival of the aggressive Cola trading kingdoms of southern India, with whom it fought repeated battles. By the

eleventh century, destructive conflicts with the Colas and rival kingdoms in East Java reduced Srivijayan power in the region, and the Srivijayan political center moved north to the East Sumatran ports of Jambi and Melayu. Eventually several states in Java, North Sumatra, and Malaya became more influential, and the increasing activity of Chinese trading ships undermined Malay shipping. By the fourteenth century Srivijaya had lost much of its glory.

Eurasian Trade and Islamic Expansion

While Srivijayan power faded, the Indian Ocean routes between Southeast Asia and the Middle East grew even more important between 1000 and 1500, becoming the heart of an extensive trade network. The trading system linked China, Japan, Vietnam, and Cambodia in the east through Malaya and the Indonesian archipelago to India and Sri Lanka, and then connected westward to Persia, Arabia, Egypt, the East African coast as far south as Mozambique, and to the eastern and central Mediterranean. Over these routes the spices of Indonesia and East Africa, the gold and tin of Malaya and Sumatra, the textiles, sugar, and cotton of India, the cinnamon and ivory of Ceylon, the gold of Zimbabwe, the carpets of Persia, and the silks, porcelain, and tea of China traveled to distant markets. Many of these products reached



Stone torso of a Buddha, from Bukit Seguntang (Seguntang Hill) in Palembang, South Sumatra, home of many relics from the Srivijaya Empire.

Palembang Museum. Photo by Claire Holt, Collection New York Public Library.

He comprehends quickly and hears patiently. He understands things at hand and acts accordingly and not according to his sweet will; he does not meddle with others' business unless asked to. This is the prime feature of a wise person. • **From the Sanskrit epic poem *Mahabharatha***

Europe, sparking interest there in reaching the sources of the riches of the East.

Like the Mediterranean, the Indian Ocean developed a spatial unity. No particular state dominated the trading route. The dynamism depended on cosmopolitan port cities like Hormuz on the Persian coast, Kilwa in present-day Tanzania, Cambay in northwest India, Calicut on India's southwest coast, Quanzhou and Guangzhou in southeastern China, and the ports along the Straits of Melaka. These trading ports became vibrant, cosmopolitan centers of international commerce and culture with multinational populations.

Trade networks helped foster the expansion of Islam and the rise of Melaka. Sunni Islam spread widely in the Southeast Asian archipelago from the thirteenth through sixteenth centuries. A common Islamic faith and trade connections linked societies as far apart as Morocco and Indonesia. Islamic culture was a globalizing force, dominating huge sections of Africa and Eurasia. By the fourteenth century Islam was well established in northern Sumatra. Some Hindu-Buddhist rulers of coastal states in the Malay Peninsula and Indonesian islands, anxious to attract the Muslim Arab and Indian traders who dominated interregional maritime commerce and attracted by the cosmopolitan universality of Islam, adopted the new faith.

The spread of Islam coincided with the rise of the great port of Melaka, on the southwest coast of Malaya, which in the early 1400s became, like Srivijaya before it, the region's political and economic power as well as the crossroads of Asian commerce. Melaka also served as the main base for the expansion of Islam in the archipelago, including into the Srivijayan heartland, displacing Buddhism and Hinduism. Like Srivijaya, Melaka also played a crucial role in international trade. Merchants from around Asia

rapidly transformed the port into the region's major trading entrepôt and major link for the Indian Ocean maritime trading network. Gradually, like Srivijaya, Melaka established a decentralized empire over much of coastal Malaya and eastern Sumatra. Today only a few ruins and artifacts hint of the once-great Srivijaya, but its greatest port, Palembang, is a bustling center for Indonesia's oil industry, with a mostly Muslim population.

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See also Buddhism; Trading Patterns, Indian Ocean

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Joseph Stalin was a revolutionary who became the leader of the Soviet Union in 1927, several years after the death of Vladimir Lenin. Stalin's harsh policies were responsible for millions of deaths, yet his model of government, in various forms, served as method of modernization for more than a billion people living in Communist regimes outside the Soviet Union.

Under Joseph Stalin's leadership during World War II (1939–1945), the Soviet Union managed to defeat Adolf Hitler's German armies and also to intervene successfully in the Far East. Military power gave Stalin a large role in shaping global history after the war. Stalin's brutal dictatorship in the Soviet Union, beginning in 1927, as well as his export of a fatally flawed Soviet system to other states in Eurasia, largely created the Cold War. Despite its terrible costs, the Stalinist model, in modified forms, became an alternative method of modernization for more than a billion people living in Communist regimes outside the Soviet Union.

Early Career

Iosif (Joseph) Vissarionovich Dzhugashvili (1878/79–1953)—known by his revolutionary pseudonym “Stalin,” meaning “man of steel”—became the world's most powerful dictator after World War II. He was born in Gori, Georgia, which was a vassal of the Russian Empire. Stalin, the son of a cobbler, was known in his youth as a tough street fighter, a promising scholar, and a gifted adolescent poet. He followed his mother's wishes and entered the Tbilisi Theological Seminary, but became a Marxist there. He went into

the revolutionary underground in Georgia in 1896, joined the Social Democrats, and then joined that party's Bolshevik faction in 1903. Although an admirer of Vladimir Ilyich Lenin (1870–1924), Stalin did not appreciate all of Lenin's tactical twists and turns. Unlike Lenin, who lived in exile in western Europe for most of the years between 1900 and 1917, Stalin continued to spend much of his early career in the Russian Empire's revolutionary underground. In the revolution of 1905, Stalin was in the thick of things in major cities in Transcaucasia (the area that includes all of Armenia and most of Georgia and Azerbaijan). During the revolutionary doldrums after the suppression of the 1905 revolution, Stalin established himself as a major organizer in Transcaucasia and as a supplier of desperately needed party funds through “expropriations,” although he spent much of 1908–1912 in prison and exile in Siberia.

Rise to Prominence

In 1912 and 1913, during a hiatus between imprisonments, Stalin wrote on the Marxian theory of nationalities (at Lenin's request) and joined the Bolshevik top echelon. (Both Lenin and Stalin believed that nation-states would soon become obsolete, yet they recognized the power of nationalism and promised the ethnic minorities and nationalities in multinational states a certain amount of cultural and political autonomy. This, theoretically at least, included the nations' right to secede.) At the Prague conference of 1912, Lenin made Stalin a member of the Bolshevik Central Committee and an editor of its journal, *Pravda*. Stalin had risen to the top of the party hierarchy along with his close



In this Russian propaganda poster Joseph Stalin claps in response to cheering crowds.

comrade, Grigory Konstantinovich Ordzhonikidze, and Lenin's more theoretically oriented lieutenants, Grigory Yevseyevich Zinovyev and Lev Borisovich Kamenev. In February 1913, Stalin was arrested and sent to Siberia. When he returned from Siberian exile after the February Revolution of 1917, Stalin resumed his position as one of Lenin's right-hand men.

Bolshevik Oligarch

Stalin's laconic manner and plain ways set him apart from the leading Bolsheviks. Lenin, however, appreciated his effectiveness and made him commissar of nationalities in 1917, a member of the Politburo and Orgburo, and, in 1922, the general secretary of the Communist Party—a post that became Stalin's main source of power. Although Lenin criticized Stalin in 1923 and suggested that he be removed from the post, party leaders did not follow through—to their misfortune. Shortly after Lenin's death in 1924, Stalin outmaneuvered all opponents, whether on the left or right wing of the party. He used his power over party personnel to pack party conferences and congresses

and to elect cronies to the Central Committee and the Politburo.

In 1928, against Nikolay Ivanovich Bukharin's advice, Stalin abandoned Lenin's New Economic Policy (which restored a money economy and revived urban retail trade and small industrial enterprises) in favor of crash industrialization and collectivization of the peasantry. Aside from the mass deaths and agricultural catastrophes associated with collectivization, Stalin's policies contributed to a massive famine in 1932 and 1933, especially severe in Ukraine, the North Caucasus, and Kazakhstan. Stalin solidified his position as dictator of the Union of Soviet Socialist Republics (USSR) after the Great Purges of 1937–1938. In the Great Purges, the People's Commissariat of Internal Affairs (abbreviated from the Russian name as NKVD) executed seasoned party members, top leaders and military men, and hundreds of thousands of faceless victims. Was it a brutal but effective method of securing Stalin's power or the actions of a paranoid personality? Most historians see some of each at work. Stalin had educated a new stratum of "Red Experts" with technical degrees,

I believe in one thing only, the power of human will. • **Joseph Stalin (1879–1953)**



Yalta summit in 1945. Left to right: Winston Churchill, Franklin Delano Roosevelt, and Joseph Stalin.

and they quickly moved into the positions of those purged. The new people were Stalin's own and would be his instruments in a command economy (where the government regulates the supplies and their prices) that featured industrial gigantism.

World Affairs

Stalin's diplomatic and military decisions of 1939–1945 contributed to the greatest loss of life suffered by any warring state in the twentieth century, but under his leadership the USSR survived the Nazi onslaught. The USSR formed a winning alliance with Great Britain and the United States, and played the largest role in defeating Germany. Stalin abolished the Comintern, an international association of Communist parties, in 1943, but after World War II he set up a defensive structure of Communist buffer states to the west and an uneasy alliance with Mao Zedong on the east. His behavior in Eastern Europe hastened the Cold War and led Western countries to

form the North Atlantic Treaty Organization. Stalin then formed his own alliance, the Warsaw Pact.

Like Lenin, Stalin believed in the inevitability of imperialist wars, and to prepare for it he created a multinational Communist empire. Stalin opposed the appearance of any independent centers of power in the Communist camp, although he failed in Yugoslavia and China. He ruled over his vast domain in an increasingly irrational manner until his death, but he enjoyed popular admiration to the point of cult worship. Soviet peoples, some of them interned in slave labor camps (the Gulag), suffered tremendously another while their country acquired nuclear weapons and maintained a huge military. Stalin's behavior kept all his colleagues on edge, and they were relieved when he died of a stroke in March 1953. His successors rejected the Stalinist state terror, but the centralized economy resisted change.

Despite its dreadful costs—famines, mass deportations, chronic shortages of consumer goods, blood purges, and totalitarian controls—the Soviet system

created by Stalin appealed to a variety of Third World modernizers, who adapted it to their own purposes. Stalin and those who followed him exported not only an economic model, but techniques of power featuring feared security apparatuses. The Marxist aspects of Stalinism receded in favor of nationalism and de facto imperialism. By the twenty-first century, Stalin became a symbol of Russian power, and his image as mass murderer gave way to that of a strong leader. In Russia and China, Stalin and Mao remain cult figures among ordinary people, and one commonly hears that their policies were “70 percent correct.”

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See also Cold War; Communism and Socialism; Lenin, Vladimir Ilyich; Marx, Karl; Russian Soviet Empire; World War II

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State Societies, The Emergence of

The earliest state societies emerged independently—both Old World (in Mesopotamia, Egypt, and the Indus River valley) and New World (in Mayan regions of Mexico and in the Peruvian Andes)—after several thousands of years of village life sustained by domesticating plants and animals and a storable surplus of agricultural products.

In both the Old World and the New World the earliest state societies developed from village populations engaged in successful, surplus agriculture and the domestication of plants and animals. Although they were different from each other in many ways, they can be generally characterized as highly stratified societies in which lived farmers in the countryside and urban residents, royalty and slaves, merchants, priests, craftspeople, elites, and peasants. Although contacts took place prehistorically among regions, the emergence and evolution of the earliest state societies (a rapid rather than a gradual process) was independent.

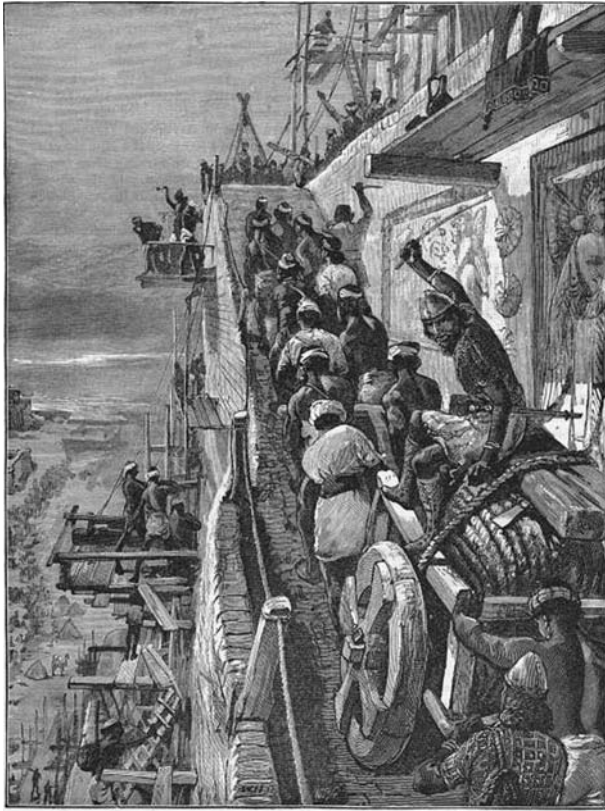
Most of the earliest states were not territorially extensive; rather, they were a collection of politically independent cities (or city-states) that shared a cultural tradition and interacted as “peer-polities.” The earliest cities were not small but rather covered several square kilometers in which lived tens of thousands of people. They were centers of innovation in the arts and the recording of information, including the first writing, which appeared in some but not all of the earliest cities and states, and they contained massive ceremonial monuments, such as temples, pyramids, palaces, plazas, and large works of art. These monuments were designed by architects in service to kings

and gods, enriched by the products of craftspeople and traders, and were built by thousands of laborers who owed their existence and livelihoods to the highest stratum of society.

In the Old World the first cities and states appeared in Mesopotamia and Egypt by about 3200 BCE, in the Indus River valley in Asia by about 2600 BCE, and in north China by about 1700 BCE. In the New World the first cities and states emerged in South America along the Peruvian coast and in the central Andes by about the middle of the first millennium CE, in the Maya region of lowland Mesoamerica (Mexico and northern Central America) by about 200 CE, and in the highland region of Mesoamerica, in the cities and states of Monte Alban and Teotihuacán, by about 200 CE. New archaeological and historical research into the emergence of the first states has altered considerably what scholars think about these societies.

The Old World

In Mesopotamia in southwestern Asia the earliest and best-known city-state was Uruk, which at about 3200 BCE reached a size of about 3 square kilometers with a population of about twenty thousand. A few hundred years earlier in Mesopotamia, only modest villages had flourished, none with a population of more than a few hundred. In Uruk the first writing in the world was invented, transforming earlier systems of recording information. The first texts on clay tablets were mainly economic records of deliveries to and disbursements from temples and palaces. However, about 15 percent of the texts consisted of lists of ranks and professions, cities, and names of trees, stones, and even the gods. In short, the first writing



Constructing the Temple of Anu (White Temple) on a terraced structure in Uruk, an ancient Sumerian city of Mesopotamia. Reproduction of an original wood engraving by William Heysham Overend. New York Public Library.

was accompanied by the creation of the first schools and materials for the education of scribes.

The city of Uruk was dominated by a precinct of temples, storehouses, treasuries, and other ceremonial buildings and plazas. New forms of art were created, from large, carved stone vases to small cylinder seals on which a miniature scene was depicted and an inscription placed. These seals were then rolled over wet clay, either on tablets or on pottery vessels, to indicate the ownership of a commodity or responsibility for a transaction. Uruk, like other Mesopotamian cities at the end of the fourth millennium and beginning of the third millennium BCE, was the center of a limited area that included two or three towns, a few hamlets, and farmsteads. The capital cities of the city-states (microstates) contained most of the population in Mesopotamia, the countryside having been substantially depopulated with the growth of the big cities. No political unity existed among the

cities and city-states, although the culture of the cities was distinctively and commonly Mesopotamian. Political unification in Mesopotamia did not occur until almost a thousand years after the emergence of the first microstates, and it did not last long because the Mesopotamian cities reestablished their venerable autonomy.

In contrast to Mesopotamia, Egypt, although lying geographically near Mesopotamia and having contact with it in prehistoric times, was an entirely different kind of state. Instead of a state of politically independent city-states, Egypt at about 3200 BCE was unified, its northern part (Lower Egypt) and southern part (Upper Egypt) brought together into a single state in which it remained for most of the next three thousand years. Egyptian unity made sense because Egypt was mainly a long strip of land along the banks of the Nile River and the land of the Nile River delta. The Nile's predictable and mostly reliable floods provided not only necessary water but also the fertile silts that were the basis for agricultural productivity.

After thousands of years of small villages, urban systems quickly appeared during the late fourth millennium BCE, the first being Hierakonpolis in Upper Egypt, which reached a size of nearly 3 square kilometers, about the size of Uruk and about the same time but not as densely settled, having a population of nearly ten thousand. The first writing in Egypt, hieroglyphic writing, differed in nearly every respect from Mesopotamian writing and appeared at about the same time. The subject of the first Egyptian texts was mainly a celebration of Egyptian kingship and had little to do with the economy of the land. From the start Egyptians displayed a strong sense of political order and stability that was guaranteed by the king and the gods.

Cities in the Indus River valley, in today's Pakistan and north India, emerged extremely rapidly after a long period of farming communities. By about 2600 BCE the most famous cities of Mohenjo Daro and Harappa flourished, both of about 2 square kilometers and more than thirty thousand inhabitants. At least a half-dozen other major cities also existed along the Indus River and its many branches and also along



Ruins in Teotihuacán, Mexico, probably the largest city of the ancient New World. Photo by Arturo Delfin.

another major river, now dried up completely. As in Mesopotamia, the Indus River valley cities were politically independent, although their material culture had characteristic commonalities. The decorations on pottery, the use of standard weights and measures, and the Indus valley script were shared among the cities.

Mohenjo Daro was a carefully constructed metropolis. A ceremonial center included a variety of structures, such as an audience hall and ritual bath. The residential section of the city was separated from the ceremonial center and included both prosperous and less-prosperous houses, well-developed plumbing facilities, and broad boulevards. Indus valley traders journeyed inland to secure precious metals and overseas as far as the Persian Gulf, where their characteristic weights and measures have been found. The Indus valley culture disappeared about 1900 BCE; that is, the big cities grew to such an extent that they could no longer be supported by the farmers in the countryside while village life continued. The Indus valley script, consisting of symbols drawn on seals and pottery,

was much more limited than either Mesopotamian writing or Egyptian writing and has not been successfully deciphered.

From small villages that characterized the north China plain for millennia, large settlements, but with modest populations, emerged at the end of the third millennium BCE. The earliest cities and states in the region appeared during the early second millennium. Erlitou at about 1700 BCE was 3 square kilometers with about forty thousand inhabitants; Zhengzhou at 1500 BCE was equally large; and Anyang at 1100 BCE may have had 100,000 people. These cities were composed of separate ceremonial areas, cemeteries, craft production areas, and residential areas. The cities were the capitals of territories that attempted to control natural resources and trade routes. Unification of these territories did not occur until the third century BCE.

Researchers have found a number of royal graves at the Anyang cemeteries. They are impressive subterranean structures entered by ramps and contain rich bronze vessels and jades and the bodies of retainers



who accompanied royal figures into the afterlife. Researchers also have found “oracle bones.” These were the shoulder bones of cattle and also turtle shells that were inscribed with the first known writing in China. The people of Anyang threw the bones into fires and interpreted the resulting cracks to predict the success or failure of royal persons. After the demise of the earliest cities and of the Shang dynasty (1766–1045 BCE), China experienced a variety of governments and wars that led finally to unification.

The New World

In lowland Mesoamerica the earliest cities and states emerged in the Maya region during the early years of the common era. During the preceding two centuries, however, large cities and vast ceremonial complexes, such as the site of El Mirador, had appeared. El Mirador, however, had no characteristic Maya writing, and thus we do not know about the rulers who must have built the magnificent pyramids and temples there. The first villages in the Maya region appeared only about 1000 BCE, so the transition to states occurred much more rapidly in this region than in any of the Old World examples.

The earliest Maya cities were enormous. Tikal’s central core of monumental structures and plazas, ceremonial causeways and residential areas was not less than 16 square kilometers, and outlying structures extend much farther. The population of Tikal numbered not less than fifty thousand. Other cities were of the size and population of Tikal, but smaller cities existed as well, although the characteristics of Maya cities—the ceremonial structures, pyramids, causeways, inscribed stelae (stone slabs or pillars)—were shared by all of them. Some cities, such as Tikal, achieved control over their rival cities, but large cities such as Caracol were always rivals of Tikal. Maya script, originating during the third century CE—but perhaps having some earlier precursors, according to recent discoveries—recorded dynastic histories, alliances, and wars. During the last centuries of the first millennium CE, most of the Maya cities in the southern lowlands in Guatemala

were substantially abandoned; in the northern lowlands in Mexico Maya cities adapted to new circumstances and survived.

In the Mesoamerican highlands in southern Mexico, the earliest cities and states at Monte Alban (in the modern state of Oaxaca) and Teotihuacán, not far from Mexico City, emerged during the last centuries BCE and the early centuries CE. Monte Alban, the capital of a three-valley region, was situated on an easily defended hill. It had a population of sixteen thousand and then grew to about thirty thousand before its collapse about 750 CE. Teotihuacán was probably the largest city of the ancient new world. At about 200 CE it covered 20 square kilometers and was occupied by an estimated 120,000 people.

The ceremonial complexes at Teotihuacán included six hundred pyramids, the largest of them flanking the “Street of the Dead.” Curiously, because Teotihuacán and the Maya had plenty of contacts, Teotihuacán had no writing system to record its complex transactions and administration. At Monte Alban people used a form of writing, limited and undeciphered, but it seems unconnected to the Maya script. The collapse of Teotihuacán was spectacular. A conflagration (apparently set by an unknown individual or group) destroyed the structures along the Street of the Dead but was not designed to engulf the residential apartment complexes of the city or the craft areas. The site was venerated by the subsequent Aztecs and is occupied today.

In South America, on the northern coast of Peru and in the central Andes Mountains, the first cities and states emerged during the early centuries CE in the former and about 600 CE in the latter. Although the two regions are different—the former requiring utilization of maritime resources in addition to maize cultivation dependent on irrigation, the latter having an agricultural regime of potatoes, quinoa (a pigweed whose seeds are used as food), and maize—they had similar lines of development. The earliest settlements were ceremonial centers; afterward cities emerged. On the coast the earliest states appeared in the Moche Valley, where elaborate burials during the first centuries CE were followed by the first cities.

So, we appeal to Edo hia (all Edo) to heed to our warnings; learn to subordinate the interest of self to that of the whole community; see yourself first as ovbiedo (child of Edo) before a member of this party or that Society. It is only by so doing that the strength in you will come out and be sustained . . . • **Oba Erediauwa (twentieth century)**

In the central Andes two sites, Tiwanaku and Wari, emerged about 600 CE and grew to imposing dimensions—about 6 square kilometers. Wari was the more densely occupied of the two sites, with an estimated population of thirty thousand. The two sites were the centers of regional influence, and Wari, in southern Peru, established an empire that extended to the coast and to the north in the interior. Both sites collapsed during the last centuries of the first millennium CE. Wari presaged the rise of the Inca in many respects, establishing an imperial system, distinctive administrative architecture, a road system, and the earliest *quipus* (knotted ropes), which encoded a sophisticated recording system (although it was not a form of writing).

The earliest states worldwide emerged when populations were attracted to settlements, transforming them into cities and resulting in depopulation of the surrounding countryside. The earliest cities grew as defensive locations offering military protection from neighbors, as the locations of central shrines and pilgrimages, as environmentally favored locations for agricultural production, and/or as key points on trade and communication routes. The territories controlled by cities, and their states, varied considerably. Some states were small—city-states often co-existing with other city-states—whereas others were territorially expansive, such as Egypt, or centered on single cities that controlled their regions, such as Teotihuacán or Wari.

For human civilization there was no turning back from the way of life in the earliest cities and states.

Larger states and empires emerged, trade and warfare increased, and the pace of innovation in social life increased exponentially and often in unpredictable ways.

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See also China; Harappan State and Indus Civilization; Mesoamerica; Mesopotamia; State, The

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State, The

States evolved to organize large numbers of people in common endeavors. The first rulers claimed authority from the gods that people worshiped and established armies to defend their territories. As the principal units of civilization, states built cities and roads, established markets and monetary systems, conquered new lands, and waged war, all in the name of self-preservation and protecting their people.

Almost everywhere, people pay taxes and obey laws enforced by separate sovereign states. But during most of the time humans have walked the Earth states did not exist. For thousands of years, small bands of hunters and gatherers as well as the earliest food producers lived without rulers, without officials, without rents and taxes, and without the protection, costs, and services that states brought to later generations.

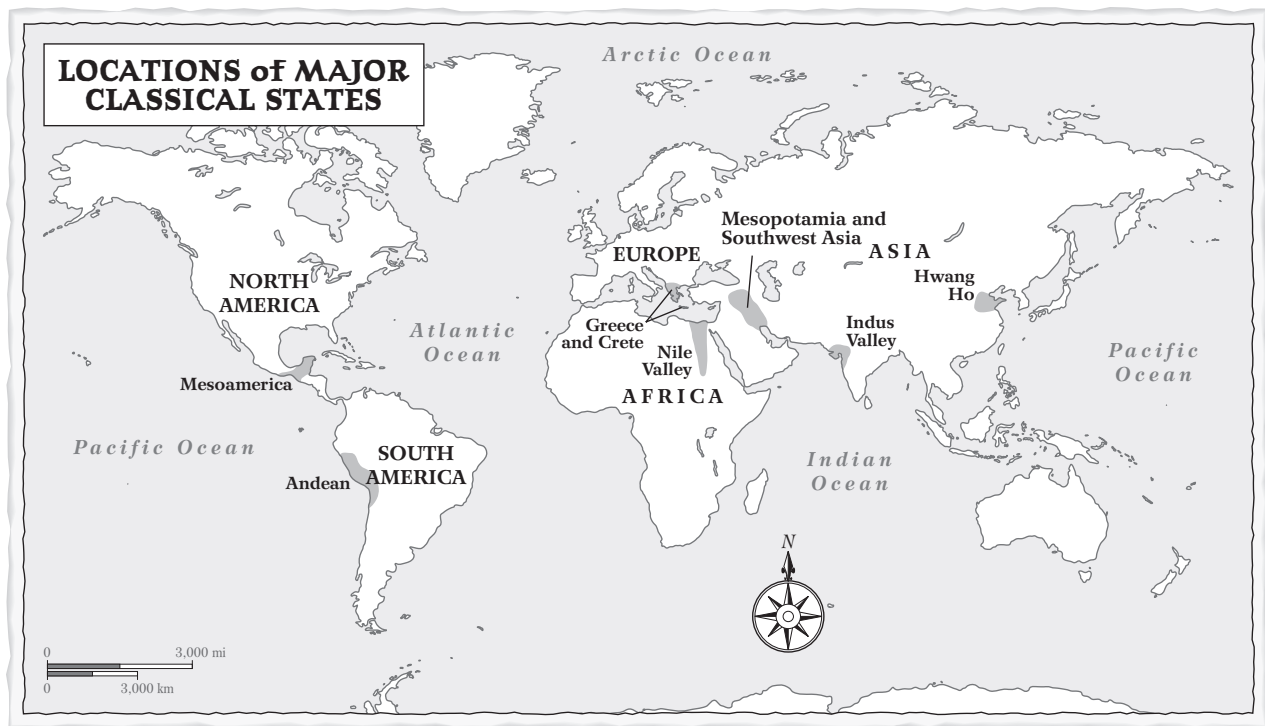
States arose with cities; their great advantage was that states could organize common effort among large numbers of people. This allowed states to expand their boundaries at the expense of less well-organized neighbors, until, today, only a few isolated, stateless peoples survive in places such as the interior of New Guinea, in the Amazon and Southeast Asian rainforests, and in African deserts.

Early Rule

Not much is known about how states began. Written records that allow historians to find out about the past were invented to keep track of tax payments, and only by degrees was writing used for other purposes. We do know that in the land of Sumer in southern

Mesopotamia (modern Iraq), where the first cities appeared about 3500 BCE, priests were the first rulers. They claimed to serve and communicate with the gods who, they believed, controlled weather, harvests, and all other aspects of the natural and human environment. Persuading common people to secure divine protection for their harvests by giving part of their crop to the gods perhaps seemed a prudent form of insurance against disaster. But in practice it meant handing over grain, wool, and other valued goods to priests, the gods' servants, as a tax. They used some of their tax income to feed workers who built monumental temples to house the gods and busied themselves keeping the gods happy by offering them food, drink, and every other comfort they could think of. Part of the taxes also went for the priests' own support and for the support of those who collected grain from everyone else and kept tax records. Priests also used extra food to support male and female artisans who manufactured fine woolen cloth to clothe the gods' images, and they traded extra cloth far and wide with outsiders, who in return supplied the temples with a great variety of precious goods for use in temple rituals.

By seeking to satisfy the gods so energetically, the priests of Sumer mobilized large-scale common effort across long distances and among different peoples. New skills multiplied, so did new ideas of how to please the gods, and soon the wealth and splendor of Sumerian temples and cities surpassed anything others could match. But conspicuous wealth quickly attracted armed raiders from afar, so priests soon began to need trained warriors, equipped with metal weapons and armor, to repel attacks successfully.



An Uneasy Alliance

After 3000 BCE, constructing massive city walls rivaled temple construction; warriors soon clashed with priests when it came to deciding what needed to be done to keep everything safe and secure. Warfare intensified over time. Sumerian cities started to form rival alliances and fight one another. By the time of Sargon of Akkad (c. 2360–2305 BCE), the first conqueror on an imperial scale, warriors had attained primacy in affairs of state, though to make their power secure, military rulers still needed priests to assure divine help. Accordingly, an uneasy alliance between soldiers and priests became characteristic of subsequent centuries of Mesopotamian statecraft and pervaded most of subsequent world history as well.

Imperial rulers had two persistent problems. One was to defend themselves against rivals to their authority, either unwilling subjects and/or neighboring states and peoples. The other was to choose capable officials to collect taxes, enforce laws, and obey instructions without arousing too much local resistance. Keeping reliable records, rewarding those who served them well, and getting rid of inefficient or disloyal subordinates was a full-time job for rulers and for the small number of high officials with whom the rulers discussed what ought to be done day after day.

Collectively, rulers and the civilian and military subordinates who served them constituted an unstable array of separate rival states; and the unending tumult of domestic struggles and foreign wars that resulted constitute the backbone of traditional history.

For a long time, the mingling of military with priestly power that emerged in Mesopotamia by the time of Sargon of Akkad remained the civilized norm. To be sure, other early civilizations followed different paths toward imperial statehood, often combining military and divine authority in a single person from the start. Menes, the first Egyptian pharaoh, for example, claimed to be a living god as well as leading the army that united Egypt for the first time, and all his successors continued to claim to be gods. Likewise, Chinese emperors ruled by virtue of the Mandate of Heaven (divine justification for their rule) maintained by their personal participation in religious rituals, while they also commanded large armies, sometimes in person but more often through subordinate generals. Similarly, Japanese emperors claimed descent from the sun goddess as recently as 1945, even though through most of Japanese history local warrior chieftains and clan leaders governed Japan without much regard for reigning emperors' wishes. In the Americas also, priestly authority seems to have been initially preeminent and then was subsequently challenged by



A stela commemorating Ur-Nammu, king of Ur in Mesopotamia circa 2000 BCE, shows him receiving the order to build the Ziggurat. Library of Congress.

military leaders in much the same fashion as in the Old World. But information from the Americas is very scant since readable texts are far fewer.

In some places—among Phoenicians on the east coast of the Mediterranean Sea and in ancient Greece and parts of Italy, small city-states arose after about 800 BCE. They first were ruled by kings, but in many Greek cities and later in Rome, magistrates elected for a single year eventually displaced hereditary rulers. Thereafter, elected magistrates divided authority with popular assemblies of citizen-soldiers and councils of wealthier landowners in an unstable and ever-shifting fashion until the Roman Emperor Augustus united the shores of the Mediterranean into a single imperial state in 31 BCE.

Religious Influence

The ancient Greek and Roman city-states remained exceptional inasmuch as they paid little attention to priesthoods and religion and relied on part-time citizen armies. But this departure from civilized norms changed when the Roman army became full time and professional (107 BCE) and priests gained far greater importance after the Emperor Constantine legalized Christianity and his successors made it the official religion of state (379 CE).

Islam reinforced the role of religion in affairs of state when the Prophet Muhammad introduced a new revelation of God's will that claimed to correct and

supersede both its Jewish and Christian predecessors. A long series of victories against the Roman and Persian empires in western Asia and throughout North Africa and Spain (634–732 CE) seemed to prove that the God Muslims, Jews, and Christians worshipped favored the Muslims. Nonetheless, Christianity survived, mainly in Europe. Missionaries spread it northward among Germanic and Slavic peoples—a process more or less completed when Lithuanian rulers accepted Roman Catholicism after 1378. Islam likewise continued to make converts on every front—northward among Turks, eastward into India and Southeast Asia, and in both eastern and western Africa. Until as late as 1669, Muslims also advanced into Europe after the Ottoman sultan Mohammed extinguished the last remnant of the Roman Empire by conquering Constantinople in 1453. Muslim-Christian rivalries still affect international affairs in our own time, and the hold of religion on human minds and feelings remains intense.

Waging War

Until well after the year 1000, states everywhere were usually ruled by kings or emperors who spent most of their effort waging war and preparing to repel attacks. Enormous resources were directed toward building fortified castles and walled cities. The Romans and Chinese even tried to safeguard endangered frontiers by building walls scores and even hundreds of miles



Leon Cogniet, *Battle of Heliopolis* (19th c.). Oil on canvas. The battle marked the beginning of the end of Byzantine rule in Egypt and became part of a pattern of Muslim conquests extending as late as 1669.

in length. Across the centuries, attack and defense alike required more and more elaborate methods and materials, and collecting enough metal and finding skilled artisans to make the best armor and weapons was always a matter of vital concern for rival states everywhere. Making more and more powerful weapons, and fortifying against them, was the most unstable aspect of technology throughout the civilized world; training soldiers to use those weapons efficiently was also important for achieving military success. The effort paid off in the sense that states spread their power over more and more of the inhabited world, even though danger from rival states remained just as great as before.

States built roads to speed marching armies on their way to battle that were also useful for commerce. They built specialized warships using pioneering new techniques in shipbuilding. Occasionally, states also sought to appease the populace of capital cities by organizing grain shipments to assure food supplies

and arranging chariot races and other ceremonies for popular entertainment. But state-managed welfare services for the poor and ill—so important today—were unusual. Religious institutions did something to fill the gap, but private families and charitable neighbors were mainly responsible for whatever help needy persons received.

Money and Trade

From the start, military predominance in matters of state was affected by the persistent problem of how to gather enough raw materials and skilled artisans to make the weapons they needed. Metallic ores in particular often had to be mined and refined in remote locations and then carried to cities where artisans turned them into weapons. Rulers and soldiers could not manage this process in person. Instead they relied on traders and local suppliers, who worked for pay and profit. The invention of coined money about 550 BCE smoothed and accelerated the exchanges of goods and services involved in weapon making and enlarged the scope and reach of peaceable markets as well. In time, states found it convenient to collect taxes in cash instead of in kind, whereupon the money power exercised by bankers and merchants became great enough to affect even the mightiest of states.

Evidence of the power of money in state affairs showed up in the eastern Mediterranean coastlands and eastward to Iraq after Alexander of Macedon's conquests (334–323 BCE) and toward the end of the Roman republic. Thereafter, market relations based on more or less voluntary buying and selling remained a powerful supplement and occasional rival to military and priestly command as a way of coordinating human labor among numerous and far-flung populations. Oddly enough, Christian monasteries and Buddhist monks played a conspicuous part in spreading habits of buying and selling more widely throughout Europe and Asia during the early middle ages when state-organized taxation diminished after the collapse of the Roman Empire and Han dynasty.

A decisive shift came after 960 CE when the Chinese government began to collect taxes in cash from



“The death of the property tax!” Taxes were “born” along with states; although unpopular, they are integral to the states’ success.

ordinary peasants, compelling millions of persons in the course of the next century to find something to sell. They were able to do so since cheap and safe transportation along the rivers and canals of China made even small differences of price an effective stimulus for local, specialized production. Wealth increased, inventions proliferated, and Chinese goods and skills soon began to spread both overland across the steppes and by sea to India and the east coast of Africa. Even the remote Mediterranean became the seat of a general commercial revival when Italian merchants started to compete with Muslim traders.

As a result, enhanced money power presented states and rulers throughout Eurasia with new challenges. In China and the rest of Asia, bankers and merchants remained less powerful than military rulers and officials. But in some parts of Europe, merchants came to govern sovereign city-states, and, within those cities, market relations, sustained by a far-reaching system of water transport, met fewer obstacles than elsewhere. After 1346 the spread of gunpowder weapons—initially invented in China—made warfare more and more costly, and no single imperial state in Europe ever managed to monopolize the market for such weapons within its borders, as China did in Asia.

As a result, European kings and city-states soon found it necessary to pay money to soldiers and arms makers. When money ran short, especially in times

of war, they often borrowed from bankers. Repayment was always difficult, but repudiating state debts meant higher costs next time, and states that cooperated best with bankers came to enjoy clear advantages in war. First Italy, then the Dutch, and, after 1650, the English pioneered the resulting commercialization of war in Europe, while competing European armies and navies sustained rapid and persistent technological changes that eventually gave them global superiority that became obvious by 1800.

Exploration and Conquest

World balances were deeply affected by the discovery, settlement, and exploitation of the Americas. After the first voyages to the New World, Spain, Portugal, France, and England swiftly established trans-Atlantic empires, and when imported diseases caused epidemic deaths among Amerindians, they transported millions of slaves from Africa to work on sugar plantations and perform other laborious and menial jobs. New, racially mixed populations in the Americas began to supply Europeans with silver, furs, fish, sugar, and other valued commodities, while the European imperial states fought naval wars and sent expeditionary forces to the Americas from time to time, shifting boundaries to and fro, especially in the tropical Caribbean.

After about 1750, three factors came into play that changed traditions of statecraft profoundly. One was large-scale application of inanimate forms of power—flowing water, then steam and electricity. This facilitated empire building by the industrialized nations of Europe throughout Africa and Asia so that by 1914 a handful of European states had seized control of most the Earth.

Second were political revolutions, beginning in 1776 in the Americas and then in western Europe, that engaged whole peoples in politics more actively than before. The resulting intensification of political mobilization also expanded around the Earth. As it did so, local peoples challenged and then displaced their European colonial masters so that, by the late twentieth century, the nations of Asia and Africa were again sovereign.

A third transformation was the radical expansion of state intervention in social and economic affairs. First came mass mobilizations inaugurated during the wars of the French Revolution, 1792–1815. Enormously enlarged armies required unprecedented quantities of supplies of every kind, transforming national economies more drastically than ever before.

Power and Protection

State officials expanded their reach by taking responsibility for the welfare of entire nations. Otto von Bismarck, chancellor of Germany, pioneered this breakthrough between 1883 and 1889 by introducing sickness and accident insurance and old age pensions to wean German working men away from Marxist socialism and assure their loyalty to the newly created German Empire. Other leading European countries followed suit by the time World War I ended in 1918. In 1917 Russian Communists came to power and asserted state control over all economic activity. Not long after, the United States responded to the Great Depression of 1929–1937 with social security legislation for old age and emergency relief projects to put the unemployed to work.

Ever since then public opinion in industrialized countries expected, indeed demanded, that governments intervene in more and more crisis situations—hurricanes, earthquakes, riots, wildfires, epidemics, financial crashes, and the like—to minimize losses and aid distressed populations. States that had once been ruthless tax collectors with little or no concern for the wishes and needs of the taxpayers found themselves claiming—and sometimes really trying—to protect everyone from everything that threatened them. Total success remained impossible, but organized state intervention in emergency situations often did reduce human suffering and save lives.

Yet, simultaneously, the creation of weapons of mass destruction—nuclear, chemical, and biological—equipped a few powerful states with the ability to launch attacks upon one another capable of destroying human life on a greater scale than ever before, and our encroachment on other forms of life, sustained by states and the economies that support them, threatens to upset the global ecosystem drastically, with unforeseeable consequences.

State power has not ceased to threaten as well as to protect humankind. The power to protect also gives states the power to destroy. As states use their sovereign power to protect themselves and their citizens, they remain capable of wholesale, perhaps even of global, destruction.

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See also Colonialism; Decolonization; Empire; Engines of History; European Expansion; Government; Industrial Revolution

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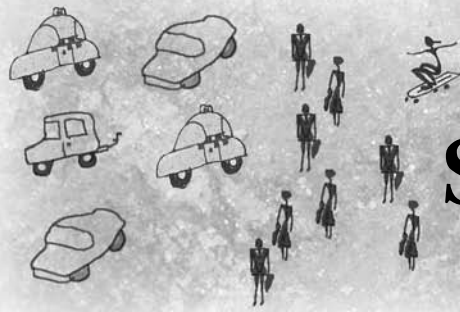
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Steppe Confederations

Steppe confederations are large and militarily powerful state-like structures that emerged many times in the steppes of Eurasia (the vast regions that were populated by pastoral nomads) from the first millennium BCE to the eighteenth century CE. Perhaps the most famous was the Mongol Empire created by Chinggis (Genghis) Khan in the thirteenth century.

Steppe confederations appeared from the first millennium BCE to the eighteenth century CE in regions dominated by pastoral nomads, and for this reason they were very different from the states of the agrarian world. To understand them fully, it is important to be clear about these differences, but regardless of those differences, steppe confederations could be so powerful and so influential that it seems foolish not to regard them as states. This article treats steppe confederations as a distinctive type of state and uses the phrase “steppe confederations” interchangeably with the phrase “pastoralist states.”

Nomadic pastoralists may have lived in the steppes of Eurasia from as early as the fourth millennium BCE. As the archaeologist Andrew Sherratt has shown, their distinctive way of life was made possible by technological changes that enabled pastoralists to exploit domesticated livestock more efficiently by using not just their meat and hides but also their “secondary products”—their traction power, wool, milk, and manure. These could be used while the animals were still alive, so the “secondary-products revolution” greatly increased the amount and variety of resources available to livestock herders, making it possible for entire communities to live almost exclusively from their livestock. By making it possible for communities

to exploit the arid steppes, which were too dry to be farmed, pastoralism permitted the settlement of the huge belt of arid grasslands that extends from Manchuria to Mesopotamia and across North Africa and into East Africa. The most powerful steppe confederations have appeared in the steppes between Manchuria and eastern Europe. Here, the animal of prestige was the horse, though sheep, camels, cattle, goats, and yaks were important components of herds in different regions.

Building Steppe Confederations

The appearance of steppe confederations is curious because pastoralists appear to lack the crucial preconditions for state formation. Pastoralism is far less productive than most forms of farming, so it usually supports smaller and more scattered populations. Because most pastoralists are mobile, they also have little reason or opportunity to accumulate large stores of wealth. Finally, pastoralists live most of the time in relatively self-sufficient small groups so that, except in times of war, they need few of the organizational services that states provide. Small populations, limited wealth, and a high level of self-sufficiency make the appearance of pastoralist states something of a puzzle. How was it possible to build powerful states under such conditions?

The first answer is that pastoralists had military advantages that partly compensated for their demographic and economic weakness. Pastoralist lifeways naturally inculcated military skills, for pastoralists had to learn how to hunt—which required mastery of weapons—how to navigate over large distances, and, particularly in the arid lands of Eurasia, southwest

Asia, and northern Africa, how to ride. The physical demands of dealing with large animals and the harshness of steppe and desert climates inured pastoralists to physical hardships, an advantage in warfare, while frequent raiding provided regular military practice. Though associated mainly with males, military skills were also widespread among women in pastoralist societies. Many accounts, including the ancient Greek historian Herodotus's tales of "Amazons," show that pastoralist women could be formidable fighters, and many steppe burials of women contain large stocks of weapons and armor. The military prowess of pastoralist communities is evident as early as the fourth millennium BCE, for steppe tombs (*kurgany*) from that period contain weapons as well as goods produced in neighboring agrarian communities. Doubtless some of these goods were acquired through trade, but there can be little doubt that even the earliest pastoralists, like their descendants, often used the threat of force

to exact tribute. The earliest written accounts of pastoralist lifeways all stress the significance of military skills among pastoralists. In his famous account of the Scythians, written in the fifth century BCE, Herodotus reported that Scythian leaders organized annual meetings at which those who had not killed an enemy in the previous year were shamed. In the first century BCE, the Han historian Sima Qian (1961, 2: 155) wrote of the Xiongnu, who lived in modern Mongolia, "The little boys start out by learning to ride sheep and shoot birds and rats with a bow and arrow, and when they get a little older they shoot foxes and hares, which are used for food. Thus all the young men are able to use a bow and act as armed cavalry in time of war. It is their custom to herd their flocks in times of peace and make their living by hunting, but in periods of crisis they take up arms and go off on plundering and marauding expeditions." Unlike peasants, pastoralists needed little training before going to war.



Nomadic Kazakh family on the Golodnaia Steppe, 1911. Photo by Sergei Mikhailovich Prokudin-Gorskii. Library of Congress.

The role of kinship in pastoralist societies explains why pastoralist communities could rapidly form large military alliances. Nomadic pastoralists normally lived in small groups of related individuals linked to neighboring groups by ties of kinship or fealty. Family or clan leaders would take important decisions about migration routes or handle conflicts with neighboring families and clans. But violent conflict was common, partly because of the extreme volatility of pastoralist lifeways. Entire herds could be lost in spring frosts or because of epidemic diseases, and those affected by such disasters often had little choice but to steal livestock from other pastoralists. Such conflicts could prompt the rapid formation of local military alliances as local leaders sent riders to seek the support of other pastoralist leaders to whom they were linked by kinship, friendship, allegiance, or past obligations. Where the threat was on a large enough scale, the same mechanisms could bring together huge armies, linking pastoralist tribes over large areas. Herodotus (1987, 4: 119) records that in 513 BCE, when the Persian ruler Darius invaded the Black Sea steppes through modern Romania and Moldova, “The Scythians reasoned that they were not able to resist Darius’ army in a straight fight on their own, and so they sent messengers to their neighbors.” Though not all communities joined the alliance against Darius I, a large number did, and Darius eventually had to retreat in the face of sustained and highly effective guerilla attacks.

Alliances also formed to conduct booty raids. As the supporters of the future Chinggis Khan made clear when they elected him their khan in about 1190 CE, they expected to become rich under his leadership: “When you are made *qan*, we, galloping as a vanguard after many enemies, will bring in girls and *qatuns* (i.e., ladies) of good complexion, palace tents, . . . geldings with fine rumps at a trot, and give them to you” (Christian 1998, 391–392).

Forming effective armies in response to external threats or the prospect of booty was one thing; creating a permanent alliance powerful enough to conquer neighboring states and stable enough to be regarded as a state was quite another matter. As the political

theorist Ellman Service has argued, states are distinguished from weaker political systems because they have mechanisms to prevent splitting along tribal lines. “The state,” argues Service, “is a system specifically designed to restrain such tendencies” (Cohen and Service 1978, 4).

In the agrarian world, large and productive populations generated flows of wealth that could be used to weld regional leaders into a single political system, or to buy the services of armies. However, pastoralist communities generated little in the way of surplus wealth. So, to create a stable tribal alliance, pastoralist leaders had to institutionalize the lure of the booty raid. To bind different tribes into a durable political and military system, pastoralist leaders had to secure a steady flow of wealth from neighboring agrarian regions. It was the creation of such stable mechanisms of tribute taking that turned temporary military alliances into the pastoralist equivalents of states. Though normally exacted from “outsiders,” these flows were the functional equivalent of the taxes that sustained agrarian states. The anthropologist Thomas Barfield has analyzed how such stable flows of tribute were established for the first time late in the first millennium BCE, across the northern Chinese borders. In what was really a systematic form of extortion, the Xiongnu, based in modern Mongolia, threatened to launch devastating raids into China’s agrarian regions unless they were bought off with annual tributes in foodstuffs, silks, and other valued goods. “Just make sure,” a Xiongnu official once explained to Chinese envoys, “that the silks and grain-stuffs you bring the Hsiung-nu [Xiongnu] are the right measure and quality, that’s all . . . If the goods you deliver are up to measure and good quality, all right. But if there is any deficiency or the quality is no good, then when the autumn harvest comes we will take our horses and trample all over your crops” (Christian 1998, 192). As long as Chinese states continued to pay tribute, Xiongnu leaders could lavish gifts on their followers and maintain their loyalty. The key to success lay in the plausibility of the threat, and only a pastoralist leader who had achieved unquestioned authority over large contingents of steppe soldiers



could make such threats with credibility. So in the steppes, state-building normally began with a skillful and charismatic leader creating an exceptionally disciplined following.

Establishing stable flows of tribute from large agrarian states was extremely difficult, which is why pastoralist states appeared much later than the first agrarian states and were also less common, more fragile, and more ephemeral: few lasted more than a generation or two, as they depended so much on the charisma and skill of their founders. However, once a state had been created, there was much that farsighted leaders could do to stabilize them. The most natural step was to launch new wars of conquest that could supply more booty and remind existing tribute payers of the dangers of nonpayment. Eventually, however, all successful pastoralist leaders found they had to build durable bureaucratic and political structures, similar to those of the agrarian world. Even before they became supreme leaders, the most farsighted steppe leaders often built up elite military units or bodyguards that were organized bureaucratically, bound closely to the overall leader, and kept apart from the traditional structures of kinship. The starkest example of such a strategy can be found in Sima Qian's description of how Maodun, the founder of the Xiongnu confederation, built up a highly disciplined personal following. Maodun ordered his followers to shoot at any object towards which he aimed his arrows, and executed those who refused to obey. He aimed, first, at one of his favorite horses, killing all those too fearful to follow his example; then aimed an arrow at his favorite wife, once again executing those who failed to shoot; then he aimed at his father's horse. Finally, he aimed an arrow at his own father. After replacing his murdered father, Maodun deliberately broke up kinship structures amongst his followers, organizing them in units of ten that owed allegiance to each other rather than to kinship units.

At the very top of any successful steppe confederation, the key to stability lay within the ruling family. It was vital to secure the succession and it was vital that the successor be an able leader. This was perhaps the most difficult task to achieve; we can be sure that

all steppe leaders thought hard about it, and some, including Chinggis Khan and Maodun, succeeded in handing power over to sons who were competent enough to hold their empires together. Below the ruling family, structures were created to bind regional leaders to the state. All the most powerful steppe leaders, beginning with Maodun, organized regular meetings of regional leaders. These pastoralist "parliaments" offered the chance to keep an eye on potential rivals, to take rudimentary censuses, to consult about policy, to share worship, and even to hold competitions in a pastoralist equivalent of the Olympic games (of which the modern Mongolian Naadam festival is a survivor). Successful steppe leaders also built palaces or capital cities, with the help of artisans from the agrarian world, in order to demonstrate their wealth and display their prestige. The Mongols, the most successful of all pastoralist leaders, used advisers from conquered regions to help them construct elaborate fiscal systems, rapid communications systems using post-horses, and written laws. As they became more reliant on the resources and the commercial and bureaucratic skills of the agrarian world, some steppe leaders, such as the Seljuks, the Ottomans, and the Mongol rulers of China, eventually moved their capitals into the agrarian world, turning pastoralist states into conventional agrarian states that retained little but a symbolic memory of their pastoralist origins.

Major Steppe Confederations

Powerful alliances of pastoralist leaders may have appeared as soon as pastoralism itself emerged, from the fourth millennium BCE. Certainly, the archaeological evidence suggests that even this early, there were militaristic migrations of pastoralist peoples over large areas. By the first millennium BCE, written evidence appears of large-scale pastoralist attacks, such as the Cimmerian and Scythian invasions of northern Mesopotamia and Anatolia through modern Azerbaijan. By this time, some steppe leaders were being buried in very large, elaborate tombs with slaves, horses, and huge hoards of wealth, which indicates their wealth and power. And it is clear that Scythian leaders north

of the Black Sea exacted tribute from farming communities in modern Ukraine and the Crimea. But none of this evidence suggests the existence of steppe confederations or true pastoralist states, that is, of stable systems of rule capable of sustained tribute taking from neighboring agrarian states.

The first steppe confederation that really fits this definition was the Xiongnu confederation created by Maodun in Mongolia early in the second century BCE. Knowing his father favored a younger brother, Maodun built up the disciplined following of soldiers described earlier, and used it to overthrow his father and remove his father's closest allies. Having established his unquestioned supremacy among the Xiongnu, he then turned on two large neighboring confederations, looting them and enriching his followers. Finally, just as the Han dynasty was establishing itself in northern China, he led devastating booty raids into the region, eventually defeating the first Han emperor, Gaozu (reigned 206–195 BCE). In 198 BCE Gaozu negotiated the first of a series of treaties under which he recognized Maodun as an equal, promised him a royal bride, and agreed to send him annual “gifts” of silk, wine, grain, and other goods. Meanwhile, the Xiongnu had also established tributary relationships with other tribes of pastoralists, and with the many small towns and communities of modern Xinjiang and the Tarim Basin, as well as with some of the cities of Central Africa. Their authority soon reached from Manchuria to Central Africa, making the Xiongnu state one of the largest of all pre-modern states. The relationship with the Han was the key to Xiongnu power simply because of the huge wealth and prestige that the relationship brought them. It was maintained for almost sixty years until a more powerful Han ruler, Wudi (reigned 141–87 BCE) decided that the price demanded by the Xiongnu was too high, and launched a decades-long war on the Xiongnu. Though weakened and never again the diplomatic equals of the Han, regional Xiongnu leaders retained significant power for the best part of three centuries.

The history of the Xiongnu was to be repeated several times during the next two thousand years. In 552, a dynasty known as the Ashina created the

first Turkic Empire. Like the Xiongnu state, the first Turkic Empire was created from a base in Mongolia. It also owed much to the charisma and skills of its founders, the brothers Bumin and Ishtemi. Within fifteen years of its creation, it reached from Manchuria to the Volga river, negotiating on equal terms with all Eurasia's superpowers: China, Persia, and Byzantium. However, the empire fell apart within two generations of its founding, partly because of conflicts within the ruling family. A second Turkic Empire was established in 683 and lasted until 734, though it never reached as far west as its predecessor. It was overthrown by a Uygur dynasty that lasted for almost a century, until 840.

A Mongol ruler, Temujin (c. 1160–1227), created the greatest of all the steppe empires in the early thirteenth century. Like Maodun, Temujin made his way in a hostile environment of vicious tribal and personal conflict. He built up a loyal and disciplined following, and in 1206, at a gathering of regional leaders he was elected overall khan, or *Chinggis Qan* (from which derives the popular Anglicized version of the name, Genghis Khan). Chinggis Khan led Mongol armies in wars of conquest in northern China and Central Asia. After his death, his successors conquered the rest of China, Russia, and Persia. In the 1260s his grandson Khubilai Khan briefly claimed sovereignty over Mongolia, China, Central Asia, Russia, and Persia—the largest land empire ever created.

Other pastoralist states were created in Mongolia in the sixteenth and seventeenth centuries. The Jungar Empire, created in western Mongolia in the late seventeenth century and crushed by China's Qing dynasty in 1758, probably counts as the last great steppe confederation.

The largest and most influential of steppe confederations emerged in the steppes north and west of China, probably because from there they could extort wealth from the largest and wealthiest power on earth. But other steppe confederations appeared further west. At the western end of the steppes, the most powerful pastoralist confederations appeared in Hungary, from where they could extort the wealth of the Roman and Byzantine empires. The best known

of these states are those of the Huns (in the fifth century) and Avars (sixth century), though earlier pastoralists too had briefly extorted wealth from their agrarian neighbors in eastern Europe. Both the Hun and Avar states extracted large amounts of wealth from their neighbors, but neither survived as a major power for more than a generation, perhaps because the steppes of Hungary offered too small a base for really large pastoralist armies. In central Asia there appeared many powerful pastoralist alliances, some of which endured for several generations. The geography of Central Africa denied them the possibility of extorting wealth on the scale of the Mongols or even the Huns; their wealth came from the many small oasis city-states of the region. The most powerful of the Central African steppe confederations, the Kushan Empire (c. 45–c. 230), based its power primarily on agrarian communities, and, despite its pastoralist origins, should really be counted as a pastoralist dynasty ruling agrarian states. The same could be said of the Seljuks, who conquered much of Central Africa in 1040 and went on to conquer much of Persia, Mesopotamia, and Anatolia within a generation.

North and west of the Caspian Sea, the peasant migrations that were to lay the foundations for the emerging states of Russia created new opportunities for pastoralist leaders to exact tribute. The Khazar Empire was established along the western shores of the Caspian sea in the early seventh century by rulers from the Turkic Ashina dynasty. It lasted for more than three hundred years and was eventually destroyed in 965 by an army from Kievan Rus' (a principality with its capital at Kiev). Its heartland remained in the lands just north and west of the Caspian, and its rulers always retained a sense of their pastoral origins. It exacted tribute from neighboring pastoralists and from agricultural communities in the lands of modern Russia and Ukraine; it also became a major international power, negotiating on equal terms with both Baghdad and Constantinople. Its wealth came from a wide variety of sources, from local tributes, from taxes levied on trade, and from taxes levied on agrarian populations in the Caucasus and Rus'. After the Mongol conquest of Rus' in

1237–1241, the heirs of Chinggis Khan's eldest son, Jochi, established a state often known as the Golden Horde or the Kipchak khanate. For more than a century this state successfully exacted tribute from the Caucasus and from Rus' before fragmenting into smaller regional states, none of which managed to establish such stable flows of tribute.

Steppe Confederations in World History

Though it makes sense to regard them as states, steppe confederations were very different from the agrarian states that give us our conventional images of statehood. Built with limited resources, steppe confederations had to rely mainly on external sources of revenue, taken by force from agrarian communities very different from their own. The military skills inculcated by pastoralist lifeways made pastoralists formidable in warfare, but establishing stable systems of tribute was possible only under the most powerful and skillful of steppe leaders. Maintaining durable flows of tribute was much more difficult than mounting periodic booty raids, which explains why so few pastoralist leaders succeeded in creating true pastoralist states, and why pastoralist states rarely survived for more than two or three generations. But when pastoralist states did emerge, they could prove extremely powerful and extremely influential. They were some of the largest states that have ever existed, and their impact on Eurasian history was at times revolutionary.

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See also Eurasia, Inner; Pastoral Nomadic Societies; Secondary-Products Revolution; State, The

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Sugar

Sugar, a dietary source of sweetness and energy, can also act as a binder, stabilizer, caramelizer, and bulking agent. Throughout much of history sugar was a luxury. The expansion of the industry in the Western Hemisphere increased the supply of sugar in Europe, making it less costly; it also linked sugar production with slavery and plantation agriculture, thus affecting lasting political, economic, social, and cultural consequences.

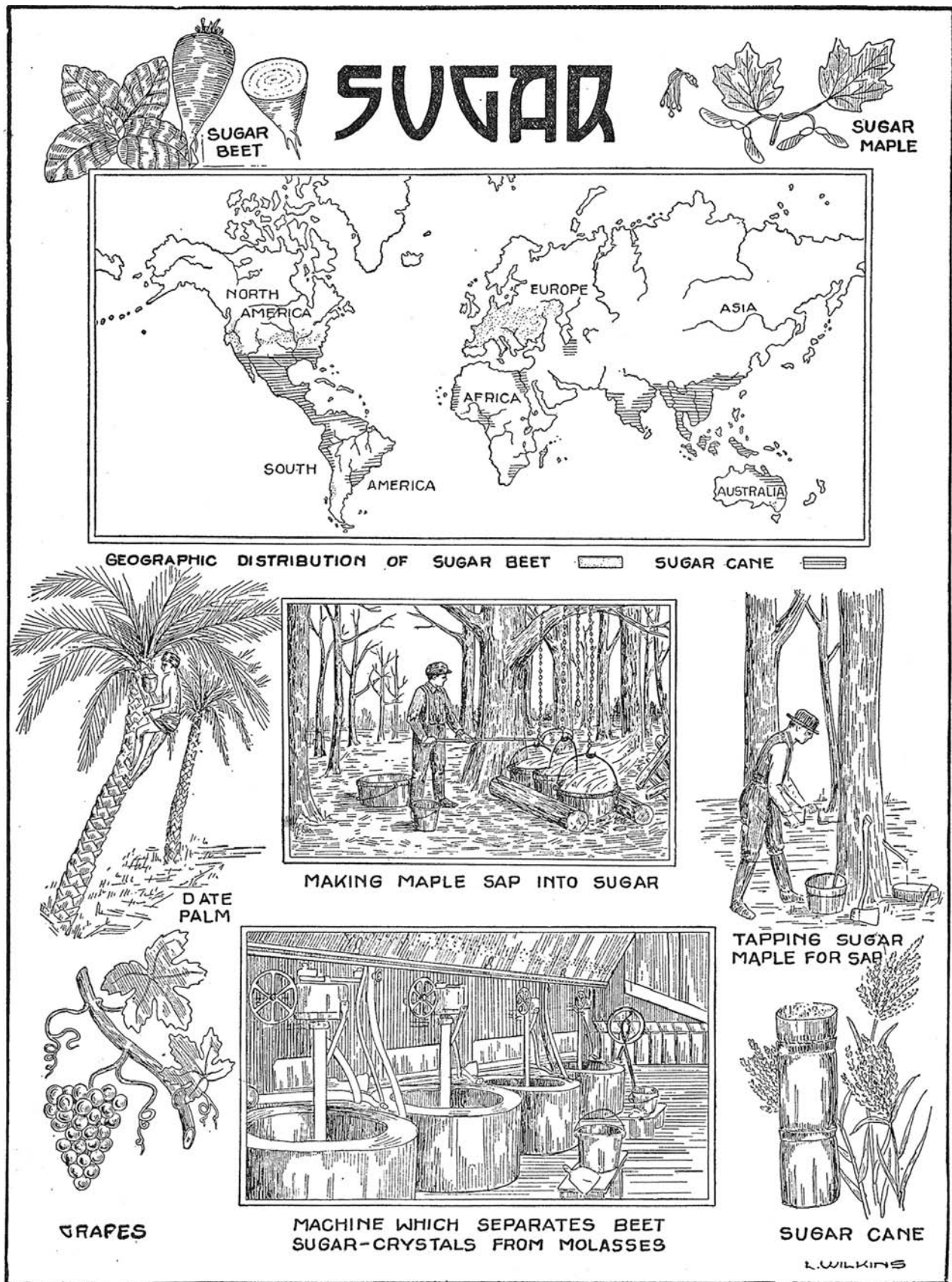
The familiar white crystals in the sugar bowl on the breakfast table are virtually pure sucrose, an organic chemical defined technically as a disaccharide carbohydrate. Other common disaccharides are lactose, the sugar found in milk, and maltose or malt sugar. Sucrose is a product of photosynthesis, the complex biochemical process whereby green plants use light energy to combine aerial carbon dioxide and hydrogen from soil water into rings of carbon atoms to which atoms of hydrogen and oxygen are attached, usually in the same ratio as in water (hence “carbohydrate”). It is found in the sap of many plants, where it functions as stored energy, but the commercial article—and the substance usually meant when people speak of sugar—is chiefly extracted from sugarcane or sugar beet.

Sucrose is composed of two simple carbohydrates, likewise very prevalent in nature: glucose (also called dextrose and grape sugar), which occurs in fruits, plant juices, and honey, as well as in blood, and fructose (levulose or fruit sugar), which occurs in the free state, notably in honey. Sucrose is easily inverted by acid hydrolysis or enzyme action into glucose and fructose, both monosaccharides (so named because

they cannot be reduced to smaller carbohydrate molecules) that share the same chemical formula but differ in atomic structure and are interconvertible by chemical and biological reactions. Fruits, young vegetables, floral nectar, and the sap of certain plants and trees owe their sweet taste to the presence of different sugars. As a saccharide, sucrose is also related to starch, another form of stored energy consisting of long branching chains of glucose molecules.

Multiple Sources

These affinities explain how sugar can be obtained from two quite dissimilar botanical sources: sugarcane, a perennial giant grass grown in the tropics and subtropics for its stalks and exploited industrially for more than two millennia, and sugar beet, a temperate-zone biennial of the goosefoot family, which has been harvested for the sugar in its roots for barely more than two centuries. They also explain how sugar has more recently been partially replaced in manufactured foods and beverages by starch-based sweeteners. And they explain minor sweetener sources, some going back to ancient times, such as boiled-down grape juice; fig and date syrup; the sap of palms, the maple tree, and sweet sorghum; and the exudations from certain trees and shrubs. Like sugar, honey—the first concentrated sweetener known to humans—is ultimately a product of photosynthesis. Bees making honey and humans processing cane or beet to crystal sugar are basically doing the same thing—both extract dilute sugar solutions from plants and convert them into forms easier to handle and storable by evaporating unwanted water.

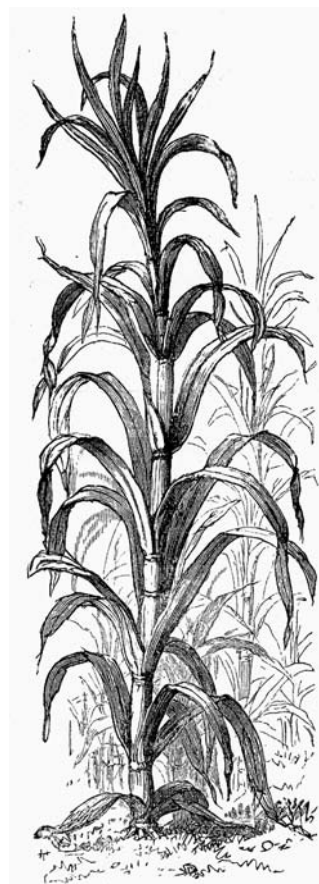


This vintage chart showing sources of sugar and methods of production does not indicate sugarcane plantations of the Caribbean, recognized as profitable even in the early sixteenth century.

All forms of sugarcane are species or hybrids of the genus *Saccharum*, a member of the large family of Gramineae. Their botanical derivation from ancestors in northern India or China is still debated, but cane probably became a cultivated food plant, originally selected for chewing, in eastern Indonesia, New Guinea, or the Philippines from about 4,000 to 3,000 BCE. It eventually spread eastward across the Pacific and northwestward to India—where crystalline sugar has been made since at least the fifth century BCE—and thence by way of Persia and the Mediterranean basin to the Atlantic seaboard, finally reaching the New World in 1493, with the second voyage of Columbus. The expansion of the industry in the Western Hemisphere had two effects. First, it increased the supply of sugar in Europe, making it less of a costly rarity. Even so, British per capita sugar consumption in the early 1700s is estimated to have averaged just four pounds a year, or about a teaspoonful a day. Second, it linked sugar production with slavery and plantation agriculture on a scale far greater than anything previously seen in the Old World, with lasting political, economic, social, and cultural consequences.

Sugar beet, on the other hand, a type of *Beta vulgaris* L. (red garden beet, Swiss chard, and fodder beets are of the same species), is a child of science. The plant is known to have been used as a vegetable and medicinally in Greek and Roman times. But it was not until 1747 that a German professor, Andreas Sigismund Marggraf (1709–1782), reported having extracted from red and white beets a substance identical with cane sugar. Toward the end of the 1700s, another scientist, Franz Carl Achard (1753–1821), began to grow white beets for sugar, opening the world's first beet sugar factory in Silesia in 1802. Expanding under the umbrella of state protection, beet sugar production became an important driver of the agricultural and industrial development of nineteenth-century Europe.

Whether starting from cane and beet, a sugar factory in essence performs a series of solid–liquid separations: (1) extraction of the juice, with fiber or pulp the residue; (2) purification of the juice, removing



The sugarcane plant, a perennial giant grass, grows in the tropics and subtropics.

nonsucrose substances; (3) concentration of the purified juice to syrup; (4) crystallization of the sucrose in the syrup by further evaporation; (5) separation of the crystals from the syrup. While some high-quality raw cane sugar is sold for consumption, most undergoes additional refining—on-site or in a separate plant—by washing and redissolving the crystals and further clarifying and decolorizing the resulting solution. The clear syrup is then again boiled until crystals form or is made into liquid sugar. White sugar can also be produced directly after a more thorough purification of the juice, as is now done in some cane sugar factories and throughout the beet sugar industry.

A Staple Commodity

No fewer than 115 countries produced sugar in 2004, but just five areas—Brazil, India, the European Union, China, and the United States—accounted for around 55 percent of global output. World consumption of

Everything is a miracle. It is a miracle that one does not dissolve in one's bath like a lump of sugar. • **Pablo Picasso (1881–1973)**

sugar from industrial-scale processors amounted to some 130 million metric tons, white quality, equivalent to about 21 kilograms per person. Roughly three-quarters came from sugarcane and the rest from sugar beet. In addition, on the order of 12 million metric tons of indigenous types of cane and palm sugar were produced by small rural enterprises, mainly in Asia and Latin America. Average annual per capita sugar consumption by country ranged from less than 10 kilograms to more than 60 kilograms, depending on economic factors as well as national habits and tastes. At higher living standards sugar is mainly consumed as an ingredient of processed foods and drinks, where it now competes against high-fructose syrups, made chiefly from corn, particularly in the United States. In early 2010 (according to reports in *Bloomberg*, *Businessweek*, and *Financial Express*), the production of sugar was slated to fall short of demand by 14 million tons for the year (about enough to make 346 billion cans of Coca-Cola), and the price of refined sugar on the futures market soared to reach a twenty-year high at 30 cents a pound. Supply interruptions due to too much rain in Brazil (the world's largest producer) and not enough rain in India (the world's second-largest producer and first largest consumer in 2010) were the culprit.

Like starchy foods, sugar is a source of dietary energy, providing nearly 4 kilocalories (about 16 kilojoules) per gram. As such it is often denounced as “empty calories.” In one sense the charge is true—even raw sugar supplies practically no minerals, vitamins, fiber, or protein and excessive consumption contributes to obesity. In a more important sense, however, the charge misses the point. Whereas potatoes or rice can be eaten alone by the plateful, it is hard to swallow even a teaspoonful of sugar without dissolving it in a liquid. Sugar is first of all a sweetener, although in that role it can be replaced by high-intensity sweeteners. But it also fulfills other functions, acting as a binder,

stabilizer, and bulking agent. It caramelizes on heating to form complex coloring and flavoring substances, and part of it is inverted during food preparation, the resultant monosaccharides reacting with other recipe components to lend aroma and browning to the final article. This increases the color, luster, and flavor of bread crust, for example. Well known, too, is sugar's antimicrobial effect in fruit preserves, jellies, and jams, where a high concentration of dissolved sugar inhibits the growth of spoilage microorganisms.

Ultimately, what has made sugar a staple food is that it enhances the beverages and foods in which it is ingested.

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See also Slave Trades

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Sui Wendi

(541–604 CE)

FOUNDER OF CHINA'S SUI DYNASTY (581–618)

Wendi (family name Yang Jian) founded the Sui dynasty in 581 CE. His greatest achievement as emperor was the reunification of north and south China. An able administrator, he built a new capital city, reduced taxes, and created granaries to guard against famine. A devout Buddhist, he expanded the number of monasteries and monks throughout the country.

Emperor Sui Wendi oversaw the reunification of China for the first time since the fall of the Han dynasty in 220 CE. During the brief Sui era (581–618 CE) and the Tang dynasty (618–907 CE) that followed, China emerged as the cultural and political model for much of East Asia. A cautious but effective administrator, Sui Wendi initiated a number of governing reforms that were the precursors of both the civil-service examinations and state bureaucracy that were utilized by subsequent dynasties until the early twentieth century. Under the reign of Sui Wendi, Buddhism, a religion imported from South Asia, flourished in China and came to play an important role in the shaping of Chinese culture alongside the native philosophies of Confucianism and Daoism. In an effort to cement the union of northern and southern China and to improve internal transportation and communications within the empire, Sui Wendi initiated the building of a series of canals and waterways commonly referred to as the Grand Canal, a project that linked his kingdom's two major rivers, the Huang (Yellow) and the Yangzi (Chang). The stability and prosperity that were ushered in during Sui Wendi's reign were disrupted when his son, Sui Yangdi (569–617), succeeded the throne in 605, but the cultural, economic, and institutional foundations upon which

the Tang dynasty would later build were laid by the first emperor of the Sui.

Sui Wendi was the reign title of Yang Jian, who was born into an aristocratic family from the region west of the ancient capital of Chang'an in northwest China. Yang Jian's family had for six generations not only served as officials to the region's Turko-Mongol rulers, but also intermarried with the local non-Chinese elites. As a youth, Yang Jian received his education first at a Buddhist temple and later at an imperial academy in the Western Wei capital, where he was taught the basic tenets of Confucian philosophy. Through the influence of his father, Yang Jian received his first minor official post at the age of thirteen. He was quickly promoted over the next few years, and when his father died in 568, Yang Jian inherited his title, becoming the Duke of Sui and an important figure in the Northern Zhou court.

In addition to performing well in his administrative positions, Yang Jian was also a gifted military commander who proved himself during the wars between the competing Chinese states of the sixth century. In return for his loyalty and service in the campaign against the Northern Qi kingdom, he was given the title of "Pillar of the State" by Emperor Wu, the Northern Zhou emperor, and appointed military commander and administrative governor first over the Great Plain in northern China, and then over the newly conquered southern regions. When Emperor Wu died in 578, he was succeeded by the Crown Prince Yuwen Bin, who was also Yang Jian's son-in-law. The new ruler quickly proved to be an unstable tyrant who dismissed many of the kingdom's most able officials. Fortunately, Yang Jian, as the emperor's father-in-law, was spared during these purges, but

A gem is not polished without rubbing, nor a man perfected without trials. • Chinese Proverb



Emperor Sui Wendi, a detail from the painting *Portraits of the Emperors*, by the seventh-century artist Yen li-pen.

when Yuwen Bin abdicated after only eight months in power and transferred the throne to his six-year-old son, Yang Jian's position became less tenable. The situation at the court deteriorated in the spring of 580, when the retired emperor threatened his wife and father-in-law with death. At that point, Yang Jian organized a coup against the ruling house.

In the late summer of 580, the Zhou forces were defeated. This military victory was followed by a massive purge of the royal family, during which almost sixty persons were murdered at the court, including the young emperor, Yang Jian's grandson. The Sui dynasty was founded in 581 in northern China, although all of the southern regions were not pacified until 589.

Once in power, Yang Jian, now the emperor Sui Wendi, began to consolidate his power and to

persuade his subjects that he had not usurped the throne. Claiming that he was restoring the glory and stability of the Han dynasty, Sui Wendi had court scholars write works praising his leadership, as well as edicts that improved his genealogy by conferring honors and titles on his father, grandfather, and even great-grandfather. Sui Wendi also secured the support of religious leaders by granting land and making donations to both Daoist and Buddhist temples and monasteries. Nor was Confucianism ignored during Sui Wendi's reign; the emperor fostered the development of imperial Confucianism by supporting a state-sponsored school in the capital.

One of the most pressing challenges that Sui Wendi faced was recruiting officials to govern his growing empire. During his reign, Sui Wendi introduced a system of official selection that involved a personal interview and examination by high officials for a limited number of candidates who demonstrated promise but who were not from aristocratic families. Not only did Sui Wendi believe that talent and merit should be rewarded, but he was also aware of the dangers of corruption within his bureaucracy. To limit this problem, he introduced the rule of avoidance, which dictated that an official could not serve in his place of origin, as there was a danger that an official could favor his family or friends if posted to his home town. To prevent officials from forming new friendships and bonds of obligation, all officials were rotated to new postings every three years. These administrative reforms formed the basis of the Chinese bureaucracy for the next fourteen hundred years.

With support from many sectors of the population Sui Wendi was able to solidify his position and to subdue the last independent Chinese kingdoms, Liang (587) and Chen (589). In addition to waging military campaigns, supporting the development of Buddhism, and reforming the bureaucracy, Sui Wendi also undertook a massive construction project aimed at solidifying his union of northern and southern China. In order to transport the economic and agricultural wealth of the south northward to his capital, and to facilitate the movement of troops and communications, Sui Wendi initiated the construction of a series of canals to link his capital to the Huang River

and to link this northern river to the Chang in the center of his kingdom. Begun in 584 and completed during the reign of his son in 605, the Grand Canal was a massive engineering project that symbolized China's new confidence and prosperity.

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See also China

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Sui Yangdi

(569–617 CE)

SECOND EMPEROR OF CHINA'S SUI DYNASTY

The reign of Sui Yangdi was marked by the building of canals, the construction of grand palaces, and extravagant entertaining. The expense associated with these achievements, along with huge loss of life and burdensome taxation due to wars against the Korean state of Koguryo, resulted in widespread rebellion, Yangdi's ultimate death, and the downfall of the Sui dynasty.

Sui Yangdi was the reign name of Yang Guang, the second son of Yang Jian (Sui Wendi), the Sui dynasty's founder. Sui Yangdi has generally been portrayed by Confucian historians as an immoral ruler and despot. Ruling from 605 to 618, Sui Yangdi not only continued the construction of the Grand Canal, a project begun by his father, but also initiated several other major projects of his own, including work on the Great Wall, and the rebuilding of the cities of Luoyang on the Huang (Yellow) River to serve as an eastern capital and Yangzhou on the Yangzi (Chang) River to serve as a southern capital. Sui Yangdi also moved to extend Chinese control over neighboring territories by sending armies to the west against the nomadic peoples of Central Asia, to the south against the Vietnamese, and to the east in an attempt to conquer the Korean kingdom of Koguryo. These wars, coupled with the taxes and forced labor that were required for the massive public-works projects, resulted in widespread hardship and resentment, and eventually led to the collapse of the dynasty.

Yang Guang's career began early, when at the age of thirteen he received from his father the titles Prince of Jin and Governor of Bingzhou, a strategically important post on the northern frontier. The

emperor also arranged for his son to be married to a princess from the former Liang kingdom in southern China. At the age of twenty, Yang Guang was charged with leading an expedition against the state of Chen, the last independent state in southern China. The campaign was a success and marked the culmination of the Sui reunification of China. Yang Guang was rewarded for his role in the pacification of the south with his appointment to the position of viceroy stationed at the capital of Yangzhou. Aside from periodic trips to report to his father and mother at the imperial capital of Chang'an, Yang Guang remained in Yangzhou for much of the next decade, where he supervised the integration of the southern population and economy into the newly unified empire.

Although his family's roots lay in the northwest region of China, Yang Guang, perhaps due to the influence of his wife, became increasingly fond of the culture of southern China. While serving as viceroy in Yangzhou, Yang Guang worked to cultivate the loyalty of the empire's new southern population. Using his increasing fluency in the regional Wu dialect as well as the personal relationships made possible by his marriage, Yang Guang emerged as a champion of his subjects and secured their support for the new dynasty. In an effort to diffuse anti-Sui sentiments among the former Chen aristocracy, Yang Guang appealed to their religious convictions and issued orders for court-appointed scholars to recopy Buddhist scriptures and texts that had been destroyed during the civil war. He also supported the repair and construction of Buddhist temples and monasteries throughout the area under his command, in addition

Each generation will reap what the former generation has sown. • Chinese Proverb



Emperor Sui Yangdi, a detail from the painting *Portraits of the Emperors*, by the seventh-century artist Yen li-pen.

to hosting banquets for local monks and abbots. Yang Guang not only patronized the dominant religion of southern China, he also supported the building of two Daoist monasteries in the southern capital and the appointment of Confucian scholars who had formerly served the Chen kingdom to positions within his administration.

During a visit to his mother at the imperial capital in 600, Yang Guang became convinced that his elder brother, the crown prince, was unsuitable to succeed to the throne. Yang Guang began to gather allies from among the military commanders and aristocracy and

to plot against his brother. Later that year he presented his father with enough real and manufactured evidence that the emperor issued an edict deposing the crown prince. Yang Guang was shortly afterwards proclaimed crown prince and left southern China to assume his new position at Chang'an. Following his mother's death in 602, Yang Guang was charged with much of the day-to-day administration of the empire. When his father died in the summer of 604, Yang Guang assumed the throne under the reign name Sui Yangdi.

In an effort to placate the powerful gentry and aristocratic families of northern and central China, and to have his administration closer to the eastern and southern reaches of the empire, Sui Yangdi moved the capital 300 kilometers east to the city of Luoyang. Between 612 and 614, in an attempt to restore the former borders of the Han period, Sui Yangdi also initiated three failed attempts to conquer the Koguryo kingdom in northern Korea. These expeditions were unsuccessful, as were similar attempts to pacify the Turks in the northwest in 615 and 617. Despite these military failures, Sui Yangdi did establish military colonies along his borders and some political control over the lesser tribes of the northern steppes.

The military defeats, coupled with the hardship brought about by the construction of the Grand Canal, the capital city of Luoyang, and the repairs to the Great Wall, led to rebellion throughout the empire. By 617 rival claims to the throne were appearing throughout China as civil war broke out. In 618 Sui Yangdi was assassinated and the dynasty that his father had founded collapsed. China remained divided into many petty states and kingdoms until the new rulers of the Tang dynasty reunified China five years later.

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See also China; Sui Wendi

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Süleyman

(1494–1566)
OTTOMAN SULTAN

In Europe, which trembled at the appearance of his armies more than once, the Ottoman sultan Süleyman I was known as “the Magnificent.” Throughout the Islamic world, he was better known as Kanuni, “the Lawgiver,” and was believed to embody the highest principles of justice and harmony in a ruler. For his force of will and his many accomplishments, Süleyman deserves consideration as one of the great leaders of history.

As sultan of the Ottoman Empire, Süleyman I pursued a policy of militant Islam and imperialism. Süleyman’s deep faith in God and upbringing in the warrior traditions of the Ottoman Turks required that he should someday lead armies in battle, defeat infidels in the *dar al-harb* (“abode of war”), and give law and provide order for the faithful in the *dar al-Islam* (“abode of Islam”). Süleyman’s father, Selim the Grim (1470–1520), had extended the Ottoman Empire past the frontiers of Kurdish and Turkmen potentates into what is now northern Iraq and had conquered Egypt, Syria, and the Arabian Peninsula, bringing the holy cities of Mecca and Medina under Ottoman control.

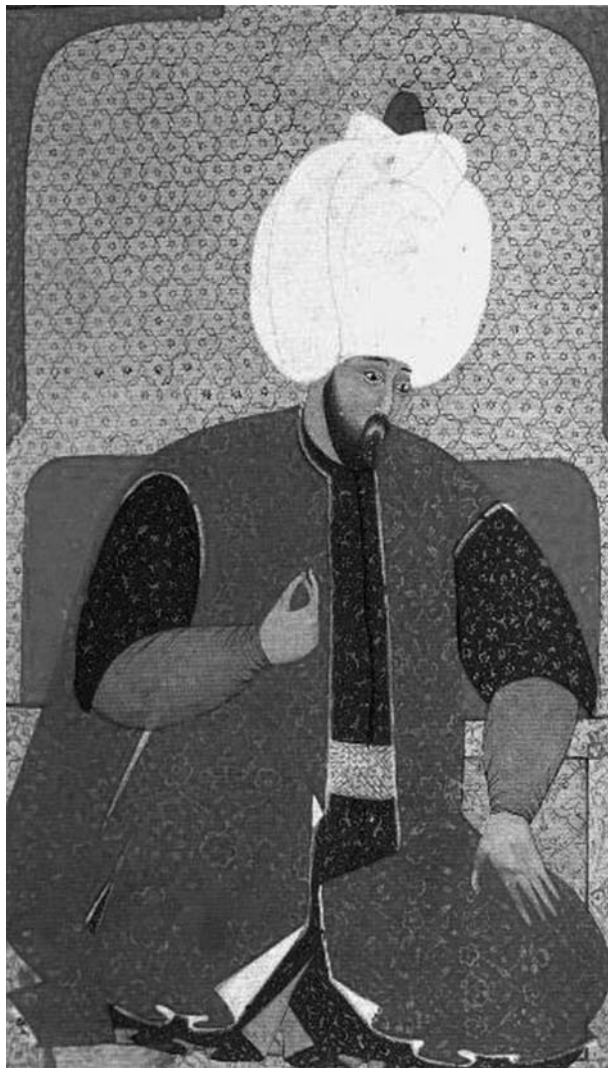
The Ottoman Empire was not a hereditary monarchy, nor was it elective. Nevertheless, by killing his brothers and their descendants, Selim had cleared the way for the ascension of Süleyman by the time Selim died of cancer in 1520.

The young sultan appears to have been confident, proud, and forceful. According to the ambassador from Venice, Süleyman rewarded his supporters by showering them with gifts and punished those who had not shown loyalty during his ascension. He

gave clemency to those who allegedly had committed crimes against his father, and most important, he rewarded his bodyguard—the janissaries—with liberal cash disbursements. The janissaries were slave soldiers who were supplied by a levy upon the children of Christians. These soldiers trained with the composite bow and firearms and provided Süleyman with a powerful army. The young sultan had cultural interests as well: he wrote highly esteemed poetry, and he commissioned the architect Sinan to beautify the Ottoman capital of Istanbul.

War in the name of religion was at the heart of Süleyman’s view of the world and his understanding of what it meant to be leader of the Ottoman state and its people. Holy war would not only content the janissaries, but also win the favor of God. Süleyman’s subjects shared in the belief that God would approve of such warfare and reward the devout with prosperity. Early in his reign, Süleyman demonstrated his abilities as leader of the faithful in the constant small-scale raids and reprisals that raged back and forth on the border between the Ottoman Empire and the Christian kingdom of Hungary. On 16 February 1521, Süleyman marched out of Constantinople at the head of an army that numbered more than 100,000 men. Forty Turkish vessels sailed up the Danube River in support, and ten thousand wagons brought powder and shot. Süleyman’s army eventually captured the Serbian capital of Belgrade. When the defenders of this town surrendered, they were massacred. It is not known whether Süleyman approved of this atrocity or not. On 18 August 1521, the cathedral of Belgrade was consecrated as a mosque. Even as the great victory was celebrated at home, Süleyman planned yet further conquests.

What men call empire is world-wide strife and ceaseless war. In all the world the only joy lies in a hermit's rest. • **Süleyman (1494–1566)**



Nakkaş Osman, *Süleyman the Magnificent as a Young Man* (1579). Miniature portrait. Topkapı Palace Museum, Istanbul, Turkey.

More often than not, over the next forty-five years, the sultan could be found at the head of his armies. In 1522, after five months of siege, Süleyman subdued Rhodes, the Christian base of piracy in the Mediterranean. Four years later, Süleyman led a major invasion of the kingdom of Hungary, on 29 August fighting the decisive battle of Mohács in which the Hungarian king Louis II (1516–1526) was slain and his countrymen utterly defeated. Between 1528 and 1529, Süleyman led his victorious armies into the

heart of central Europe and lay siege to the Habsburg capital of Vienna. This marked the furthest extent of Süleyman's advance into Christendom. Far from their depots of supplies and confronted by unexpectedly stiff resistance, Süleyman's forces withdrew to Istanbul, but Süleyman was undeterred in his dream to become "Lord of the Age."

The Ottoman Empire's other great rival in the world was the Safavid Empire of Persia. The Safavids had adopted Shiite Islam as their state religion, their messianic mission clashed with the Sunni Islam of the Ottoman Empire. Süleyman invaded Safavid territory and in 1534 captured Baghdad and most of Iraq. Southern Yemen fell in 1539, and in 1546 the sultan's armies captured Basra, in southern Iraq. The Shiite tribes in the south of Iraq stubbornly resisted the Ottomans, however, and the region was never completely subdued. Meanwhile, renewed war with the Habsburgs continued to preoccupy Süleyman to the end of his reign. In 1565 Süleyman unleashed his forces on the Christian stronghold of Malta; the ensuing siege failed disastrously at the cost of between twenty thousand and thirty thousand men. The next year, Süleyman died leading an Ottoman army in yet another campaign against the Habsburgs in Hungary.

The most famous and lasting achievement of Süleyman's reign, the creation of a single legal code for the entire Ottoman Empire that reconciled Islamic law with the law of the sultans, was not actually the work of Süleyman himself, but was the accomplishment of a legal expert named Ebu's-Su'ud Efendi. In the decades that followed the fall of Constantinople in 1454 and throughout the early sixteenth century, Islamic legal experts had slowly codified the laws of the sultans. By the time of Süleyman, this work was nearly completed, and sultan laws had been mostly regularized and replaced the many local laws and customs of the empire. The great problem was how to reconcile Islamic law with the legal code of the sultan. As a high-ranking judge, Ebu's-Su'ud used his authority to issue a *fetva* (fatwa)—"a proclamation issued by a qualified religious authority in response to questions of law and usage" (Goffman 2002, 76)—to

bring the two codes of law into harmony. Ebu's-Su'ud also added the title of caliph, meaning leader of the entire Islamic community, to the many titles of Süleyman, making the sultan the ultimate religious authority for all Muslims.

In Islamic tradition, Süleyman the Lawgiver will always be remembered as the “second Solomon,” a monarch who embodied a perfect concept of justice in accord with the Qur'an. His reign marked a period of justice and harmony for those of the Islamic faith.

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See also Ottoman Empire

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Sumerian Civilization

In about 3500 BCE, inland and seafaring networks converged in Sumer (today's southern Iraq); the exchange of goods, information, and ideas gave rise to Earth's first civilization. Sumerians invented writing in a script we call cuneiform, but other innovations were incalculably significant, such as a simplified concept of gods inhabiting statues sculpted in human form, and fulltime soldiers equipped and trained for battle.

The Earth's first civilization arose in the land of Sumer beginning about 3500 BCE. Sumer was located in the southern part of modern Iraq where the Tigris and Euphrates rivers converge and flow through desert landscapes to the Persian Gulf. Irrigation was necessary to make the desert fertile; but that was comparatively easy since both rivers accumulated silt in their beds when crossing the flat desert between higher banks of silt deposited in flood time. Consequently, during most of the year, the water levels of both rivers stayed above the plain, and by digging through the raised bank water would flow through irrigation canals and smaller ditches onto adjacent fields. When enough water reached the fields, wheat and barley grew luxuriantly in the fertile soil, allowing dense human populations to flourish as long as they maintained the irrigation channels by the cooperative effort of thousands of persons.

Connecting Seafaring and Inland Networks

Dependable and abundant harvests were essential for the support of the city dwellers who planned and supervised irrigation and the distribution of water to

the fields. But the rise of Sumerian cities and civilization depended also on far-reaching exchanges of goods and information with peoples round about. Geography made Sumer a meeting place, where seafarers sailing along the coasts of the Indian Ocean and around Arabia into the Red Sea met overland donkey caravans and boats descending the Tigris and Euphrates rivers. Shipping along Indian Ocean coastlands preceded the rise of Sumer by thousands of year, and Sumerian tradition affirmed that they arrived in the land of Sumer by sea from somewhere in the south, and then organized irrigation agriculture among "the black headed people" already living there. But when their distinctive civilization began to emerge, donkey caravans were still comparatively new, since donkeys were domesticated only about 1,500 years before Sumerian cities began to thrive. It took time to breed enough donkeys to carry goods across hundreds of miles and an even longer time to convince local inhabitants that it was profitable for them to permit caravans to travel cross-country without being robbed.

But when this was achieved by about 3500 BCE a new web of communication came on stream, connecting peoples along the shores of the Indian Ocean and Red Sea with inhabitants of west Asia as far west as the Mediterranean coast, north to the steppes and east into modern Afghanistan. Precious goods, as well as new ideas and skills, started to circulate throughout the whole region faster than ever before; and Sumer was the place where everything new and valued converged. No wonder then that this was where the world's first civilization took form across the next five hundred years. Nowhere else did such a seafaring network interact with a comparable inland network.

Like spiders at the center of a web, Sumerians were able to pick and choose whatever interested them; they began to invent new things, and some of their ideas and skills soon spread far and wide, influencing Egyptians, inhabitants of the Indus River valley and of the Eurasian steppe. A civilizing process thus set in, and all of humankind is now its heir.

Eventually the Sumerian style of irrigation, which allowed river water to evaporate in the fields year after year, made the soil so salty that grain could not grow and the land became a desert once more. (Egypt escaped such salting, for there the Nile flood brought a load of fresh silt to the fields each year; the water then drained away, carrying all the dissolved salt back to the Nile.) But until about 2350 BCE when Sargon of Akkad conquered the cities of Sumer and the Akkadian language began to supplant Sumerian as the common speech of southern Iraq, Sumerian priests, rulers, traders, soldiers, and farmers combined to create Sumerian civilization, and in due course transmitted that heritage to their successors in the land between the two rivers.

Cuneiform Script and Archaeological Finds

We know quite a lot about ancient Sumer because the Sumerians invented a durable form of writing, using a pointed reed to make marks on soft clay and then baking the resulting inscriptions. We call the script cuneiform. Akkadians wrote their language in the same way, and as familiarity with Sumerian speech

decayed they made long lists of Sumerian words paired with their Akkadian equivalents. In the nineteenth century archaeologists dug up thousands of these clay tablets and soon learned to read Akkadian because it was a Semitic language resembling Hebrew and Arabic; then they used the word lists to learn how to read Sumerian, just as Akkadian schoolboys

had done before them. Years of effort went into deciphering the Sumerian language, which has no known relatives. But by now experts can read Sumerian inscriptions with few uncertainties, and since thousands upon thousands of Sumerian texts have now been read we know a good deal about their society.

Other archaeological remains also tell their own story. Large mounds of mud bricks locate each of the dozen or so Sumerian cities, sheltering something like 10,000 to 30,000 persons, that arose along the banks of the two rivers between 3500 and 3000 BCE. But cuneiform inscriptions let us know how specialized priests played the key role in managing and elaborating everyday life in those cities, and it seems clear that priests from all the Sumerian cities exchanged ideas from the beginning. Their first great achievement was to simplify the spirit world, crowded by innumerable spirits inhabiting everything that



The inlaid pictures carved on the sound box of a harp (from Ur, circa 2600 BCE), depict a menagerie of creatures—including a dog with a dagger tucked in his belt. The University Museum, Philadelphia, Pennsylvania.

moved, by deciding that seven great gods—earth, sun, moon, sky, storm, fresh water, and salt water—exerted overarching authority over everything and everyone, for each human body had a spirit of its own that wandered off in sleep (as dreams showed), and departed permanently at death. These seven gods, the priests decided, met on the first day of each year to determine what the next year would bring. And since melting snow in the mountains often raised the two rivers high enough to overflow their banks, erase irrigation channels and even, in extreme cases, change their path to the sea, Sumerians had much to worry about. Obviously they needed priestly experts to serve and please the high gods and persuade them, on each new year's day, to preserve their civilization from disaster.

The way the priests set out to please the gods was to construct a home for one or more god in each city. They swiftly became monumental temples reaching toward the sky. In a magnificent room at the top they placed a statue in human form for each god to inhabit, and the priests made it their business to provide them with the most magnificent food, clothes, and amusement they could contrive, hoping that this would make the god eager and willing to reside permanently in the statue and protect the city. As the gods' special servants,

priests communicated daily with the resident god by prayer, and figured out his or her intentions by interpreting marks on the liver of sacrificed animals as well as by exact measurement of the movements of the sun, moon, and planets.

In fact, of course, disasters continued to occur, which only stimulated greater efforts to please the gods with rarer and more precious objects, grander temples and more elaborate worship. The process was unending, compelling the priests to expand the scale of irrigation agriculture to support the elaboration of temple rituals. They also managed flocks of sheep on grasslands and employed large numbers of persons to spin and weave fine woolen cloth to clothe the god and themselves. Temples also exported surplus cloth far and wide, exchanging it for timber, incense, metals, lapis lazuli and other valued objects lacking in the flood plain. Private families owned some of the irrigated land in Sumerian cities, but the temple estates were far larger than private holdings, and by endlessly seeking new rarities to please the gods, priests kept on expanding the range and scale of export and import.



This sculpted goat, made from gold, silver, lapis lazuli, copper, shell, red limestone, and bitumen, is one of the most famous objects excavated from the royal cemetery in the ancient Sumerian city of Ur.

The figure is frequently referred to as the "Ram Caught in a Thicket" because it conjures an image of the ram that Abraham found (see Genesis 22:13) to sacrifice to God in lieu of his son. The University Museum, Philadelphia, Pennsylvania.



It is probable that the priests modeled their ideas about the behavior of the seven great gods on the way Sumerian landowners in early times met to garner public support for a call to action, whether mounting a military expedition to cut timber, building a new canal, or erecting a wall to defend their city against rivals close at hand and/or raiders from afar. For as Sumerian wealth and population grew, cities began to quarrel over access to the life-giving water needed for irrigation, while pastoral raiders were tempted to seize grain and other goods by force instead relying on peaceable trade.

Military Might

By about 3000 BCE, the rising importance of defense against human enemies provoked the construction of massive city walls, and military commanders, initially appointed for a single campaign, gradually made their authority permanent. Eventually they commanded armies of professional soldiers, equipped with bronze weapons and armor, trained to keep in step and present a formidable shield wall to the enemy. Not surprisingly, military leaders sometimes clashed with priests over how to manage the cities. An uneasy alliance between priests and military men became normal. Over time military power predominated; but collaboration and occasional clashes of warriors with religious experts and devotees have continued to affect subsequent civilizations all the way down to our own time.

The enhanced role of military leadership in Sumer coincided with the rise of tribal and pastoral society on the grasslands of western Asia. Sheep and goats predominated on semi-arid fringes of the Tigris-Euphrates Valley, but on the vast northern steppe, cattle and horses began to sustain a far more formidable military society. In the foothills independent agricultural villages soon found themselves caught between civilized armies and mounted steppe raiders, but to begin with the accomplishments of Sumer towered so high that Indo-European-speaking pastoralists on the steppes borrowed elements of Sumerian religion. As a result, Aryan, Greek, Roman, Celtic, and Germanic

gods of later times clearly resembled their Sumerian prototypes.

Beginning with Sargon of Akkad (c. 2350 BCE), military power tended to move north within the Tigris-Euphrates Valley as Semitic-speaking peoples mastered the arts of irrigation and other civilized capabilities. A long succession of territorial empires overran the once independent Sumerian cities until by slow degrees salt accumulated in the soil and their fields were abandoned. Thus the birthplace of civilization became a desert once again, yet the civilizing process initiated by the cities of Sumer continued to extend its range and power.

Significant Contributions

A brief list of Sumerian accomplishments will show how significant their contribution to subsequent human history turned out to be. Writing was Sumer's greatest invention. It transformed record keeping and allowed accumulation of knowledge and coordination of effort beyond what unaided human memory permitted. In addition, copper and bronze tools and weapons, wheel-spun pottery, and cunningly incised cylinder seals used to imprint marks of ownership on jars for shipping and storage first appear, and may have originated, in Sumer.

Canals, dikes, plows, wheeled vehicles, and sailing ships also show up in Sumerian records for the first time, but some or all of them may have been invented elsewhere. Nevertheless, Sumerians spread these fundamental improvements far and wide. When new, Sumerian temples were by far the largest and most impressive buildings in the world, and the Egyptian pyramids, that eventually exceeded them in size, began with smaller structures modeled on the Sumerian example.

Finally, the Sumerian invention of a family of gods inhabiting statues sculpted in human form, each in charge of an aspect of nature and accessible to priestly experts through ritual and prayer, was an immensely persuasive notion that spread very widely and dominated the religions of Europe and west Asia until Judaism, Christianity, and Islam eventually

superceded it. Moreover, full-time soldiers, systematically equipped and trained for battle were another Sumerian invention of incalculable importance in later times. Our world, in short, would not be as it is without the pioneering achievements of ancient Sumer.

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See also Decipherment of Ancient Scripts; Writing Systems and Materials

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Sun Yat-sen was a revolutionary leader and founder of Republican China (1912–1949). An uprising in 1911 resulted in his election as provisional president of the new republic and the abdication of the Qing dynasty emperor in 1912. Sun devised what he called the “Three People’s Principles” for the new republic: nationalism, democracy, and livelihood. Those principles are today the guiding ideology of the Republic of China on Taiwan.

Sun Yat-sen was the most prominent figure in the movement that overthrew the Manchu Qing dynasty (1644–1911/12) and established the Republic of China; he was also the founding leader of the Chinese Nationalist Party (Guomindang). Sun was born in Xiangshan County in Guangdong Province. After beginning his education in China, Sun was sent in 1879 to live with his elder brother in Hawaii, where he learned English while attending the missionary-operated Iolani School. After returning to China, Sun pursued European medical training in Guangzhou (Canton) and in Hong Kong, but quickly put aside his career as a doctor to focus on politics. Qing China had been subject to humiliating unequal treaties since the two Opium Wars (1839–1842 and 1856–1860) and now appeared increasingly vulnerable in an age of aggressive Western imperialism. In 1894 Sun traveled to Tianjin and petitioned the powerful official Li Hongzhang to undertake rapid reforms to modernize China. Li did not respond. Defeat in the Sino-Japanese war followed soon after.

Having failed to promote reform from within, Sun began to work for the overthrow of the Qing dynasty. He returned to Hawaii, and created the Revive China

Society to promote revolution. Most of his support came from fellow Guangdong natives, some of whom were members of secret societies that had long embraced an anti-Manchu ideology. In 1894 Sun’s first attempt at organizing a revolt in Guangzhou was foiled by Qing authorities. Sun fled to Hong Kong to avoid arrest. Forced to leave by British authorities, Sun proceeded to Japan, Hawaii, and the west coast of the United States trying to raise funds and gather support. While visiting London in 1896 Sun became the subject of a bizarre international incident in which he was held prisoner in the Chinese legation. Sun was able to get word of his captivity to friends, who brought his predicament to the attention of the press. When Sun was released he became an instant celebrity.

Over the next fifteen years Sun tirelessly promoted the revolutionary cause. Unable to return home, he traveled among overseas Chinese communities in Southeast Asia, Japan, and North America to raise funds and support. After 1900 he was introduced to young Chinese intellectuals in Japan sympathetic to the revolutionary cause, extending his connections beyond his original Guangdong base. In 1905 Sun published a newspaper editorial declaring that China needed nationalism, democracy, and government promotion of peoples’ livelihood. Repackaged as the Three People’s Principles, these became the centerpiece of Sun’s revolutionary ideology; he repeatedly redefined these terms over the next two decades. In 1905 Sun became the director of the Chinese Revolutionary Alliance, which brought together a diverse group of supporters of revolution.

Initially, the expatriate revolutionaries made little progress as the Qing dynasty struggled to remake



Bust of Sun Yat-Sen. Sun became an icon celebrated for his tireless patriotism and his focus on a strong, modern China. Photo by Joan Lebold Cohen.

itself in the early years of the twentieth century. But when governmental reforms stumbled after 1908, the revolutionaries gained a growing following in China. Nevertheless, when the Wuchang army garrison rose up in October 1911 to spark the revolution, it was a surprise. Sun Yat-sen was in the United States, and rather than returning to China directly, he headed to Europe to seek foreign support for the revolutionary cause. Upon his arrival in Shanghai in late December he was greeted as a hero by the revolutionary forces, now in control of major cities in central China. On 1 January 1912 Sun was sworn in as the provisional president of the new Republic of China.

But Sun's triumph was short-lived. The revolutionary forces negotiated an end to the war with Yuan Shikai (1859–1916), a Qing official with a record

as a reformer and strong support from the powerful northern army. Sun resigned the presidency and supported the selection of Yuan as his replacement. The Revolutionary Alliance was remade into a democratic political party, and renamed the Nationalist Party. Led by Song Jiaoren (1882–1913), the new party won victory in assembly elections in 1913. But Yuan refused to become a figurehead: he arranged Song's assassination and in the "second revolution" drove Sun and his supporters out of government and established a dictatorship. Yuan's subsequent effort to establish himself as emperor failed miserably, Beijing's authority collapsed, and power was divided among regional warlords.

Sun Yat-sen tried desperately and unsuccessfully to restore his vision of a unified Chinese republic from

The Revolution has not yet succeeded. Comrades, you must carry on! • Sun Yat-sen (1966–1925)



Portrait of Sun Yat-Sen. Sun called the ideals he advocated for China's new republic the **Three People's Principles: nationalism, democracy, and livelihood.**

1914 to 1920. Frustrated by foreign support for Yuan, he turned to Japan, and offered major concessions in return for Japanese support, without success. After Yuan's death, Sun sought to restore the 1912 constitution, but the warlords would not cooperate.

In the early 1920s Sun began to establish a political base in Guangzhou and to reconstitute the Nationalist Party. In 1922 he sought out the aid of Comintern, the association of national Communist parties founded by Vladimir Lenin (1870–1924), in reorganizing the Nationalist Party on a disciplined Leninist model. Sun, while admiring the successes of Lenin, never embraced Marxism. Sun's own Three People's Principles—now taking on an increasingly socialist and anti-imperialist flavor—formed the ideological orthodoxy of the renewed Nationalist Party.

Meanwhile a United Front was formed with the fledgling Chinese Communist Party, and a talented cadre of young Nationalist and Communist leaders, including Chiang Kai-shek (1887–1975) and Zhou Enlai (1898–1976), came to Canton. Sun, now convinced that his vision could only be fulfilled by a strong army, formed a military academy and began to train an army for the planned northern expedition to destroy the warlords and unite the country.

In January 1925, Sun made one last effort at a peaceful unification, traveling to Beijing at the invitation of northern warlords Duan Qirui (1865–1936) and Zhang Zuolin (1873–1928). Before these talks could produce results, Sun fell ill with cancer, and he died on 12 March.

Sun's death deprived him both of seeing the success of the Northern Expedition and the end of the warlord era and of witnessing the bitter break between Chiang Kai-shek's Nationalists and the Chinese Communist Party. As a result Sun has a unique role in the symbolism of modern China: admired across the political spectrum, he became an icon celebrated for his tireless patriotism and his advocacy of a strong, modern China. Historians' assessments of Sun have varied. While Chinese scholars often treat Sun as a near sacred figure, Western scholars have been less admiring. Critics view Sun as a symbolic rather than as a substantive figure, as a man who advocated change but was rarely in a position to execute it. But Sun's role in linking China with overseas Chinese communities and his advocacy of technocratically oriented models of industrial development seem prophetic of China's place in the globalizing world that has emerged since the end of the Cold War.

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See also China; Revolution—China

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Taiping Rebellion

Spurred and initially led by Hong Xiuquan, the Taiping Rebellion (1851–1864) seriously challenged China's Qing dynasty (1644–1911/12). Millions of lives were lost in the ensuing chaos. As the largest rebellion in Chinese history, it was a catalyst for the first reform movement launched by the Qing in an attempt to modernize the empire, a process the Qing had resisted for some time after its clash with Western powers in the First Opium War (1839–1842).

The Taiping Rebellion occurred in a period of unprecedented crisis, when the Qing dynasty was plagued by an exploding population (nearly tripling in two centuries to exceed 430 million by the 1850s), political and social problems, and challenges from Western powers that it could not meet, as evidenced in its defeat in the First Opium War (1839–1842). With the city Guangzhou (Canton) becoming one of the five ports opened to international trade, as stipulated by the Treaty of Nanjing (1842) at the conclusion of the that war, Western influence became increasingly tangible in the city and its surrounding area, though missionaries, including Protestant missionaries from the United States, had been arriving in China's southern coasts before the Opium War. Meanwhile, the opening of Shanghai as one of the treaty ports undermined Guangzhou's position as the sole hub of international trade in China. As a result, many laborers who had been hired by foreign trade-related businesses in the Guangzhou area lost their jobs, which contributed to worsening social problems that had accumulated in southern China.

The Origins

Hong Xiuquan (1814–1864), born to a peasant family of the Hakka ethnic group in a village close to Guangzhou, was raised to pursue a career as a scholar-official. Having repeatedly failed to pass the civil service examinations in Guangzhou, Hong suffered a breakdown in 1837 and was bed-stricken for weeks, during which he had hallucinations. A few years later he read a set of Christian tracts, *Quanshi Liangyan* (Good Words for Exhorting the Age), which was compiled by a Chinese Christian, Liang Afa (1789–1855), and delivered to Hong's hand after he failed examinations in Guangzhou in 1836 by an American missionary, Edwin Stevens (1802–1837). Hong made connections between Christian theology and his visions and was convinced that he was actually Jesus Christ's younger brother, and that he was sent to Earth to expel demons, namely the Manchus (who ruled China during the Qing dynasty), from China.

Having baptized himself and a few friends and relatives, Hong began his evangelical mission in his home village. In early 1844, along with one of his converts, Feng Yunshan (1822–1852), Hong went to Guangxi Province after having lost his teaching post at the village school due to his Christian convictions. In the poverty-stricken southern Guangxi, Hong and Feng found enthusiastic adherents among poor peasants. Later in 1844, Hong left the evangelic work to Feng and returned home to continue his religious study for a couple of years (during which time he had a short sojourn in Guangzhou to study with an American missionary, Issachar T. Roberts [1802–1871]); Hong



A drawing of the Taiping leader Hong Xiuquan ("The Heavenly King") circulated by Taiping propagandists in the 1850s. From *A Yankee Adventurer: The Story of [F. T.] Ward and the Taiping Rebellion* by Holger Cahill (1930).

then penned several religious tracts to expound his own understanding of Christian faith. When Hong rejoined Feng in Guangxi in the late 1840s, Feng had set up a religious community of thousands in the Zijing Mountain area. With the expansion of their community and the heightening of the tension with the Qing local authorities, Hong and his followers proactively prepared for an armed uprising.

The Early Stage (1851–1856)

In late 1850, Hong called for a rebellion against the Qing dynasty. He proclaimed the establishment of Taiping Tianguo (the Heavenly Kingdom of Great Peace) in January 1851 and declared himself the Heavenly King shortly thereafter. The Taipings, as they become known in English, set up an elaborate military system in which men and women were segregated and forced to submit all their properties to a public treasury. After having stayed in the city of Yong'an in eastern Guangxi for half a year to rigorously undertake state building and militarization, the Taipings began to march north to the Yangzi (Chang) River valley in 1852. The Qing armies, which had not been engaged in serious fight for decades, failed

to stop the advances of the spirited Taipings. In the spring of 1853, the Taipings, then in the hundreds of thousands, took Nanjing, a political and economic center in southeastern China. Hong made Nanjing his capital and renamed it Tianjing (Heavenly Capital).

After taking Nanjing, the Taipings moved quickly to expand their military victories. A northern expedition was dispatched to take Beijing, the capital of the Qing dynasty, and a western expedition was sent to take control of the middle Yangzi River valley and secure the areas surrounding Nanjing. Although the northern expedition failed, the Taipings were successful in expanding their territories in the middle and lower Yangzi River valleys. Administrative apparatuses were set up on the conquered territories, which combined military and civil functions. A utopian land program blueprinting equal distribution of land was promulgated, but never implemented. Many social and cultural reforms—including banning opium smoking, foot binding and prostitution—were carried out. Repudiating Confucianism as the demon's teaching, the Taipings adopted Hong's version of Christianity as their official religion and used it as the basis for their civil-service examinations, in which both men (and very recently women) were encouraged to participate.

The Taipings' claim that they believed in Christianity stirred great excitements among the Western missionaries while the prospect of an extensive civil war worried the Western businessmen in China. Both groups urged their countries' diplomats to take actions and go to the Taiping capital for a close examination of the rebels. In 1853 and 1854, Britain, France, and the United States sent envoys to Nanjing to investigate the new regime. Although the Westerners were deeply disappointed by the Taiping religion, which they thought was a great distortion of Christianity, and by the rebels' lack of commitment to order and construction, the Western powers decided not to act against the Taipings immediately because they had not settled their conflicts with the Qing government. As a result, they adopted temporary neutrality toward the rebellion, but their overtone betrayed their hostility against the Taipings.



"The Taiping War in China: Costumes of Imperial Mandarins and Soldiers."
From the *Illustrated London News*, 1864.

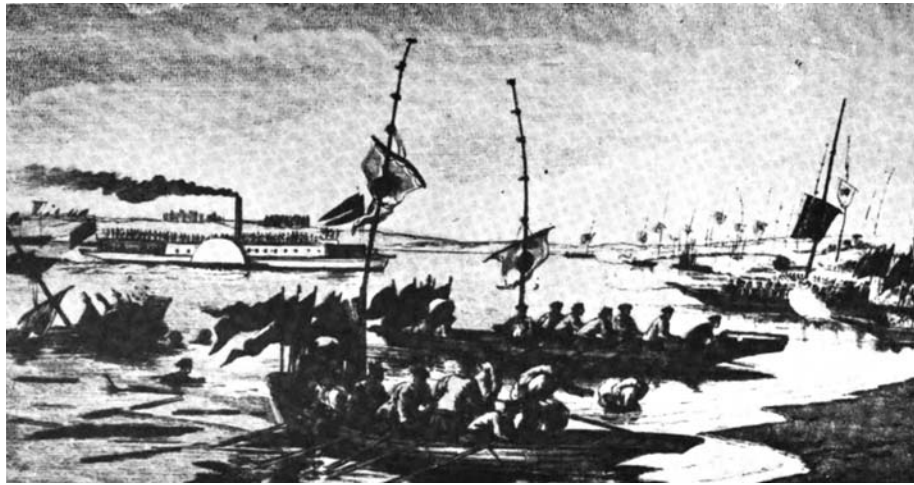
When the Taiping Rebellion reached its peak in 1856, fatal infighting occurred. Threatened by the swelling power of Yang Xiuqing (d. 1856), the de facto prime minister of the Taiping regime, Hong had him killed by another leader, Wei Changhui (1823–1856). Later Hong also had Wei killed when the latter could not stop his indiscriminate slaughtering of Yang's followers. Tens of thousands of Taiping followers were slain in the incident. Feeling that he was no longer trusted, Shi Dakai (1831–1863), a talented and popular general, led his army out of Nanjing and carried on an independent campaign until he was cornered by the Qing forces at the Dadu River in western Sichuan in 1863, where he surrendered (and was subsequently executed).

The Late Stage (1856–1864)

The Taiping Rebellion was greatly weakened by the events of 1856 and by losing much territory to the Qing armies in the wake of the incident. Meanwhile, the Qing dynasty found a powerful force in suppressing the rebellion, the Xiang (Hunan) army led by Zeng Guofan (1811–1872), a high official and famed Confucian scholar. Zeng commanded strong support among the gentry class by upholding Confucian values in countering the Taiping form of Christianity.

Recruited exclusively from Zeng's hometown in Hunan Province and highly paid and well disciplined, the soldiers of the Xiang army pushed the Taipings into a defensive position. Two new leaders and outstanding generals of the Taipings, Li Xiucheng (1823–1864) and Chen Yucheng (1837–1862), orchestrated a series of successful campaigns to break the impasse, advanced to eastern Jiangnan, and approached Shanghai, an important treaty port since the First Opium War. Hong Xiuquan's cousin, Hong Ren'gan (1822–1864), arrived in Nanjing after having stayed in Hong Kong for years, breathing new life into the waning regime by attempting to reform the Taiping political and economic systems by using Western models. Although Hong Ren'gan's reform agenda did not materialize due to the severe military situation in the last phase of the Taiping Rebellion, his ideas were echoed by reformers in the latter part of the nineteenth century. Having finally made his way to Nanjing, Issachar T. Roberts failed to convince Hong Xiuquan, who had by then lost touch with reality and was immersed in his illusionary world, to rectify his religion. Roberts left Nanjing in early 1862.

From 1856 to 1860, the Qing dynasty was engaged in the Second Opium War (also known as the Arrow War) with Britain and France. Disappointed with the Qing noncommittal attitude toward fulfilling the



Battle action near Shanghai between the mercenary forces of the Ever-Victorious Army, led by Frederick Townsend Ward and the Taipings.

treaty obligations after the First Opium War, Britain set higher goals for the second conflict. After the four-year war punctuated with truce and negotiation, Britain and France landed new treaties that gave the powers more rights including stationing their ambassadors in Beijing and more treaty ports including Nanjing and several other cities in the war zone, which made the Taiping regime an indisputable obstacle to the implementation of the treaty benefits. Shortly after the conclusion of the Second Opium War, a coup d'état occurred that placed a new rulership on the stage for the Qing. The new leaders, the Empress Dowager Cixi (1853–1908) and Prince Gong Yixin (1833–1898), effected a radical turn in foreign policy, becoming cooperative with the West, which encouraged the Western powers to side with the Qing dynasty in China's civil war. Having realized that it was best for Britain's long-term interest in China to leave the Qing dynasty as the ruling regime, Sir Frederick Bruce (1814–1867), the British envoy extraordinary and minister plenipotentiary to China, authored a policy of indirect intervention in China's civil war, by which the Western powers should assist the Qing dynasty in its campaign against the rebels, and at the same time entice the Qing dynasty to strengthen and modernize its governmental apparatus and functions.

In late 1861, Li Xiucheng and his men carried out an eastern expedition, taking both Ningbo (it became a treaty port after the First Opium War) and Hangzhou, and prepared to attack Shanghai. The Taiping threat to the eastern coast area, where Western commercial interest was heavy, served as the fuse

to the onset of Western intervention. The first clash between the Western powers and the Taipings took place in early 1862 when Li attacked Shanghai. After that the Western intervention took shape with foreign mercenaries, the so-called Ever-Victorious Army, financed by the Qing government and headed first by Frederick Townsend Ward (1831–1862) of the United States and then by Charles George Gordon (1833–1885) of Britain. Meanwhile, the leaders of the Xiang army also actively acquired Western weaponry and hired Western military advisors. After 1862, the Taipings retreated city by city under the joint attack of the Xiang army and the Ever-Victorious Army. In June 1864, Hong Xiuquan died of illness. One month later, the Xiang army captured Nanjing, which ended the Taiping Rebellion, even though the remaining Taiping forces continued to fight until 1868.

About 20 million lives were lost in the extensive warfare associated with the Taiping Rebellion and other rebellions of the period. Economic devastations in the lower Yangzi River valley were extensive. While Taiping Christianity failed to leave any lasting impact on Chinese society, the Qing dynasty tried to bring about a restoration of Confucian tradition in the wake of the upheaval. Meanwhile, reform-minded high officials including three major generals rising to power in the campaign against the Taiping Rebellion, Zeng Guofan, Li Hongzhang (1823–1901) and Zuo Zongtang (1812–1885), pushed the Qing to take the first step toward modernization: the Self-Strengthening Movement (1861–1895), which placed an unequivocal emphasis on adopting Western military technology.

Holding the Universe in the hand, I slay the attacking powers. • **Hong Xiuquan**
(1814–1864), from “The Poem on Executing the Vicious and Preserving the Righteous”

In the rest of the nineteenth century, the British policy that had taken shape during the Taiping Rebellion—assisting and strengthening the Qing—continued to serve as Britain’s China policy, resulting in a different form of imperialism in China than in India and some other parts of Asia, where the British Empire ruled as a colonizing power in its own right.

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See also China

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Tang Taizong

(599–649 CE)

SECOND EMPEROR OF CHINA'S TANG DYNASTY

Emperor Taizong of the Tang dynasty (618–907 CE) was a benevolent ruler who created perhaps the greatest administration in Chinese history. He encouraged people to criticize his policies, he established a bureaucracy based on merit, and in foreign affairs he built alliances and won allegiance by fair treatment.

Emperor Taizong (reigned 626–649 CE) of the Tang dynasty (618–907 CE), hailed in Chinese history as exemplifying the ideal Confucian rule of benevolence and righteousness, established a cosmopolitan empire and facilitated the spread of culture and trade in East, Central, and Southwest Asia and beyond. The effective administration and prosperity of his reign lay the foundation of a strong Tang dynasty; his empire extended to the steppes, and he controlled the Silk Roads in Central Asia.

The Empire

During Taizong's reign, Chinese government, laws, and culture (including Confucianism, poetry, and architecture) spread to other East Asian states and was incorporated into the local culture. Japan's Taika Reforms (from 645), in which the Japanese court adopted a Chinese-style centralized government, system of taxation, and law code, is one example. Unlike rulers of later dynasties, Taizong also embraced cultural diversity. While adopting Confucianism as state guideline, he also honored Laozi and Daoism, supported Xuanzang, the great monk who made a pilgrimage to India to translate Buddhist sutras into Chinese, and built a Nestorian Christian church along with Zoroastrian temples in Chang'an, the

capital city. Chang'an, magnificent in appearance and culture, attracted foreign envoys, traders, and clerics who traveled there along the Silk Roads and by sea. People from all over Asia and even Africa, including the Turks, Persians, Arabs, Japanese, and Koreans lived among the Chinese in Chang'an and in southern port cities. Their food, clothing, arts, and the religion of Buddhism became part of the Tang culture, while Chinese silk, goods, and technology spread to the other lands.

The Emperor

Tang Taizong (the emperor's reign title; his birth name was Li Shimin) came from an aristocratic family from northern China. His mother and his wife were both of non-Chinese descent but they were known for Confucian propriety and were skilled in Chinese literature and calligraphy. Shimin was the second son of Li Yuan, a provincial governor under the Sui dynasty (581–618). In 617 Li Yuan rebelled against the unpopular Sui emperor Yangdi. Modern historians questioned the traditional account of Shimin's pivotal role leading to the uprising, but all agree that in the next four years Shimin defeated various contenders for the throne. At age twenty-four, he secured the empire for his father, whose warfare established the Tang dynasty.

Shimin excelled in cavalry and was an excellent strategist and commander. His exceptional achievements, however, led to fierce rivalry with his elder brother, who was the crown prince, and with his younger brother. In 626 Shimin triumphed over both brothers, who were killed, and ascended the throne at the age of twenty-nine as Tang Taizong when Li Yuan retired.



Yan Liben, *Emperor Taizong Receiving Tibetan Envoy*. Ink and color on silk. The Tibetan envoy is second from the left. Female attendants surround the emperor on the right. The Palace Museum, Beijing.

Bureaucratic Policies

Shimin inherited a war-torn economy from over a decade's fighting amongst rival forces since the end of the preceding Sui dynasty. To rejuvenate a land devastated by wars, Taizong adopted benevolent policies. He distributed land to farmers and collected taxes accordingly (approximately one-fortieth of income), and in kind. He was frugal in his expenditures and adopted a conciliatory foreign policy in his early reign to avoid wars. Taizong also ordered the revision and compilation of a penal code; the revised code reduced cruel punishments and became the foundation for later Chinese penal codes.

Tang Taizong also established a bureaucracy based on merit, responsible officials, and thoughtful policy (state policies were prepared and reviewed by different offices before implementation). He discussed policy with chief ministers, appointed officials and generals based on their ability, regardless of class, ethnicity, or personal connections, and he held civil-service exams with questions based on the Confucian classics. Many of his most accomplished and devoted officials and generals had been on the staff of his former enemies or rivals. Independent examiners regularly reviewed

officials; the emperor tolerated no abuses even from his own kinsmen.

He also encouraged criticism of any of his policies or behavior that people judged inappropriate. His most outspoken critic was Wei Zheng (580–643), who had once served one of the emperor's brothers. It was not always easy for a powerful and highly accomplished monarch to hear disagreement, frank criticism, or interventions, but the emperor restrained himself and rewarded his critics when their arguments were reasonable and sound. He kept Wei Zheng at his side and referred to him as his mirror that allowed him to see his mistakes. In fact, he credited Wei Zheng and other officials for making him a good ruler.

By 630, the fourth year of his reign, which the Chinese called the "Fine Governance of the Zhen-guan," official Tang dynasty histories compiled by court historians of later dynasties recorded this scene of prosperity: "The price of the grain was cheap. Cows and horses grazed freely in the field, people did not lock their outside gates, and there were few people in the jail. Merchants were no longer bothered by the bandits, the powerful families no longer dared to threaten the small people and in some regions people did not need to bring provisions when traveling



because they receive the hospitality of the people on the road” (Liu 1975, 3.41).

Frugality and Virtuous Customs

Besides sound policies and practices, prosperity was also achieved through frugality by the state and among the people. Tang Taizong was not only frugal in government expenses, but he also prohibited imperial clansmen and officials from extravagance in dwellings, carriages, and clothing. Concerned with luxurious and wasteful practices, he issued an edict to ban elaborate weddings and funerals among nobles and commoners. Tang Taizong blamed extravagance and indulgence for the fall of bad rulers throughout history, including Yangdi of the preceding Sui dynasty. He believed that “calamities derived from lascivious desires,” and “if arrogance and luxurious indulgence were unchecked, one can expect danger and destruction in no time” (Wu 1965, 1.1, 3.185). He also reminded his officials that taking bribes caused their eventual downfall and destroyed both their personal and their professional reputations. In *Difan*, an instruction manual for rulership that he prepared for his heir, Tang Taizong devoted two of the thirteen chapters to rail against luxury and indulgence, considering frugality essential for a good and lasting state. Therefore, throughout his more than twenty-year reign of during Zhengguan, the state was strong and prosperous, the customs were pure and simple, there were no embroidered robes or fine linen, and there were no problems of hunger or shortage of clothing.

The Confucian Goal of Life

Some of Tang Taizong’s trusted officials, such as Wei Zheng, Wen Yanbo, Chen Wenben, as well as the emperor himself, especially in his early reign, lived modestly, despite their power, wealth, and high positions. In what did they find joy, and what did they strive for in life? Tang Taizong once commented that the price of grain was low and people had surplus; this general prosperity gave him great pleasure even as he

refrained from his favorite hunting trips. *Zuo Zhuan*, one of the well-known commentaries for Confucian’s book, the *Spring and Autumn Annals*, described the three works that gave an individual everlasting existence or immortality—to manifest great virtue, to make great contributions (to all under heaven) or to leave works or writings of enduring value. Instead of treasuring material possessions or the perpetuation of one’s physical life, the Confucian work exhorts the individual to strive for a lasting legacy by bettering the lives of others with memorable deeds, words or virtue.

Tang Taizong was well versed in Chinese classics, and he frequently studied and discussed them with his officials. His officials could also recite Confucian values by heart because they engaged in the extensive review and compilation of commentaries for the five Confucian classics to prepare a standard version for the civil service examination. Tang Taizong’s political achievements were also complemented by a cultural spirit that valued virtue, public well-being, and works of wisdom. These Confucian goals have helped to produce many fine administrators in Chinese history as well as a large number of fine writings that have been preserved with great effort for later generations.

Stable domestic development was also connected to the alleviation of external threat. The statement about from the Tang court histories about peace and prosperity quoted above was also realized because of the defeat of the Tujue (Turks in Mongolia) in 630.

Foreign Affairs

In foreign affairs, Taizong preferred alliances and winning allegiance through the appeal of fair and kind treatment, but he used military force when necessary. In 630 he dispatched troops and defeated the eastern Turks (in modern Mongolia), who often raided Tang cities and were the serious threat of the Tang dynasty. In the following years his army conquered more territory, but more importantly, it secured the submission of tribes and kingdoms in central Asia and around the Silk Roads without wars. Often, Taizong offered Tang princesses in marriage to tribal leaders to forge



Li Shimin (Tang Taizong), *Encomium on the Warm Springs* (628 CE). The emperor, an avid collector of calligraphy by the master Wang Xizhi, practiced the art himself.

friendly diplomatic relations. When leaders submitted to Tang rule, Taizong made them governors of the regions they had formerly ruled independently, and he rarely intervened in their affairs. He allowed migration and in some instances ransomed back nomad clansmen who had been seized by their enemies. While considering weapons as unfortunate instruments that should not be used often, Tang Taizong nevertheless considered it important to maintain an adequate arsenal to protect the state.

Arts and Culture

Taizong loved fine horses, but he was also well versed in poetry and was an accomplished calligrapher. He ordered the compilation of the five Confucian Classics,

as well as a commentary on them, and these became the standard texts for later dynasties. He wrote a preface for Xuanzang's monumental translation of hundreds of Buddhist sutras and ushered the robust development of Buddhism during the Tang dynasty. Tang Taizong engaged his officials to undertake the writing of the official history of the previous dynasties, and he also wrote three commentaries in these works. He revered Daoism and claimed its legendary founder Laozi, whose family name was Li, as his royal ancestor. His broad interest and open attitude set the tone for a cosmopolitan and vibrant Tang culture.

Legacy

When Taizong died in 649, he was buried in Zhaoling, on a majestic mountain, which eventually was home to a constellation of over 160 tombs. Some of these were the resting places of imperial relatives, but most of the tombs housed meritorious officials, including over a dozen nomadic generals: Taizong had granted meritorious ministers the right to be buried in his mausoleum complex and included them in his extended political family.

Tang Taizong and his officials created a political legend in Chinese history. His recorded discussions with officials, the *Zhenguan zhengyao* (Essentials of Government of the Zhenguan Period) became part of the imperial curriculum for later Tang and all subsequent Chinese emperors, as well as for the rulers of Japan and Korea. It even influenced the non-Chinese Khitan, Jurchen, and Mongol peoples. Tang Taizong manifested the validity of Confucian benevolent rule, but he was also fully aware of the difficulties and complexity of governing a large empire. Throughout his reign, Tang Taizong and his officials remained vigilant, consciously preserving good rule and bequeathing it to their descendants.

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See also China; Confucianism

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Tea

Since its accidental discovery over ten thousand years ago in the jungle triangle that covers where the borders of Myanmar (Burma), Assam (in present-day India), and China meet, tea has become the most consumed liquid on Earth, apart from water. As a commodity and a beverage, tea has had immense consequences for almost every aspect of human life and international relations.

Tea is a drink made by picking and drying the leaves of a species of camellia, *Camellia sinensis*. The leaf is then infused in hot or boiling water. Tea has many advantages as a trade good. For one thing, it can be produced cheaply. The semitropical climate it prefers is found in geographic regions as widely separated as central China and East Africa. Only a few leaves are needed to make a good pot of tea, and they can be reused. Dry tea is very light and stores well, so it can be shipped across the globe with ease, and its high value in relation to its weight makes it worthwhile to do so.

The Spread of Tea

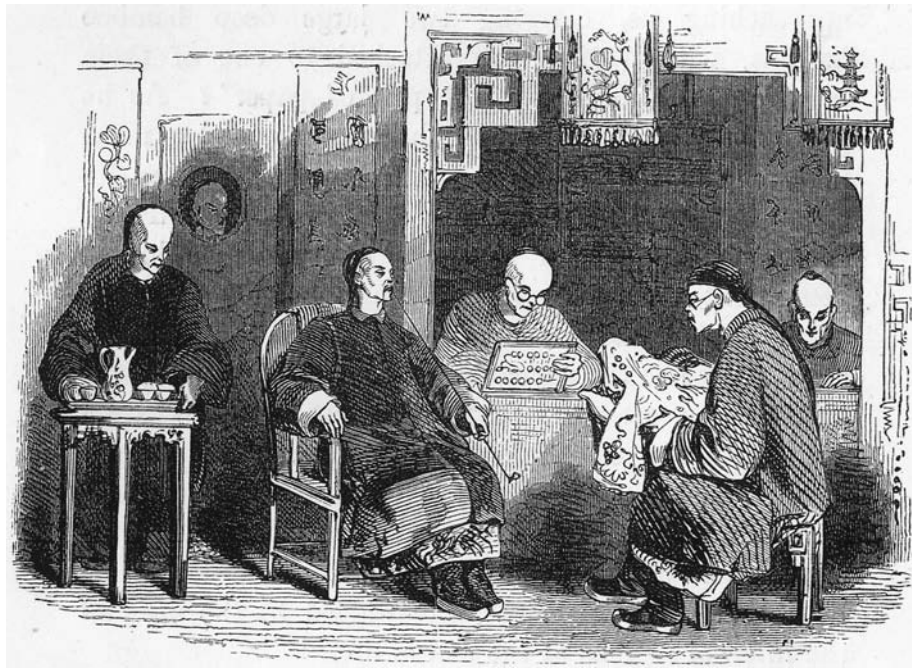
Tea moved from the jungles of the golden triangle into the gardens of China at least a thousand years before the birth of Christ. It spread across all of China by the eighth century CE. From the ninth century onwards it became the chief commodity traded with the wandering tribes of Central Africa. The Mongols and Tibetans became great tea drinkers, and blocks of tea became the local currency. Tea was drunk by Buddhist monks as a medicinal beverage in Japan from the eighth century; in the thirteenth century the habit

of drinking tea spread to the rest of the population, and tea became the universal drink.

Tea began to be imported to Europe in the seventeenth century. When the direct clipper trade to China opened up in the 1720s, the price dropped and



Kitagawa Utamaro's woodblock print (ukiyo-e), circa 1801–1804, shows a woman serving children at a tea party during Hinamatsuri (Girl's festival). Library of Congress.



Men read and engage in conversation at a Chinese tea shop in the late nineteenth century.

the imports soared. By the middle of the eighteenth century it was widely drunk by all classes in Britain. It was exported to the colonies, and the duty imposed on tea contributed to colonial unrest (as demonstrated in the Boston Tea Party of 1773, in which angry colonists dumped shipments of tea into Boston Harbor), which culminated in the American Revolution and the establishment of the United States.

The British Empire was to a considerable extent built around tea, and the British East India Company's profits were largely based on the tea trade and the three-way movement of opium, tea, and silver between India, China, and Britain. The British introduced tea into Assam from the 1840s, and by 1890 the region boasted large plantations and machine-based production in factories. Tea production continued to expand and spread, moving into southern India and Sri Lanka. The Indians themselves became great tea drinkers only from the 1920s. Before that almost all the tea had been exported to Britain, where it was sold for a higher price than it could fetch in India.

Because tea is best grown on plantations, its cultivation has altered the ecologies of the areas where it was grown, unsettled tribal populations, and thrown hundreds of thousands into boring, miserably paid labor, yet made huge profits for investors and tea managers. In Assam, for example, swathes of jungle, rare

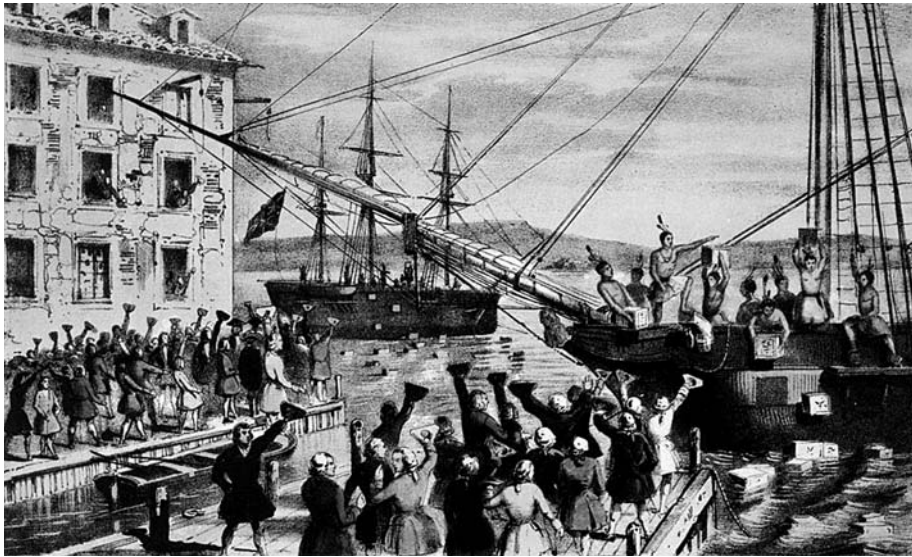
plants and many animals were destroyed. The tea coolies were herded into factories and into sweated labor in the gardens. The conditions have slowly improved, but are still often deplorable.

Tea and Social History

Tea is easily prepared for drinking, but its preparation is sufficiently elaborate to encourage the human love of play and ceremony. In East Asia it had an enormous effect on social life through the tea ceremony, which drew on elements of religion (especially Daoism in China and Zen Buddhism in Japan) and had a profound influence on aesthetics in areas as diverse as ink painting, pottery, and architecture. The Chinese, Korean, Japanese, and British developments in porcelain and pottery, themselves highly important trade goods, were centered on tea bowls and other tea ware. In present-day Japan, mastery of the tea ceremony is considered a sign of good breeding, and the tea ceremony industry is quite large.

Drinking tea altered gender relations, meal times, and etiquette. It helped raise the status of married women in eighteenth- and nineteenth-century England. It made the English breakfast less meat-intensive and allowed the evening meal to be held later. It also led to new formal gestures of politeness and courtesy surrounding the preparation and serving of tea.

*Thank God for tea! What would the world do without tea? How did it exist?
I am glad I was not born before tea.* • Sydney Smith (1771–1845)



Nathaniel Currier, *The Destruction of Tea at Boston Harbor* (1846). Lithograph. Contrary to Currier's iconic depiction, few of the men dumping tea into the harbor were disguised as Native Americans. Library of Congress.

Today approximately three billion people a day drink tea. Long appreciated for the gentle stimulation its caffeine content provides, tea is also highly regarded for its ability to kill the microorganisms that cause many water-borne diseases, and it is highly touted for its antioxidants. Historically, it has affected politics and the relations between nations and empires. It encouraged the development of new types of ship and ingenious factory machinery; it funded great trading companies and inspired literature and philosophy. It is indeed a remarkable plant.

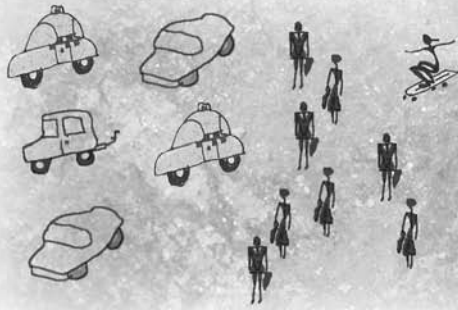
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See also British East India Company

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Technology— Computer

Humans have always looked for “technologies” to help them count—from stick-markings prehistoric foragers made to keep track of cattle to the first programmable, room-filling mainframes employed by post-World War II business. In the twenty-first century computers do far more than calculate; forecasters predict that the computing power of today’s desktop will someday be packaged in a device the size of a shirt button and for the cost of a dime.

Computers have transformed work, communication, and leisure activity, and they promise future changes of equal magnitude. For many years, computer technology was dominated by groups in the United States, because that nation had the largest single market and its government invested heavily in military applications and fundamental science and engineering. But many nations contributed to the technological basis on which computing arose, and with the development of the World Wide Web computing became a global phenomenon.

Mechanical Predecessors

Programmable digital computers were developed just before the middle of the twentieth century, but the more general history of devices that help people think goes back to prehistoric times, when someone first carved marks on a stick to count the cattle in a herd or mark the days in the phases of the moon. Complex additions and subtractions were done in ancient days by arranging pebbles in piles on the ground, and our word *calculate* derives from the Latin word *calculus* (pebble). The most complex known “computer”

of classical civilization is the remarkable geared Antikythera device, which apparently was designed to predict the motions of the sun, moon, and planets. Found in a shipwreck on the bottom of the Mediterranean Sea, it is believed to date from about 80 BCE.

Computing has always been closely allied with mathematics, and the invention of logarithms by the Scottish mathematician John Napier around 1614 was a major advance for practical calculating. With a mechanical calculating device, it is much easier to add than to multiply, and subtraction is much easier than division. Logarithms turned multiplication into addition, and division into subtraction, at the cost of looking up numbers in vast books of tables that also had to be calculated by hand. From Napier’s time until the introduction of transistorized electronic calculators around 1970, a book of logarithm tables was a standard tool for engineers and scientists. They were cumbersome to use, so for quick estimates slide rules were employed. A slide rule is an analog calculating device based on logarithmic scales marked along rulers that slide past each other. The term *analog* refers to the analogy between the abstract numbers and corresponding physical distances along a line.

Digital mechanical calculators that represented numbers as precise digits were also developed—for example, by the French mathematician and philosopher Blaise Pascal in 1642. A common approach was to connect a series of wheels, each of which would turn in ten steps for the digits 0 through 9. A legend has developed that the eccentric English dilettante Charles Babbage was the father of computing because around 1835 he designed a mechanical calculator that could be programmed with punched cards. Science fiction writers William Gibson and Bruce Sterling

Computers are useless. They can only give you answers.

• Pablo Picasso (1881–1973)

wrote a novel imagining that Babbage succeeded in building it, launching a golden age of British scientific and technological dominance but magnifying social problems. However, in reality Babbage failed, and historian Doron Swade estimates that his influence on the development of electronic computers was insignificant.

The first comprehensive digital data-processing system using cards was developed by the American engineer Herman Hollerith, who began patenting his ideas in the 1880s. By 1902, when his machines were used to process the vast sea of information collected in the 1900 U.S. census, they already incorporated electric relays that could do conditionals (if-then operations).

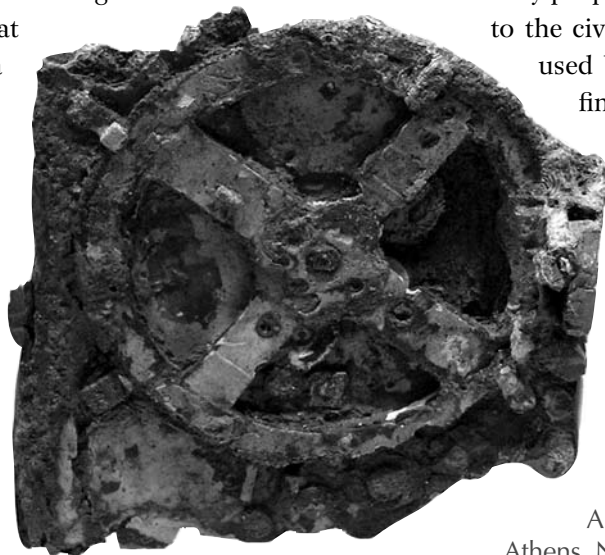
The Mainframe Era

There is considerable debate among historians over which programmable, electronic digital computer was first or most influential. By 1941, professor John Atanasoff and graduate student Clifford Berry had created a demonstration machine at Iowa State University, but they did not develop it further. In Britain, a special-purpose electronic computer called Colossus began cracking German codes in 1943, but its design was kept secret for more than three decades. Perhaps the most influential early electronic digital computer was ENIAC (Electronic Numerical Integrator and Computer), completed at the University of Pennsylvania in 1946 by a team headed by physicist John W. Mauchly and engineer J. Presper Eckert.

ENIAC's primary job was calculating accurate artillery firing tables for the U.S. Army. In the frenzy of World War II, many new models of long-range guns were being produced, and soldiers in the field needed complex tables to tell them how to aim to hit a target at a certain distance

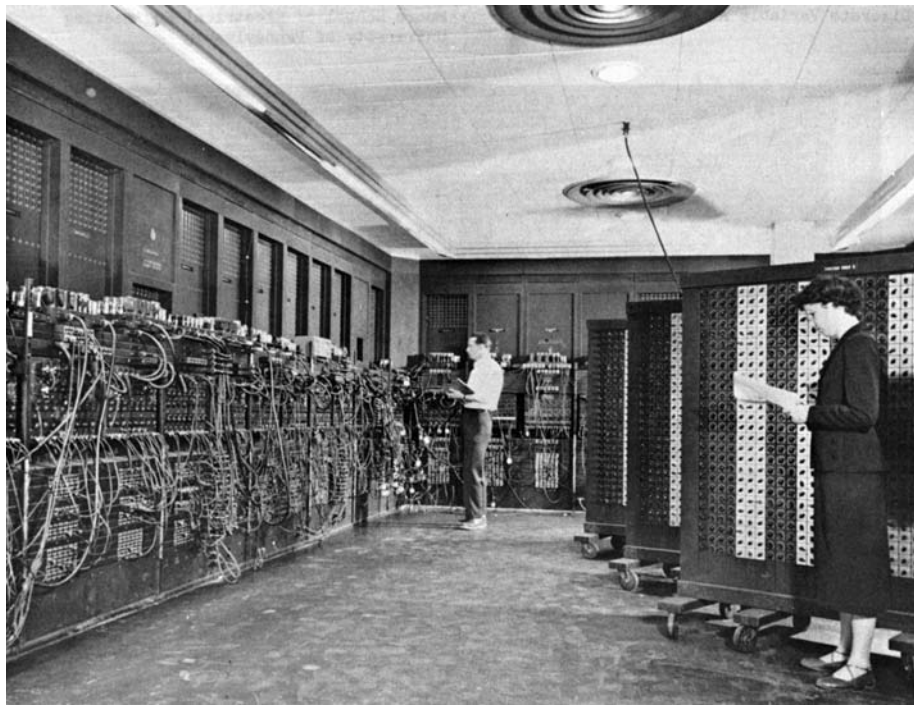
under various conditions. It was impossible to fire the guns under all the likely conditions, so data from some judiciously chosen test firings were used to anchor elaborate sets of mathematical calculations. Vannevar Bush, who was the chief science advisor to President Roosevelt, had a huge mechanical analog computer, the *differential analyzer*, built for this purpose in 1930. In theory, an electronic computer would be much faster and more accurate, but there were serious questions about whether it could be sufficiently reliable, because before the development of transistors they were built with vacuum tubes that tended to burn out. ENIAC weighed 30 tons, covered 1,800 square feet, and contained 18,000 vacuum tubes.

ENIAC's data input and output employed Hollerith's punch cards, a method that remained one of the standard approaches through the 1970s. However, programming was done manually by setting hundreds of rotary switches and plugging in wires that connected electronic components. Mauchly and Eckert designed a successor that could store a program in its memory. They formed a small company, launched a line of machines called UNIVAC, and then sold out to a private company in 1950. This example typifies mid-twentieth-century computing. The technology for large and expensive mainframe computers was developed with government funding for military purposes and then transferred to the civilian sector where it was used by large corporations for financial record-keeping and similar applications.



Main fragment of the Antikythera device (c. 80 BCE). The mechanism consists of a complex system of thirty-two wheels and plates inscribed with the signs of the zodiac and the months. National

Archaeological Museum, Athens, No. 15,987.



ENIAC programmers in the Ballistic Research Laboratory Building 328, Philadelphia, Pennsylvania (c. 1947–1955). From *Historical Monograph: Electronic Computers Within the Ordnance Corps* by K. Kempf (n.d.).

Much of the research work was done at universities, and the availability of a few mainframe computers on campus gave scientists the chance to adapt them to many research purposes.

The Personal Computer

The birth of the computer industry involved nothing less than development of an entire computer culture, including programming languages and compilers to control the machines, networks and input-output devices to transmit information between users and machines, and new courses in universities leading to the emergence of computer science and engineering as a distinct field. For years, the dominant model was expensive mainframe computers with batch processing of data—computer runs that were carefully prepared and then placed in a queue to await time on the mainframe—although there were some experiments with time sharing in which several individuals could use a computer simultaneously in real-time. Then, in the mid-1970s, both inside information technology companies and outside among electronics hobbyists, the personal computer revolution offered a radically new concept of computing.

In April 1973, Xerox corporation's Palo Alto Research Center ran its first test of the Alto, the prototype

desktop personal computer. Alto innovated many of the technologies that would become standard for home and office computers, including the mouse, windows and icons on the screen, desktop printing with many different fonts, incorporation of images and animations, and local area networks that allowed individuals to send files back and forth between their machines. Xerox was not able to exploit the technology at the time, because of the high cost and low performance of microelectronics. In the 1960s, Gordon Moore, a founder of the Intel computer chip corporation, propounded what has become known as Moore's Law, the observation that the performance of computer chips was doubling every eighteen or twenty-four months. Alto's technology finally hit the home market when the first Apple Macintosh was sold in 1984, soon followed by Microsoft's Windows operating system.

Before any of the big information technology companies offered personal computers to the public, hobbyists were building their own from kits, notably the Altair first announced in the January 1975 issue of *Popular Electronics* magazine. A technological social movement, drawing on some of the cultural radicalism of the 1960s, quickly spread across America and Western Europe, although in retrospect it is difficult to estimate how much this radicalism contributed



Arenas in Korea host regular competitions between the country's finest video and computer gamers. The events are televised, and the competitors are treated like movie stars.

to the rapid advance of the computer revolution. It is true that Apple was founded in a garage by two friends, and Bill Gates dropped out of college to help his buddies found Microsoft. For a few years after the Apple II computer appeared in 1977, an individual could write a commercially viable software program and start a small company to market it. But the greatest advances after the mid-1980s again required the combination of massive government funding and large corporations.

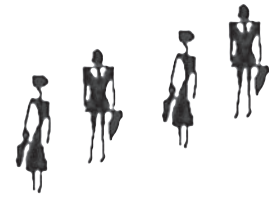
Internet and the World Wide Web

Internet was born in 1969 as ARPAnet, a research network funded by the Advanced Research Projects Agency of the U.S. government that connected computers at the University of California at Los Angeles, the Stanford Research Institute, the University of California at Santa Barbara, and the University of Utah. In 1972 it was first demonstrated to the public, and in the same year it began carrying email. More and more educational institutions, government agencies, and corporations began using the Internet—and finding new uses for it—until by the end of the 1980s it was an essential tool for research and had begun to demonstrate its value for business and personal applications. For example, in 1978 Roy Trubshaw

and Richard Bartle invented the first online fantasy game or MUD (Multiple-User Dungeon) at Essex University in England, and in 1989 Alan Cox at the University College of Wales released his own version onto the Internet.

In 1990 at the high-energy physics laboratories of the Conseil Européen pour la Recherche Nucléaire (CERN) near Geneva, Switzerland, Tim Berners-Lee developed the first hypertext browser and coined the term World Wide Web. Early in 1993, University of Illinois student Marc Andreessen at the National Center for Supercomputing Applications, funded by the U.S. National Science Foundation, programmed the first version of Mosaic, the easy-to-use browser that would introduce millions of people to the Web. Both the Netscape and Microsoft Internet Explorer browsers were based on Mosaic, and it is estimated that more than 10 percent of the world's population used the Internet in 2002.

The mainframe-timesharing concept of the 1970s has evolved into what is called *client-server architecture*. A server is a dedicated computer, often large, that houses centralized databases (in companies, universities, or government agencies) or connects directly to the Internet. Originally, clients were dumb terminals with little or no computing power of their own, but today they are powerful personal computers connected



to the server and able to access its resources. A very different approach has arisen recently, called *peer-to-peer architecture*—for example, the music-file-sharing programs like Napster that link personal computers over the Web, in which each computer simultaneously functions as both server and client. The *grid computing* concept distributes big computation jobs across many widely distributed computers, or distributes data across many archives, eroding the distinction between individual computers and the Internet.

The Era of Ubiquitous Computing

Computers today are found nearly everywhere, embedded in automobiles and grocery store checkout counters, or packaged as pocket-sized personal digital assistants that allow a user to send email or surf the Web from almost anywhere. They have begun to take over the roles of traditional devices such as telephones and televisions, while other devices have become accessories to computers, notably cameras and music players. Old forms of computing do not die, but expand. Children's toys now have vastly greater computing power than ENIAC, but ENIAC's direct descendents are supercomputers capable of doing dozens of trillions of calculations per second.

Computer science continues to advance, and nanotechnology promises to sustain Moore's Law until perhaps about 2025, halting only after the smallest electronic components have shrunk to the size of a single molecule. Two decades of doubling every eighteen months means improvement by a factor of 8,000. That would imply the computing power of today's desktop computer packaged in a shirt button and costing a dime. What will people do with such power?

In 2003, the Interagency Working Group on Information Technology Research and Development of the U.S. government identified the following "grand challenges" that computing could address in the following decade:

- Knowledge environments for science and engineering

- Clean energy production through improved combustion
- High confidence infrastructure control systems
- Improved patient safety and health quality
- Informed strategic planning for long-term regional climate change
- Nanoscale science and technology: explore and exploit the behavior of ensembles of atoms and molecules
- Predicting pathways and health effects of pollutants
- Real-time detection, assessment, and response to natural or man-made threats
- Safer, more secure, more efficient, higher-capacity, multimodal transportation system
- Anticipate consequences of universal participation in a digital society
- Collaborative intelligence: integrating humans with intelligent technologies
- Generating insights from information at your fingertips;
- Managing knowledge-intensive dynamic systems
- Rapidly acquiring proficiency in natural languages;
- SimUniverse [educational computer simulations]: learning by exploring
- Virtual lifetime tutor for all

William Sims BAINBRIDGE

National Science Foundation

See also Internet; Information Storage and Recovery; Mass Media

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Technology— Firearms

Between the eleventh century and the 1830s, firearm technology developed fairly slowly and equally around the globe; the developments that most affected societies occurred after industrialization and were adopted by the military. Today the mass production of personal firearms—ranging from hunting rifles to handguns to paramilitary weaponry—has brought the impact of firearms well beyond the military sphere.

The history of firearms can be divided into two eras: an age of smoothbore weapons (weapons whose barrel has an unrifled bore), up to about 1830, and an age of rapid technological innovation and industrialization after 1830. The first age saw relatively slow technological development and relatively few disparities in the impact of firearms around the globe. The second age, however, created vast disparities in military strength throughout the world and had a much broader impact upon society as a whole.

Invention and Spread of Firearms to 1830

Gunpowder first appeared in China during the Song dynasty (960–1279), probably during the eleventh century, an ironic by-product of a Daoist search for an elixir of immortality. It was used by the Chinese in fireworks and in warfare in the form of bombs launched by catapults, proving especially useful in naval warfare. Historians disagree over whether it then spread to Europe via Silk Roads trade routes or whether Europeans invented gunpowder independently. Either way, once in Europe gunpowder was put to use as the moving force behind projectiles,

and firearms were born. The earliest depiction of a gunpowder weapon in manuscripts dates to the late 1330s.

Gunpowder was used first in cannons. By the fifteenth century handheld firearms had also appeared in the form of muskets and their lighter cousin the arquebus (a portable gun usually fired from a support). Both forms of the technology spread not just through Europe but also to most of the rest of the world over the next century. The Ottomans had better cannons than the Europeans by 1450, specializing in huge siege guns that helped them take Constantinople in 1453 and also fielding a musket-bearing corps of janissary (slave) infantry. The Mughals made effective use of cannons in the early 1500s, as did the Ming Chinese. Muskets made it to Japan in 1542 on a Portuguese ship; Japanese smiths soon manufactured muskets as good as European models, and Japanese generals pioneered effective battlefield use of the weapons. African kingdoms traded for muskets and then fought European armies on equal terms in places such as Morocco and Angola in the sixteenth and seventeenth centuries, and Native Americans made effective use of musketry against Europeans in frontier wars during the seventeenth century.

Characteristics and Impact to 1830

Almost all the cannons and handheld guns in this age shared certain characteristics. They were smoothbore weapons and therefore fairly inaccurate individually (rifled muskets—i.e., weapons with spiral grooves cut into their bores—existed, but they were very slow to load and used only for hunting). Even smoothbores were somewhat cumbersome to reload, so rates of fire



Gunpowder, which appeared in China in the eleventh century, was first used in fireworks and naval warfare. This drawing is one in a collection of 179 Chinese drawings mounted on 79 leaves (pages). New York Public Library.

were low compared to bows—the best eighteenth-century units could manage only two to three shots a minute. To achieve a significant battlefield effect, these slow, inaccurate guns had to be employed en masse, either as cannon batteries or in large units of infantry, though skirmishing was also possible in the right terrain. But guns had advantages. The penetrating power of cannon shot was far superior to traditional torsion or tension artillery (catapults and the like); muskets likewise had great penetrating power, rendering much armor obsolete. Above all, handheld firearms were easy to learn to use: several weeks' practice could turn raw recruits into reasonably effective musketeers, whereas good archery was a skill acquired over decades.

The varied impact firearms had in this age derived from these characteristics. Their penetrating power and ease of use combined to pose a potential threat to mounted elite warriors, who found themselves and

their mounts suddenly more vulnerable. Nevertheless, cavalry forces did not cease to be effective with the advent of firearms, and in fact the most formidable armies of the fifteenth and sixteenth centuries, including the Ottomans, the Manchus, and the Mughals, combined the tactical mobility of steppe cavalry with artillery trains and a corps of infantry musketeers. But firearms meant that steppe cavalry could no longer be an independent threat to sedentary armies, especially when their opponents added fortifications and firepower together. So gunpowder played a role in ending the long role steppe nomads had played in Eurasian warfare, but to characterize the great Asian powers of the age as “Gunpowder Empires,” as some historians do, is to overemphasize the role of cannon in what really were synthetic systems in which steppe-style cavalry was still vital.

The notion of “Gunpowder Empires” also derived from the impact of firearms on fortifications: they supposedly rendered pregnunpowder forts obsolete, thereby facilitating wide conquests (at least until new forms of fortification were devised to counter cannon fire). While such an effect was briefly true for some areas of Europe, in many other places, such as India, fortifications could already withstand gunpowder, so guns had little effect on conquest. And in Europe, a new form of fortification arose in Italy around 1525. From one perspective, the *trace italienne* simply restored the defensive status quo. But some historians see in the new fortifications (or, alternately, in the tactical implications of handheld firearms for infantry battle in the European context) the seeds of a “military revolution.” Briefly, the various versions of this theory see gunpowder necessitating larger armies, either to besiege the new fortifications or to provide mass fire on the battlefield. Larger armies in turn required governments to become more organized in order to pay for them. Better governments and their bigger, better armies then launched Europe into its position of world leadership. The military revolution theory therefore inserts firearms as a causal factor in both the emergence of the modern state and the rise of Europe. The theory has been much debated, and is in its simplest form a vast and technologically

determinist overstatement, at the very least; some historians doubt that there was a military revolution at all in early modern Europe. Certainly no area of the world derived a decisive edge from the use of gunpowder weapons alone before the nineteenth century, simply because the technology was so widely diffused. Whatever edge European arms had by the late eighteenth century was based on organizational techniques, not technology, and was limited in its reach by transport problems.

On the other hand, the combination of firearms, especially cannons, and full-rigged oceangoing ships did create a revolution of sorts at sea, though claims for even this must be qualified by the lack of serious competition from Asian powers (arising largely from different interests, not technological barriers). Still, effective exploitation of the seas lay at the heart of growing European influence in the world by 1800, and the European leader in this sphere, Great Britain, was arguably the first to create a “modern” fiscal-military state and military-industrial complex focused on the navy. By 1800, also, Napoleon and the armies of the French Revolution were bringing to a pinnacle the operational and tactical art of land warfare in the age of smoothbore firearms.

Technological Innovations since 1830

The first great change in the smoothbore equation came in 1830, when rifled muskets that could be reloaded as rapidly as smoothbores appeared, thanks to the invention of a bullet with a hollow base. The ball was smaller than the rifled bore and could be rammed home, but the base expanded when fired, filling the rifling. The spin imparted by rifling increased both accuracy and range, which almost tripled in effective terms. Suddenly, cavalry were driven from any significant battlefield role, and infantry attacks became much more expensive and difficult. Further innovations followed in the course of the nineteenth century. Breech loading allowed infantry to reload lying down and so take greater advantage of cover. Better metal casings allowed bigger, more powerful shells. Smokeless powder allowed further concealment.



The Bren light machine gun was featured on one in a set of fifty cigarette cards (now valued as collectibles similar to baseball cards), called *Britain's Defenses*.

Mechanisms for rapid or multiple shots, including the invention of machine guns, gave two or three men the firepower of an entire Napoleonic brigade. Similar improvements affected larger firearms. Land artillery and naval guns saw the introduction of aerodynamic exploding shells, steel barrels, and armor-piercing points. Perhaps more important than any particular improvement was the introduction of interchangeable parts in gun manufacturing, which allowed the industrialization of weapons making. Mass production meant that armies could be supplied with new weapons more quickly, which encouraged more rapid

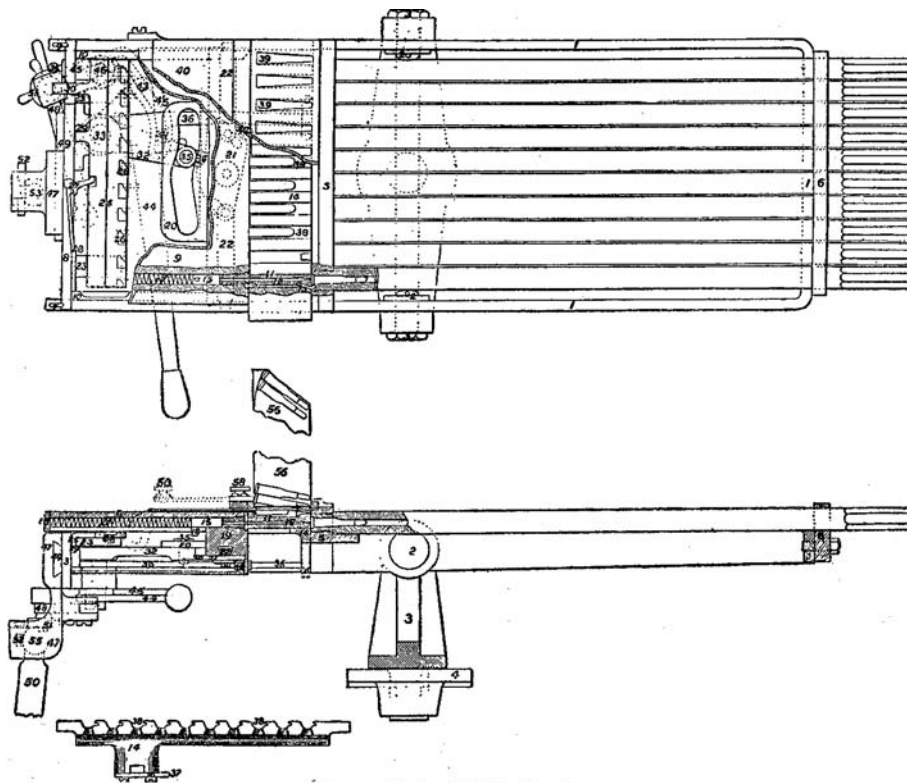


FIG. 5.—Nordenfeldt Machine-Gun.

1-10, Parts of frame;
11, Breech plug;
12, Striker;
13, Extractor;
14, Cartridge receiver;

15-18, 23-31, Lock and trigger parts;
19-22, Locking action;
32-35, Loading action;
36-39, Cartridge receiver;
40, Cover;

41-44, Parts of hand-lever;
45-49, Traversing action;
50-55, Elevating and trailing action;
56, 57, Hopper and slide.

The early Nordenfeldt machine gun, diagrammed here, included standard features such as locking action, loading action, traversing action, and elevating and trailing action.

technological change and soon led to the widespread commercialization of firearms beyond military uses. The twentieth century saw firearms mounted on motorized vehicles and carried into the air on planes, and by the end of the century munitions were becoming “smart” as computer technology began to change firearms significantly.

Impact since 1830

These changes in firearms technology vastly increased the impact of firearms in the world. In Europe and the United States, where the new technologies were developed, firepower led to a series of tactical revolutions first visible in the trench warfare around Petersburg, Virginia, in 1864. At first, almost all the changes favored the defense in battle. Attempts to break the defensive power of artillery, machine guns and rifles led to the development of mechanization for increased mobility, including mobilization of armies via railroads and then the use of vehicles with internal combustion engines on land and in the air for

troop transport and as fighting vehicles. Firepower also called forth the use of armoring, first on ships and later on tanks and other land vehicles. Greater and greater firepower carried by more mobile armies, air forces, and navies inevitably spread the impact of war far beyond the traditional frontline, increasingly blurring the distinction between combatant and noncombatant.

Very much unlike the firearms technology of the smoothbore age, firepower in the industrial age created (and continues to create) vast disparities in military capabilities around the globe. Small armies of Europeans armed with rifles and machine guns could by 1870 face down many thousands of indigenous warriors. Firearms, in other words, became central to creating the imperialism of the nineteenth century as well as to its maintenance well into the twentieth. But the widespread availability of firearms embodied in a worldwide arms trade, a trade later given impetus by ideological conflicts such as the Cold War, also helped bring down colonial empires in the second half of the twentieth century. Following in the footsteps

Lo! Men have become the tools of their tools. • Henry David Thoreau (1817–1862)

of Mao Zedong and the Chinese Communist Army, the leaders of anti-colonial rebellions (and later of antigovernment insurgencies of all stripes) made use of firepower through guerilla tactics to cause major problems for conventional armies. The firepower of such groups also increased their ability to damage civilian populations, a problem often exacerbated by ethnic or nationalist tensions in civil wars. Arms-control agreements focused on weapons of mass destruction have done little to stem the worldwide flow of personal firearms to any group that wants them.

In addition, the industrialization of weapons manufacturing and the widespread availability of personal firearms—ranging from hunting rifles to handguns to paramilitary weaponry—that resulted from mass production carried the impact of firearms well beyond the military sphere. Given the potential for damage that modern firearms give to individuals and small groups, most governments that were capable of doing so moved to restrict the availability of firearms to the civilian population, an extension of previous policies aimed at disarming the general populace in favor of the central authority, thereby maintaining a monopoly on the legitimate use of force. But weak or faction-ridden governments proved incapable of enforcing such policies, with bloody results that often showed up in periods of civil war or insurgency. And the policies of the United States government (inspired by some readings of the Second Amendment) have traditionally imposed fairly minimal restrictions on gun ownership and use, resulting in high levels of gun-related violence and murder rates significantly higher than those in comparable industrialized countries with more restrictive policies. Meanwhile, the image of firepower has entered mainstream popular culture around the world through films and computer games, the “shoot-‘em-up” being a major genre of each medium. The impact of firearms in world history, whether military, political, social or cultural, therefore

stands as a case study of the growing complexity and interconnectedness of technology and human social relations visible in all areas of world history.

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See also Military Strategy and Tactics; Technology—Overview

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Technology— Overview

Over the course of our evolution we humans have developed tools and skills—technologies—using our most powerful resource, the brain. To understand history, we must know who possessed what technologies and how they used them. The history of technology is the history of power over nature and over people.

Human beings cannot fly, or fight with their teeth and claws, or run, swim, or climb as handily as other animals. Instead, using our brains, we have devised tools and skills that have given us power over the natural world and permitted us to thrive almost everywhere on the planet. These tools and skills—in a word, technology—have also given some people power over others.

Before and During the Advent of Agriculture

Humans and their tools evolved symbiotically over millions of years. The hominid *Australopithecines* who lived in Africa from 4 to 2.5 million years ago used river cobbles as crude choppers to smash the bones of dead animals. Their descendents, members of the species *Homo erectus*, made hand axes by breaking flakes off both sides of a stone; they also learned how to control fire. With these tools, some hominids hunted big game while others gathered plants and insects. The size of their brains increased in tandem with their use of tools, while their teeth and jaws grew smaller.



The species *Homo sapiens*, humans like ourselves, appeared more than 150,000 years ago. They made a multitude of specialized tools, such as spear points, scrapers, and blades. Beginning 70,000 years ago, humans made clothing, houses, and oil lamps, as well as cave paintings, musical instruments, and decorative jewelry. With their advanced hunting and gathering equipment and skills, they migrated to previously uninhabited areas, such as Siberia and the Americas. They had boats of some sort, with which they crossed miles of open sea to reach New Guinea and Australia. They moved frequently in search of game and plant foods. Some 30,000 years ago, humans learned to sew clothing, using bone needles and sinew as thread, which allowed them to survive in formerly uninhabitable areas of the world like Siberia. Then, after 10,000 BCE, hunters began using bows and arrows to kill elusive and fast-moving game like deer and gazelles.

Permanent settlements coincide with the development of agriculture. Starting some 12,000 years ago, people in the Middle East began to harvest wild wheat and barley, and to help these plants grow by sowing seeds and clearing away weeds. To chop down trees, they made smooth-sided stone axes. By storing grains from

This Acheulean handaxe (one type of stone tool made by prehistoric hominids) was found near Kibish, Ethiopia, where human bones believed to be 195,000 years old were also discovered.



Arrow points (top) were reworked and refined through experimentation, often from dart points (bottom). This photo shows the difference between the two types in size and neck/stem width. University of Missouri.

one harvest to the next, they were able to stay in one place and build permanent houses; the first known settlement was Jericho, founded c. 7350 BCE. They also domesticated animals: first dogs, then sheep and goats, then pigs, donkeys, and cattle. Agriculture developed in China and Southeast Asia in the ninth millennium BCE, in Europe from the seventh millennium, in West Africa from the fourth, and in Mexico from the second millennium on. In the Americas, the process started later and took longer because there were fewer wild plants and animals that could be domesticated: corn, beans, and squash were the primary domesticated plants, and dogs, turkeys, guinea pigs, and llamas the primary domesticated animals. Other tools and skills that made possible agriculture and animal husbandry included digging sticks and hoes to prepare the ground, sickles to harvest grains, baskets and bins to hold crops, and fences to keep animals.

The shift to agriculture and animal husbandry took two thousand years, during which time people continued to hunt and gather wild foods. By growing and

raising food, far more people could survive in a given area than was possible if they relied on the bounty of nature. Once their population grew, however, they could no longer return to their old lifestyle.

Hydraulic Civilizations (3500–1500 BCE)

As agriculture spread, people who lived on the banks of rivers, especially in hot dry regions, found that they could obtain phenomenal yields by watering their crops. To irrigate away from the riverbanks meant digging canals and constructing dikes. In the lower valley of the Tigris and Euphrates rivers in Mesopotamia (now Iraq) the Sumerians (who arrived in the region between 4000 and 3500 BCE) organized large numbers of workers to carry out these public works projects. They used well-sweeps (a bucket at the end of a counterbalanced pole) to lift water from the canals to their fields. By the mid-fourth millennium BCE, the resulting food surpluses allowed their leaders to build cities, create governments and laws, and employ artisans, bureaucrats, soldiers, and merchants. In Mesopotamia, cities built ziggurats, multistory temples made of sun-dried bricks.

The same social revolution occurred in Egypt in the late fourth millennium, for the same reasons. Every year, the Nile River flooded the valley. To retain the water, farmers built dikes to enclose basins; once the soil was thoroughly soaked, the water was released to the next basin downstream. All of this required massive amounts of labor. During the off-season, farmers were recruited to build pyramids and temples.

Irrigation and water control were the key technologies of several other early civilizations. In northern China, civilization grew out of the need to protect the land from the dangerous floods of the Huang (Yellow) River. In the Valley of Mexico (central Mexico), farmers built raised fields called *chinampas* in shallows lakes by digging canals and heaping the rich mud on their plots. On the coastal plains of Peru, among the driest environments on Earth, farmers used the rivers that came down off the Andes to irrigate their fields. The people of Peru built cities with great walls of massive stones that fit together perfectly.

It is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being. • **John Stuart Mill (1806–1873)**

Early civilizations also developed other technologies. Women spun thread and wove cloth, some of exquisite beauty, out of flax in Egypt, wool in Mesopotamia and Peru, silk in China, and cotton in India and the Americas. Potters made pots for storage and cooking. Smiths learned to smelt metals from ores, first copper and later bronze, an alloy of copper and arsenic or tin. Wheeled carts were first used in Anatolia (now Turkey) and Mesopotamia in the fourth millennium, and spread from there to the rest of Eurasia.

Iron and Horses (1500 BCE–1500 CE)

The elites of first civilizations were very conservative, yet they could not prevent technological changes and the disruptions they caused. Among the many innovations that spread throughout the Eastern Hemisphere in the second millennium BCE, we can single out the two that had momentous consequences: the utilization of iron and the domestication of horses.

Iron, first smelted in Anatolia around 1500 BCE, required much more labor and fuel to make than bronze, but unlike copper and tin, its ores were found almost everywhere. Once blacksmiths learned to temper iron by repeated heating and quenching in water, it became hard enough to cut bronze. The low cost of iron made it possible to produce axes and saws for farmers and carpenters and knives and pots for household use.

Iron spread to the Middle East around 1000 BCE, and from there to Africa and India. Iron tools gave a tremendous advantage to those peoples who used them at the expense of nature and of people with less-developed technologies. Bantu-speaking people from the Nigeria-Cameroon region cleared wooded areas of central and southern Africa for agriculture and gradually pushed earlier inhabitants such as the Batwa (known by the pejorative term *Pygmies*), and San into forests and deserts not suitable for agriculture. In India, people with axes spread into the Ganges valley and the Deccan Plateau, turning forests into farmlands.

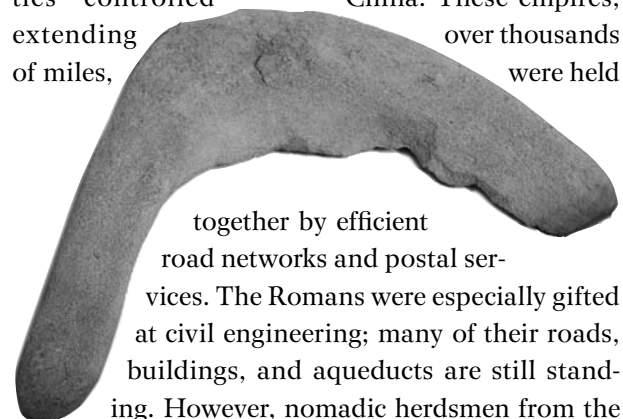
The Chinese created the most advanced iron industry.

Not only did they make iron by hammering and tempering, like the peoples of Eurasia and Africa, they also invented bellows pumped by waterwheels that heated the furnace to the point at which the iron melted and could be poured into molds. As the deforestation of central and southern China proceeded, iron makers learned to heat their furnaces with coal. By the late first millennium CE, China was mass-producing iron tools, weapons, and household objects such as pots, pans, knives, and bells.

In the Middle East, meanwhile, blacksmiths learned to make “damascene” blades (after Damascus in Syria) by repeatedly heating a strip of iron in burning charcoal, hammering it thin and folding it over, until the iron turned to steel, becoming hard, sharp, and flexible. Such a process was extremely time-consuming and was used only for very costly swords.

Horses were first tamed in the third millennium BCE, but were of limited use until carpenters began building chariots with spoked wheels, pulled by two horses and carrying two men, one to drive the horses and the other armed with a bow and arrows. Charioteers from the grasslands to the north invaded the agrarian civilizations of the Middle East, India, and China, causing great havoc between 1700 and 1300 BCE. Chariots in turn were made obsolete around 1200 BCE when nomadic herdsman learned how to shoot arrows while riding a horse. After about 1500 BCE, the agrarian states added cavalry and iron weapons to their infantry armies and established large empires of conquest. The Assyrians, Persians, and Romans in turn dominated Southwest Asia and the Mediterranean, while the Qin and Han dynasties controlled China. These empires, extending over thousands of miles, were held

Harvester's sickle from the Sumerian culture, Iraq, 3000 BCE, made from baked clay.



together by efficient road networks and postal services. The Romans were especially gifted at civil engineering; many of their roads, buildings, and aqueducts are still standing. However, nomadic herdsman from the



Developments in agriculture led to innovations like the iron plow; here a farmer tills a rice paddy. From the *Illustrated Guide of Tilling and Weaving: Rural Life in China*, pictures by Bingzhen Zhao (1680–1720).

grasslands of Asia continued to increase in numbers and in military might, and periodically attacked the agrarian civilizations. For two thousand years, the history of Eurasia consisted in large part of the struggle between agrarian empires and nomadic herds-men. For centuries after they were domesticated, horses could not be used in agriculture because the throat-and-girth harness caused them to choke and rear up if they had to pull a heavy load. The horse collar, which placed the load on their shoulders rather than their throats, first appeared in China in the third century BCE and reached Europe between the ninth and the eleventh centuries CE.

Advances in Agriculture (1500 BCE–1500 CE)

Agriculture was also transformed during this period. As Han Chinese moved from northern China into the tropical Yangzi (Chang) River valley and the south, they perfected the art of water management. Rice grows best in warm shallow ponds, but requires very careful terracing, plowing, planting, weeding,

water control, and harvesting, most of which had to be done by human labor. In addition to rice, Chinese farmers also grew tea bushes and mulberry trees, whose leaves fed the silkworms for the silk industry. In return for more intensive labor inputs, the land produced ever more abundant yields per acre. As its population grew, China became the wealthiest and technologically most advanced civilization in the world, producing such innovations as paper, printing, paper money, and (later) the compass, oceangoing ships, and gunpowder.

A different kind of agricultural and technological revolution occurred in the Middle East from the seventh to the fifteenth centuries. The Arabs, a desert people, had domesticated the camel for use in regions too dry for horses. In the seventh century, they conquered the Middle East and North Africa. With a long tradition of trade, they welcomed and protected merchants and sailors. They rebuilt the irrigation works of Egypt and Mesopotamia and introduced several useful devices such as the *saqiya* (a chain of buckets) and the *qanat*, or underground tunnel, to carry water over long distances. They also introduced citrus fruits from China and sugar and cotton from India to the Mediterranean world.

European agriculture lagged far behind agriculture in China and the Middle East, especially after the collapse of the Roman Empire after the fifth century. Yet Europeans created several ingenious innovations that allowed them to populate the western and northern portions of the continent, which the Romans had found uninhabitable. One was the three-field rotation system, whereby fields lay fallow one year out of three, instead of every other year as in earlier times, resulting in a 50 percent increase in productivity. Another was the iron horseshoe, which prevented horses' hooves from wearing out in wet weather. A third was the horse collar, which allowed a horse to pull much heavier loads than the throat strap used by the Romans. Europeans were also quick to adopt water wheels and windmills as sources of energy to grind grain, saw lumber, crush ores, and accomplish other tasks. While the yields per hectare in Europe in this period could not compare with those in China or

the Middle East, the result of these innovations was to make the yields per person the highest in the world.

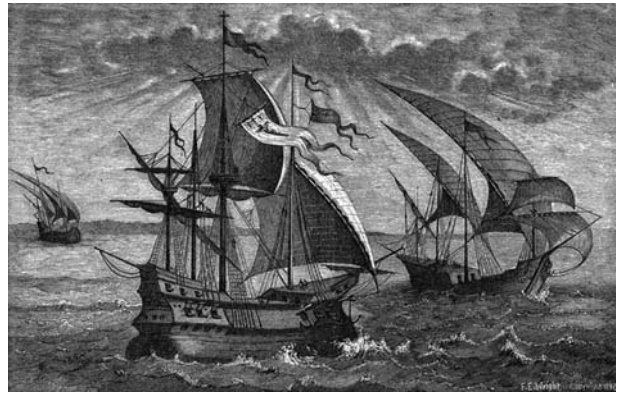
Technologies of Global Interaction

Ocean-going ships carried not only men and trade goods, but also animals and plants from one place to another. Domesticated plants and animals have been essential technologies since the Neolithic, requiring knowledge and skills to grow or breed them and to transform them into foods and fibers. From the beginning of agriculture, plants and animals had been transferred within the Eastern Hemisphere and also, with more difficulty, within the Americas. The voyages of the fifteenth and sixteenth centuries allowed transfers between the Old World and the New. The Europeans brought with them wheat, rice, sugar, and cotton, along with many fruits, vegetables, and trees. From the Americas they returned with corn, potatoes, and tobacco, among others. The Portuguese transferred cassava (manioc) from Brazil to Africa and Indonesia.

Europeans also brought their animals with them wherever they went. Pigs and cattle ran wild in the Americas. Horses were used by Europeans and by the Plains Indians of North America. The New World had almost no animals to offer in exchange, however. Introduced crops and animals increased the food supply and contributed to the rise in population around the world. In the process, they accelerated the transformation of local environments and the destruction of native plants and animals. In the fifteenth century, improvements in ships and navigation led to the diffusion of other technologies around the globe. Let us consider two important technologies with global repercussions: navigation and gunpowder.

Navigation

People had long navigated on rivers and lakes and along seacoasts. Humans reached New Guinea and Australia tens of thousands of years ago. Malay people from Southeast Asia migrated to Indonesia and reached Micronesia and New Caledonia by 2000 BCE.



Columbus's *Santa Maria*, *Nina*, and *Pinta* are perhaps the most famous examples of the popular caravel ship design, used by Portugal and then Spain for exploration and trade. New York Public Library.

Others crossed the Indian Ocean to Madagascar. They learned to navigate by observing the stars, the sun, and the moon and by feeling the ocean swells. Gradually, they ventured out into the Pacific Ocean in dugout canoes equipped with outriggers and triangular “crab-claw” sails, finally reaching Hawaii and New Zealand. The peoples living along the Mediterranean Sea, by contrast, did not develop oceangoing vessels. Their cargo ships were broad-beamed with a square sail and could sail only in good weather and preferably with the wind. Their warships were propelled by oarsmen and were designed to ram and board enemy ships. Neither was suited to travel on the Atlantic.

The Indian Ocean lends itself to regular navigation because of the monsoons that blow toward Asia in the late summer and autumn and away from that continent in the winter and spring. In the early centuries of the common era, Arabs, Persians, and Indians built dhows, small sailing ships made of teak planks sewn together with coconut fibers with a lateen, or triangular sail, that could sail at an angle to the wind. The prosperity of the Indian Ocean trade was the envy of both Chinese and Europeans.

Beginning in the Song dynasty (960–1279), the Chinese developed a kind of ship called a junk, with a flat bottom, bamboo sails, and a sternpost rudder. Captains were equipped with magnetic compasses and charts of the waters they sailed in. Between 1405 and 1433, the Chinese government sent seven expeditions to the Indian Ocean. The first included 317 ships, some of which were 120 meters long and 48 meters wide. With the largest ships and the most



A freight train crossing a fill. New York Central Railroad.

powerful fleet in the world, the Chinese could have explored all the oceans of the world. But when warfare with nomadic tribes from Mongolia absorbed the government's resources and attention, the government ended the expeditions and prohibited ocean navigation.

Meanwhile, Europeans were becoming more adept at navigation. By combining the best features of the Mediterranean oared galleys and the round-hulled sailing ships of the North Sea, the Portuguese created a ship called a caravel that had both square and lateen sails and a sternpost rudder, and that could be sailed in any wind with a small crew. During the fifteenth century, they figured out the wind patterns of the Atlantic. With such ships and knowledge Christopher Columbus (1451–1506) crossed the Atlantic in 1492, and Vasco da Gama (1460–1524) reached India six years later.

Gunpowder

Gunpowder was first used in China in the thirteenth century for flame throwers and fireworks. In the fourteenth century, Europeans and Turks began casting large cannon that could hurl iron cannonballs and destroy the walls of fortified cities. Artillery gave a great advantage to centralized states like those of the Ottoman Turks, the Mughals in India, and the czars of Russia. Western Europeans were the first to build smaller naval cannon and ships strong enough to

withstand the recoil of guns in battle, and with these they quickly dominated the Indian Ocean and the waters off East and Southeast Asia.

The Industrial Age (1750–1950)

Beginning in the mid-eighteenth century, a new set of technologies, which we call industrial, began to transform the world. Industrialization had five defining characteristics: an increased division of labor; the mechanization of production and transportation; energy from fossil fuels; mass production of goods and services; and the diffusion of practical knowledge. Each of these had been tried in various places before—for example, books were mass produced from the sixteenth century on—but it is the combination of all five that defined true industrialization.

Industrialization began with the British cotton textile industry, which used machines powered by flowing streams to produce cloth in large quantities at low cost. At the same time, abundant coal was used to produce cheap iron. The most spectacular invention of the eighteenth century, and the one that distinguished the British industrial revolution from all previous periods of rapid change, was the steam engine, improved by the condenser James Watt (1736–1819) patented in 1769. By the mid-nineteenth century, steam engines were used to pump water, turn machines, and power locomotives and ships.

The new industrial technologies spread to other countries, but very unevenly. Western Europe and northeastern North America soon followed Britain's lead, but the rest of Europe and Russia lagged behind until the late nineteenth century. India and Latin America imported machines and technicians, but not the engineering culture that would have lessened their dependence on the industrial nations. Of all the non-Western nations, only Japan began industrializing before 1900.

Meanwhile, a second wave of industrial technologies appeared in the late nineteenth and early twentieth centuries, mainly from Germany and the United States. Inventors found ways of mass-producing steel—formerly a rare and costly metal—at a cost so

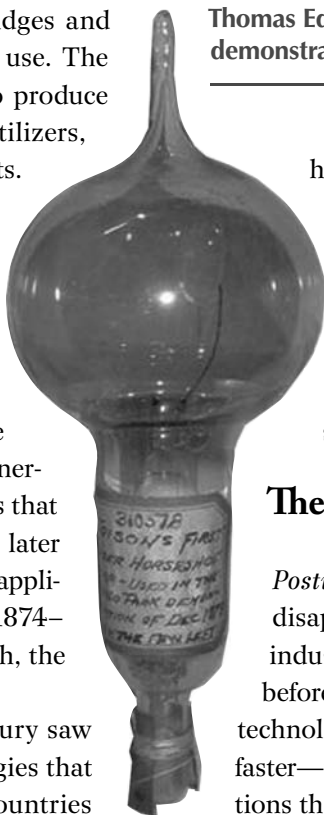
low that it could be used to build bridges and buildings and even thrown away after use. The German chemical industry, founded to produce synthetic dyestuffs, expanded into fertilizers, explosives, and numerous other products. Electricity from batteries has been used since the 1830s to transmit messages by telegraph, but after 1860 generators and dynamos produced powerful currents that could be used for many other purposes. In 1878, Thomas Edison (1847–1931) invented not only the incandescent light bulb, but also the generating stations and distribution networks that made electricity useful for lighting and later for electric motors, streetcars, and other applications. In 1895, Guglielmo Marconi (1874–1937) created the first wireless telegraph, the ancestor of radio.

The beginning of the twentieth century saw the introduction of two other technologies that revolutionized life in the industrial countries and, later, in the rest of the world. In 1886 Karl Benz (1844–1929) and Gottlieb Daimler (1834–1900) put an internal combustion engine on a “horseless carriage.” In 1913 Henry Ford (1863–1947) began building his Model T on an assembly line, making cars so inexpensive that even workers could afford them. By the 1920s, automobiles were common in the United States. After the mid-century, they became common in Europe as well.

The other revolutionary invention was the airplane. The brothers Wilbur (1867–1912) and Orville (1871–1948) Wright were the first to fly in 1903. They were soon followed by others on both sides of the Atlantic. From the 1950s onward, flying became a common means of transportation around the world.

In peacetime, mass production meant mass consumption of cotton clothes, railroad transportation, automobiles, and other consumer items. But industrial production also made possible mass destruction in two widespread and murderous World Wars and in the annihilation of entire populations. Yet even after the most destructive wars in history, the nations that

Thomas Edison’s first light bulb “lit up” publicly at a demonstration in Menlo Park, 1879.



had suffered the heaviest damage—Russia, Germany, and Japan—were able to rebuild remarkably quickly. Industrialization spread more slowly to South Asia, the Middle East, and Latin America, and has not yet begun in earnest in most of Africa. The industrial world is still an exclusive club.

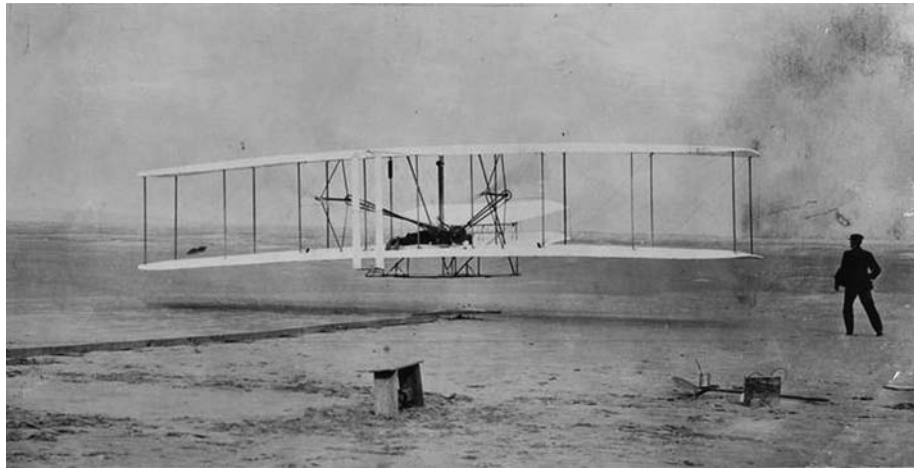
The Postindustrial World

Postindustrial does not mean that industry is disappearing; on the contrary, there is more industry producing more products than ever before. Yet we are clearly in the midst of another technological revolution, as dramatic—but much faster—than the agricultural and industrial revolutions that preceded it.

The new revolution involves many technologies that can trace their origins to World War II. In that war, governments understood that their hope of victory rested on developing new weapons and other military technologies. Such research programs were extremely costly, yet invention



The first Model T Ford, 1908, was so inexpensive even factory workers could afford to buy one.
New York Public Library.



The Wright Brothers' 1903 airplane. United States National Museum, Washington.

proceeded at an accelerated pace that would not have been possible if governments had relied on private enterprise. This realization led governments to continue funding research long after the war was over.

War-Related Technologies

The most dramatic invention of the war was the atom bomb, built by the United States between 1942 and 1945. After the war, the Soviet Union also built atom bombs, which were followed in the 1950s by the far more powerful hydrogen bomb. Nuclear energy was not limited to bombs. Nuclear reactors were harnessed to produce electricity and to power submarines and other ships.

In 1957, the Soviet Union launched the first artificial satellite, *Sputnik*. The rocket that hoisted it into orbit was based on the V-2 missile built by Germany during the war. *Sputnik* was the precursor of thousands of satellites put into space for espionage and surveillance, television broadcasting, and telecommunications. The most spectacular event of the space age was the Moon landing of 1969, proof of humankind's growing power over the natural world.

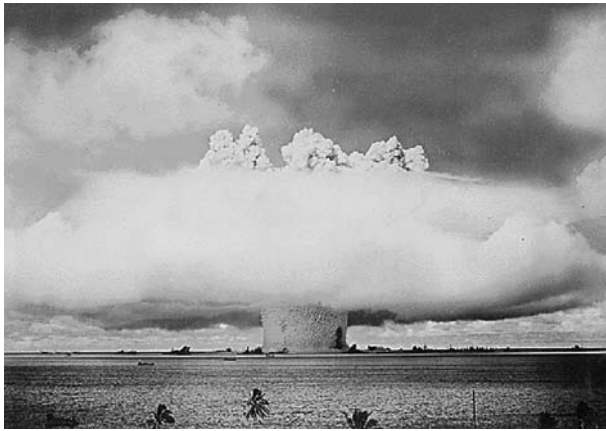
Electronics

Future historians will no doubt consider the new electronic technologies even more revolutionary than nuclear and rocket technology. Television, still experimental before the war, became a consumer item in the 1950s in the United States and in the 1960s in

Europe and Japan. Radar, developed during the war for military purposes, later served civilian aviation, navigation, and law enforcement. Computers, also invented during the war, became important business tools with IBM's System 360 in 1964 used in the banking, insurance, and retail industries, among others. Apple made the first popular personal computers in the late 1970s, but was soon overshadowed by IBM and a host of smaller companies that purchased operating systems and programs from the giant of the software industry, Microsoft. In the mid-1980s, the Internet began linking computer networks around the world. The World Wide Web, introduced in 1991, made it possible to send images as well as text, and made the Internet so user-friendly that companies soon used it to advertise and sell their products. Most computer hardware and software originated in the United States, but the manufacture and marketing of consumer electronics was dominated by Japanese companies.

Biotechnology

Biotechnology is another area that has seen rapid technological development. In 1953, James Crick and Francis Watson discovered DNA, the substance that encodes all the information needed to create living beings. Their findings promised advances in medicine, agriculture, and other fields. In the 1970s, agronomists created more productive hybrids of rice, wheat, corn, and other crops: the Green Revolution. Since the mid-1990s, genetically modified organisms have confronted nations and their farmers and consumers



The mushroom cloud resulting from the nuclear bomb detonated during a test at the Bikini lagoon, 25 July 1946.

with a controversial trade-off between present benefits and future risks.

Technology and the Future

The power of humans over nature has increased at an accelerating rate. Now humans are capable of extraordinary achievements, but also extraordinary damage to one another and to the planet. Advances in computers and communications will soon offer those who can afford them instant access to every text, film, or piece of music, and will enable powerful governments to track every vehicle and perhaps every person on Earth. Nuclear power has the potential to replace fossil fuels, but its exploitation also makes possible the creation of dangerous weapons, which may fall into the hands of desperate individuals. Biotechnology promises better health but also the manipulation of all forms of life in ways never imagined; cloning in particular is a headline-grabbing new technology fraught with difficult social and moral implications. These technologies and others not yet imagined are double-edged swords for those who possess them. Meanwhile, those who have no access to modern technologies—half or more of humankind—are no better off than they were a thousand years ago.

Daniel R. HEADRICK
Roosevelt University, Emeritus

See also Agricultural Societies; Automobile; Aviation; Communications Media; Domestication, Plant and Animal; Energy; Green Revolution; Horses; Industrial Revolution; Iron; Navigation; Nuclear Power; Plows; Printing; Radio; Roads; Scientific Instruments; Technology—Computer; Technology—Firearms; Telegraph and Telephone; Television; Water Management

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Telegraph and Telephone

The telegraph and the telephone are communications media that transmit messages by coded signals. The telegraph conveys written messages and the telephone transmits voice. Both media developed rapidly in the nineteenth and twentieth centuries and form the foundation of the electronics revolution of our time.

The technology to send messages by means of coded signals developed with great speed in the nineteenth and twentieth centuries; the telegraph and the telephone marked the advent of the electronic communication capabilities we take for granted today. But well before the eighteenth century, attempts were made in many parts of the world to use visual telegraphy—messages sent over long distances using such media as smoke signals, fires, and mirrors, usually in one direction only—to warn of approaching enemies. During the French Revolution, Claude Chappe (1763–1805) devised a system of articulated beams and arms that could be moved to indicate numbers, letters, or phrases in a code book. These devices were placed on towers situated approximately 5 to 10 kilometers apart. After the success of their first line in 1794, the French government built a network across France and into neighboring countries. Similar systems were built in other countries, but only over short distances. At the same time, officers of Britain's Royal Navy developed a new system of flags and code books that allowed two-way communication between ships. These were the first systems that could freely send messages over long distances in either direction. Thus in 1794, the French government in Paris received news of the victory of its army at Condé within minutes of the event, and at Trafalgar in 1805,

Admiral Nelson was able to obtain information and control his ships during the course of the battle.

Early Electric Telegraphy

In the late eighteenth and early nineteenth centuries, many inventors tried to send messages over wires by electricity. The electric battery, invented in 1800, and the electromagnet, developed in the 1830s, made such a project possible. In 1837 two Englishmen, William Cooke (1806–1879) and Charles Wheatstone (1802–1875), patented a system that used six wires and five needles (later reduced to two) to point at letters and numbers on a board. Their system was installed on railroad lines in Britain. That same year the American Samuel F. B. Morse (1791–1872) patented a code of dots and dashes that could send signals over a single wire. He opened the first electric telegraph line in the United States, from Washington to Baltimore, in 1844.

Electric telegraphs were an instant success in Europe and North America. By 1848, all the cities of North America east of the Mississippi were connected by telegraph wires. The Western Union Company, founded in 1856, quickly dominated the North American telegraph industry. By 1861 its lines connected San Francisco with the East Coast, and it was planning a land line to Europe via Alaska and Siberia when the Atlantic cable made such a line unnecessary. European governments either started building telegraph networks or bought out the first companies. To connect their various national networks, several European countries, later joined by others, formed the International Telegraph Union in 1865.

Invention is the mother of necessity. • **Thorstein Veblen (1857–1929)**

Telegraphs were so indispensable to the safe and efficient operation of trains that railway companies gave free right-of-way to telegraph lines in exchange for free service. Telegraphs were valuable business tools, conveying commodity and stock prices and other time-sensitive information. They were also used by newspapers, which competed by presenting the latest dispatches bought from the Associated Press (founded in 1848), Reuters (1851), and other news agencies. Governments also made use of the telegraph, especially in times of war and other emergencies.

Outside of Europe and North America, progress was slow. Colonies of the European powers, such as India and Algeria, got their first telegraph lines in the 1850s, as did several Latin American countries and the Ottoman Empire. In China, Africa, and much of the Middle East, governments were reluctant to admit this new form of Western intrusion. Environmental conditions and popular resistance often made it difficult to install and maintain telegraph lines.

Later Electric Telegraphy

Telegraphy continued to advance technologically until the mid-twentieth century. Beginning with a line across the English Channel in 1851, entrepreneurs laid insulated cables across seas and oceans. After several spectacular failures, the technology was finally perfected in 1865 and 1866 with the laying of the first successful transatlantic cables. That success encouraged entrepreneurs to lay cables in other parts of the world: from Europe to India in 1870, to Australia, China, and Latin America in the early 1870s, and around Africa in the 1880s. By the end of the century, all the continents and major islands were connected in

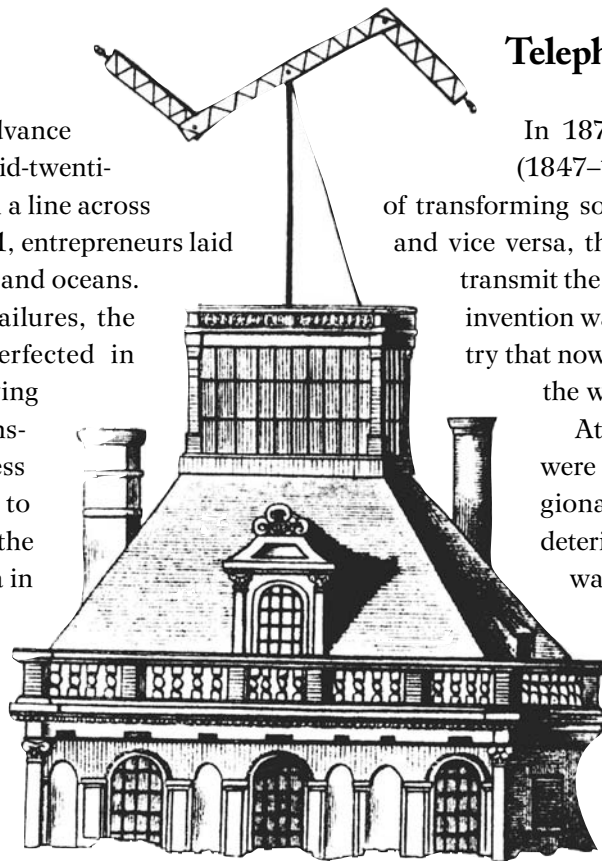
a global network dominated by Western Union and the Commercial Cable Company in the North Atlantic and elsewhere by a British firm, the Eastern and Associated Telegraph Companies. The global submarine cable network played a major role in the growth of the world economy and international trade before World War I, during the first age of globalization. That network was also strategically valuable, and gave Britain, France, and the United States a significant advantage over Germany in World War I.

Other advances in telegraph technology improved transmission speeds and reduced labor costs. Thus multiplexing—sending several messages simultaneously over the same wire—was introduced in the 1870s and, starting in the 1920s, automatic teletypewriters and vacuum tube repeaters replaced the manual typing and retransmitting of messages. Facsimile transmissions (faxes) began in the 1930s. By then, however, wired telegraphy had fallen far behind two radically different technologies: telephony and radio.

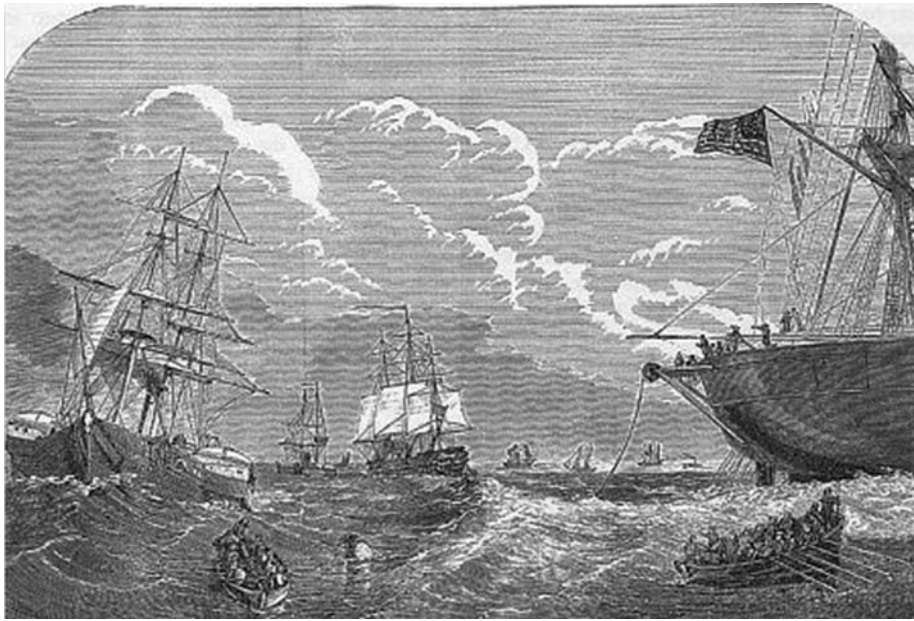
Telephony

In 1876, Alexander Graham Bell (1847–1922) patented a method of transforming sound into electrical impulses and vice versa, thereby making it possible to transmit the human voice over a wire. His invention was the foundation of an industry that now connects people throughout the world.

At first, telephone networks were mainly local or, at best, regional, for transmission quality deteriorated with distance. Service was expensive, as calls had to be switched by operators



The Chappe semaphore telegraph, invented by Claude Chappe in 1792, was used to relay signals over long distances.



Ships attempt to lay a cable across the Atlantic in 1858. Long-term success came in 1866, when a cable successfully connected Ireland and Newfoundland. From *The Atlantic Cable*, by Bern Dibner, 1959. Smithsonian Institution Libraries.

in telephone exchanges. Beginning in the 1890s, rotary dials and automatic switches permitted a great expansion of service without additional labor. In the United States and Canada, many independent companies competed with the giant AT&T (incorporated in 1885), especially in rural areas. In Europe, the government provided telephone service, usually through the postal and telegraph administration. Outside of Europe and North America, telephones were very rare before World War II, usually limited to government offices and major businesses.

In 1915 AT&T installed vacuum tube repeaters on its longer lines, making it possible to connect New York and San Francisco. A dozen years later, it became possible, though it was extremely expensive, to telephone overseas or to ships at sea.

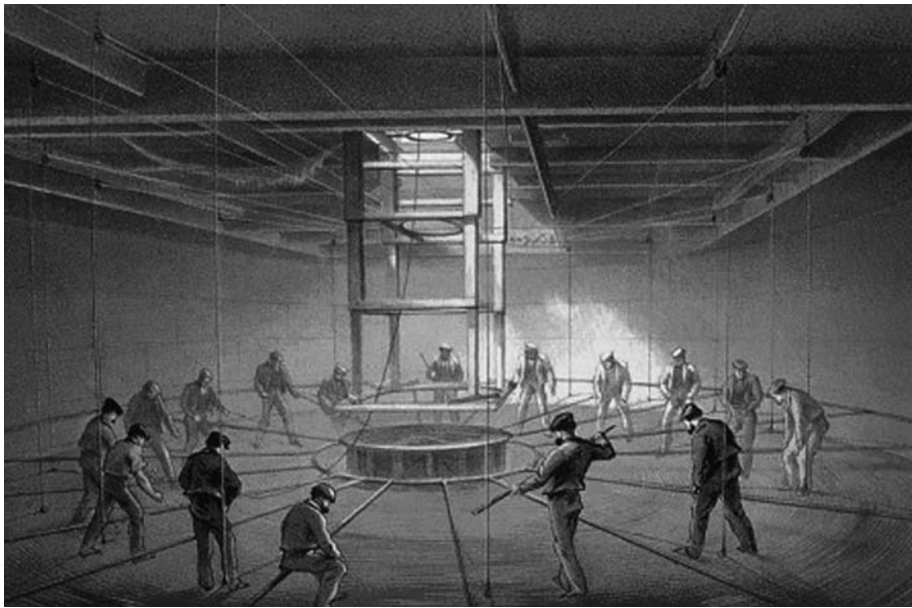
By the mid-twentieth century, the telephone industry, like the telegraph industry before it, had become mature and technologically conservative. In the United States, local telephone service reached all businesses and most families by the 1950s, but long-distance service was still too costly for the majority of users. In Europe and Latin America, the cost of telephone service was out of reach of the working class. Elsewhere, telephone service was a business tool and a luxury for the urban rich.

Then came a series of innovations that revolutionized the industry and its social effects. The first transatlantic telephone cable, laid in 1956, could carry a dozen calls at once; it was soon duplicated

and extended to other oceans. Starting in the 1960s, satellites and inexpensive transmission stations made global telephony cheap and available worldwide by multiplying the number of telephone conversations



Bell, in New York, calls Chicago in 1892. Gilbert H. Grosvenor Collection, Prints and Photographs Division, Library of Congress.



Below deck on the cable-laying ship *Great Eastern*, 1865, where immense coils of cable were stored. From *The Atlantic Telegraph* by W. H. Russell, drawing by Robert Dudley, 1865. Smithsonian Institution Libraries.

that could be sent at the same time. On land, microwave towers dramatically lowered the cost of long-distance communications. Fiber-optic cables, introduced in the 1980s, could carry hundreds of thousands of simultaneous telephone conversations. Long-distance calls, both on land and across oceans, were suddenly as cheap as local calls. From 1960 to 1990, for example, the cost of a call from New York to London fell from thirty U.S. dollars to ten cents a minute.

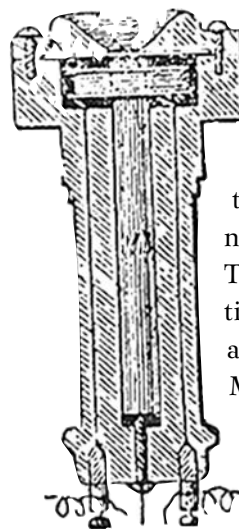
Even as telephony was changing global communications, another series of technological innovations was transforming telephones at the local level. With the computerization of the network, telephones could perform new functions that had not been possible before. Push-button dialing, call waiting, caller identification, and voice mail were among the innovations. It also became possible to use telephones as data communication machines: one could key in numbers to access bank accounts or communicate with programmed answering



machines. The telephone network was also used to carry data between computers, via modems. As with all innovations in electronics, in the advanced industrial countries the initial cost of the new telephony was high but fell rapidly; for their inhabitants, the world soon formed one giant and easily accessible network. Most of the world, however, was left far behind. Today, for example, there are more telephone lines in Manhattan than in all of Africa, and most of the people of India and China have never used a telephone.

Radio Telegraphy and Telephony

The technology of radio began very differently from that of wired telegraphy and telephony, but wireless and wired technologies soon interacted with each other and are now almost indistinguishable. Though there had been scientific experiments before, it was a young Irish-Italian, Guglielmo Marconi (1874–1937), who in



Alexander Graham Bell's telephone.



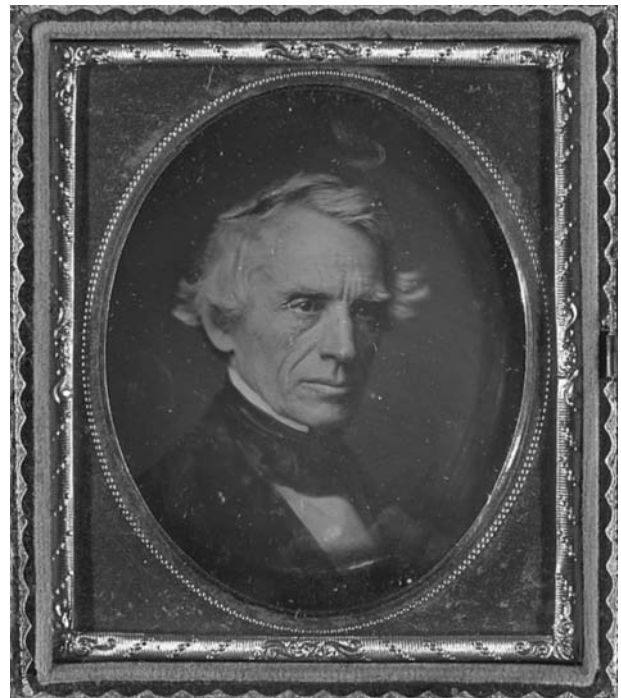
Guglielmo Marconi was the first to use electromagnetic waves as a means of communication.

1895 was the first to use electromagnetic waves as a means of communication. By 1898 he was able to send messages in code over 40 kilometers, and in 1901 he transmitted the letter “S” across the Atlantic. He quickly established a company to communicate with ships at sea and to compete with the cable companies in transcontinental communications.

For the first decade, transmitters used sparks to create radio waves, but soon others invented devices that could transmit not only dots and dashes, but also voice and music. The most important of these was the triode, or vacuum tube, patented by the American Lee De Forest (1873–1961) in 1907. Starting in 1913, it was used in long-distance telephony, then in radio equipment during World War I.

Until the mid-1920s, long-distance radio telegraphy used long waves that required enormous energy-hungry transmitters. Then Marconi and other researchers found that short waves (200 meters or less, or frequencies of more than 1500 kilohertz—more than 1.5 million wave cycles per second) could be produced by inexpensive small transmitters, yet be heard around the world. While the cables and big long-wave transmitters almost shut down, short-wave communication now came within reach of any ship, island, or remote mining camp. In World War II,

short-wave radios were used by both sides to communicate with airplanes, warships and submarines, tanks, and even spies.



Samuel Finley Breese Morse, the inventor of a single-wire telegraph system and Morse code, circa 1845.
Library of Congress.



At the basic and advanced flying school for Air Corps cadets, Tuskegee, Alabama, Captain Roy F. Morse teaches the cadets how to send and receive code. January 1942. U.S. Government.

Microwave radio (with wavelengths measured in centimeters and frequencies of more than 1,000 megahertz—more than a billion cycles per second) found application not only in radar, but also, from the 1950s, as an alternative to copper cables in telephone networks. As mentioned above, microwave radio transmissions, like fiber-optic cables, dramatically reduced the cost of telephone calls.

In the 1990s the combination of computers and microwaves revolutionized the telephone industry yet again. The invention of cell (or mobile) phones made it possible for people to talk to one another or to send brief text messages while walking or driving. As the cost of cell phone service came down to a level comparable to that of wired telephone service, cell phones became among the most popular consumer items in Europe, North America, and Japan.

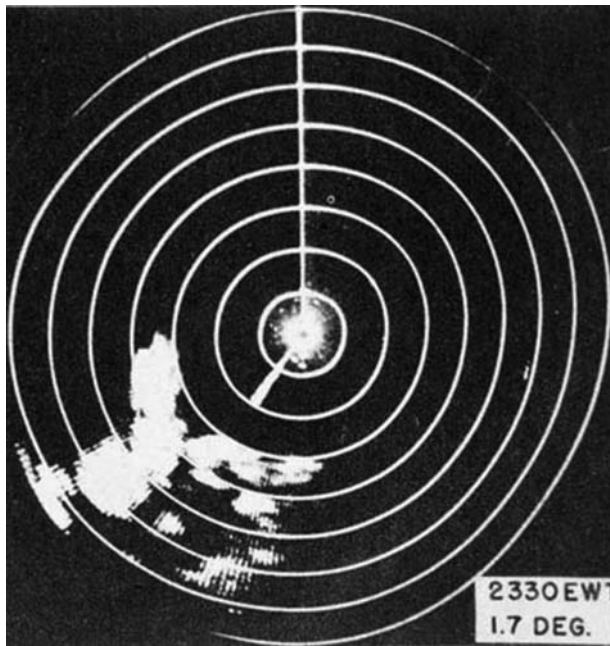
The Future of Telecommunications

Technological revolutions in telecommunications, especially from the mid 1980s onward, have caused turmoil in the industry. Former monopolies such as AT&T in the United States and Canada and the postal, telegraph, and telephone administrations (or

PTTs) in other countries suddenly found themselves seriously threatened, for the first time, by upstart rivals. Money poured into the industry, leading to a stock-market bubble and a serious over-supply of bandwidth and communications channels, followed in 2000 by a recession and many bankruptcies. Expansions and contractions are, however, a normal aspect of business expansion in a free-market economy, one that will benefit consumers in the long run.

Developing countries, meanwhile, are finding it difficult to keep up. While the unit cost of telephone calls are low, the initial investment is enormous, and the technical expertise required to install and maintain computer networks and cell-phone systems is beyond the reach of all but a handful of developing countries. The ones with large populations and economies, like China, India, and Brazil, are keeping up by providing advanced services to certain favored regions and social classes; others are falling behind. Thus, the telecommunications revolution is putting many developing nations at a more serious disadvantage than they were already.

If the recent past is a guide, we can expect as many surprises in the twenty-first century as in the twentieth. Telephone and Internet service will continue



Radar reveals violent thunderstorm activity and heavy rain to the southwest of Spring Lake Army Air Forces Headquarters, August 1945. National Oceanic and Atmospheric Administration.

to penetrate, however unevenly, into the remotest areas of the world; someday, perhaps, everyone will be connected to everyone else. The quality of telecommunications is also likely to change, perhaps with the introduction of video on demand anywhere at any time. Those technological marvels, however, are no more likely than the technological revolutions of the past to bring about world peace or alleviate poverty.

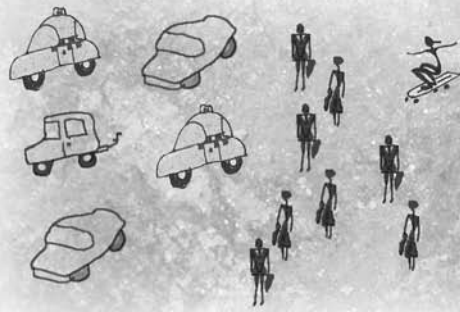
Daniel R. HEADRICK
Roosevelt University, Emeritus

See also Communications Media

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Television

Since television became publicly available in the 1930s as a medium for transmitting and receiving moving images and sounds, its role in the world has become so vast that treating it as a unitary phenomenon with a single line of history is nearly impossible. The technical origins of television can be traced to different parts of the world; its cultural impact can now be felt in every sector of life—for viewers and nonviewers alike.

Television (or TV) is an electronic transmission system that sends and receives visual images and sounds from a source to multiple receivers. The word *television* also refers to the set that receives and interprets the electronic signals of images and sounds. But television is so much more than the technology: television is a phenomenon that has changed the way we experience and conduct so many aspects of life.

The world's first national public television service—its first high-definition service of programs to be delivered on a published schedule—was beamed from British Broadcasting Company (BBC) studios in London, on 2 November 1936. After the BBC correspondent Elizabeth Crowell (BBC 2007) announced, “This is direct television from Alexandra Palace,” (the now-famous landmark where the studios were located), an entertainer sang the following ditty:

The air has eyes that scan us from the skies
And ears that listen from the blue . . .
So you needn't roam
From your own happy home,
The world will pass you in review.

Television was one of the nineteenth century's confident predictions about technology in the twentieth, but it took decades of the new century to reach fruition and only in the second half did it become a global phenomenon. Television transformed political life when it arrived; a new “consumer” economy driven by the all-pervading cultural influences of the West came to depend upon it. The world indeed “passed in review,” but television led to a kind of secondary environment of images in which we all now live.

In the twenty-first century television is undergoing a technological and institutional transmutation. Between the 1950s and 1990s television was organized as a regulated and essentially national medium dependent on the scarce resource of electromagnetic frequencies. At the end of the era it was a medium of abundance, with hundreds of satellite, cable, and digital channels available in every home. These new sources of images, passing through new technologies and produced by a new generation of inexpensive miniaturized equipment, emerge from jurisdictions outside the receiving countries. Television once provided the essence of a nationally authorized culture; now it is inextricably part of an international industry, increasingly beyond the control of governments.

Television's inventors, from the 1890s until the 1950s, thought of the medium as an alternative to radio, theater, or cinema—a new way of delivering information and entertainment—but they had little idea of television capacity to reach beyond those functions. What the inventors couldn't anticipate was that television would become *normative*, that so much of what we view would contrive to suggest how things ought or ought not to be. Television has come to delineate

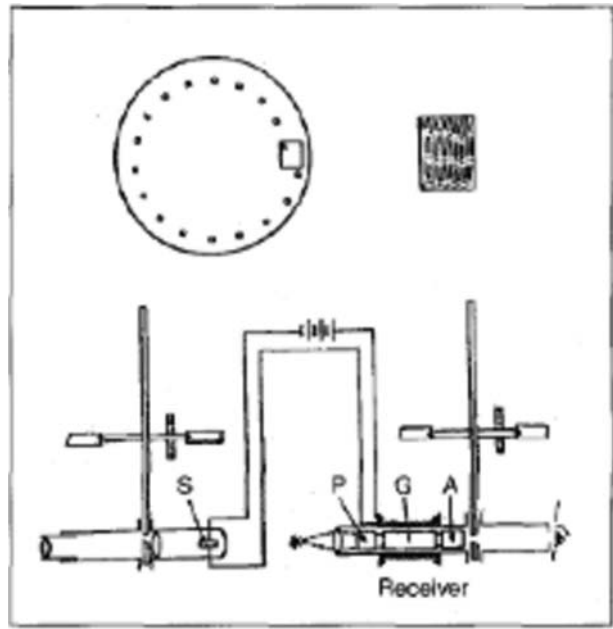
for us the boundaries of transgression; beneath the most routine or trivial entertainment the medium operates as subtle instructor. It offers a continuous flow of experiences from which we have come to draw much of the substance of our identities.

Many have tried (although none have yet succeeded) in distilling the essence and nature of nature of television's influence, but there's no doubt television has changed and altered us. Almost since its inception television has spawned controversy. It may be difficult to trace the ideological influence of a single program but no one denies that television amplifies the processes of change in fashion and ideas, sometimes sparking political uproar. Our most influential images of authority derive from television; it is where we register at various levels of our minds the personae of heads of state, sporting heroes, and celebrities. To use the phrase commonly employed by sociologists, television "sets the agenda."

Television Technologies

Television can be traced to the scientists and engineers from all over the world who tried to send visual images over long distances. In 1873, the British telegraph engineer Joseph May introduced his discovery of selenium rods capable of converting light into an electric signal. Many engineers who dreamed of transmitting moving images welcomed this knowledge, because the photosensitivity of selenium rods meant the possibility of a "picture telegraph."

The scanning disk, proposed by the German inventor Paul Nipkow in 1884, moved the dream a step closer. Although he never built it, Nipkow conceptualized a mechanical television employing two synchronically rotating disks, each with twenty-four holes. (See figure 1.) Once light was projected onto the outer rim of one scanning disk, the light would pass the holes one by one. A selenium cell situated behind the disk generated electric signals and the signal would reconstruct the original image by passing through the other rotating disk. As the rotating disks projected a sequence of signals, the disks would transfer a complete image.



The operation of Nipkow's disks for mechanic television. J. van den Ende, W. Ravestejin, & D. de Wit. (Winter 1997–1998). Shaping the early development of television. *Technology and Society Magazine* 16(4).

Charles Francis Jenkins, the U.S. inventor of the first motion picture projector in 1895, demonstrated to the public the first transmission of a moving silhouette by wireless in 1922. Two years later, John Logie Baird, an engineer from Scotland, was the first to publicly demonstrate a mechanical television capable of transmitting halftone images. Jenkins was granted the first experimental television license from the U.S. Federal Radio Commission in 1927 and began broadcasting simple cartoon programs in 1928. Baird also received permission from the British Post Office to broadcast a short program three times a week with the BBC.

Competition between the Russian-born Vladimir Kosma Zworykin, who applied for a patent in 1923, and the U.S. inventor Philo Taylor Farnsworth, who presented first workable electronic television in 1927, spurred the development of electronic television. Farnsworth's system employed a cathode ray tube, a vacuum tube coated with a phosphorescent material. A cathode ray could move at the speed of light, which solved the flickers from rotating disks. In 1934 Farnsworth developed an all-electronic television employing his image dissector tube at 250 lines per picture and 25 frames in collaboration with Baird

Television is a medium of entertainment which permits millions of people to listen to the same joke at the same time, and yet remain lonesome. • **T. S. Eliot (1888–1965)**

Television Ltd. Meanwhile, Zworykin proposed the iconoscope in 1929, which influenced Electronic and Musical Industries Ltd. (EMI) to build an improved iconoscope tube in 1934.

While the London Television Service sold over 500 televisions a week, the Radio Corporation of America (RCA) and the National Broadcasting Company (NBC) in the U.S. suffered from sluggish sales, largely because of poor resolution. Furthermore, multiple manufacturers in the United States adhered to incompatible standards and the number of available programs was small. In order to set a national standard, the National Television System Committee (NTSC) was formed in 1940 and the next year the Federal Communications Commission (FCC) approved a new 525-line NTSC system as a national television standard. Thanks to improved standards, the industry turned a corner.

The Columbia Broadcasting System (CBS) demonstrated the first color television soon after World War II. This enabled CBS to gain approval of color broadcasting from FCC in 1950. In 1951, RCA and NBC introduced a system capable of complete color broadcasting that was compatible with existing monotone televisions. NBC successfully transmitted the first coast-to-coast color broadcast in 1953. The new system was approved by the NTSC in 1952, forming the basis for all analog televisions in the United States. Canada, several Asian countries, and several Latin American countries adopted the U.S. standards.

Meanwhile, Europe made available two different standards of color television. In 1956, the French inventor Henri de France developed a 625-line standard, ensuring higher resolution than the U.S. system. Germany also employed a 625-line standard adopted by the BBC in 1964. Most European countries (excluding France), several Latin American countries, Australia, the Middle East, China, and several other Asian countries adopted the German system.

Cable television began in 1949 in the United States. The original use of cable was to serve communities with poor over-the-air signals reception. Cable TV adopted a redistribution system with a large community antenna connected by cable to individual

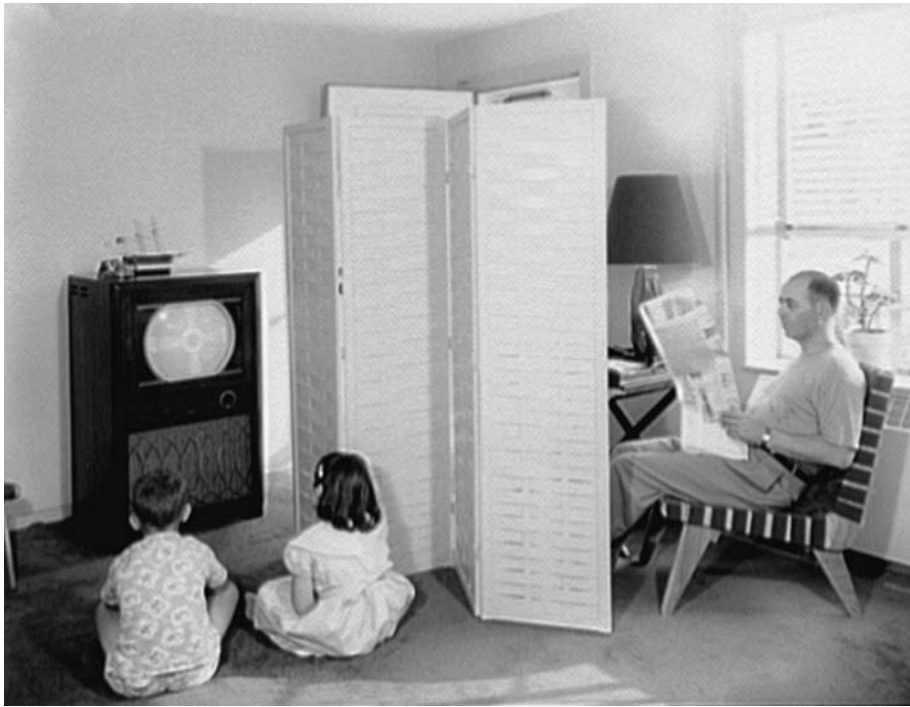
homes. Fiber optics superseded coaxial cable, providing less interference and greater capacity. As capacity increased and cable systems digitalized, cable was capable of handling huge data with high bitrates such as high-speed Internet, telephony (including voice and fax), and on-demand video.

Cable television produced a noticeable impact on the television business model. Using a wire and a set-top box, cable operators can control their service to reach designated subscribers and can provide various television channel tiers with different subscribers at different rates. After the early 1970s when the first pay television network, Home Box Office (HBO), emerged in the United States, the subscription-based revenue model (or pay TV) gained popularity.

Satellite television delivers broadcast signals via satellite. The first commercial communications satellite, nicknamed Early Bird, was launched by the International Telecommunications Satellite Organization (Intelsat) in 1965. HBO began using satellite to deliver its own signal to cable systems in 1976. The first direct broadcasting service, British Sky Television (BSkyB) was opened in 1989 as a free analog service. Two years later, BSkyB launched a subscription-based digital satellite service named Sky Digital. The emergence of satellite television poses a challenge to nation-based regulation systems. Satellite transmissions generated by one country can be received in neighboring countries, posing dilemmas such as programming from one country that threatens the national identity and cultural independence of another.

Digital television is an emerging technology with superior signal transmission. The advantage of digital over analog is to ensure optimal and efficient utilization of spectrum. Digital technology in television systems enables the broadcast of high-definition television (HDTV) and improved sound, the multicast of multiple programs over a single channel, and data communication for interactive web services. Most governments have firm plans of digital conversion for terrestrial televisions.

Digitalization promotes competition in the market in two ways. First, digitalization allows more channels transmitting over limited radio-waves. Second,



Technology has changed the look of the television set (this photo was taken in the 1950s) and the family dynamic as well. Library of Congress.

digitalization of communications infrastructure blurs the border between telecommunication and broadcasting because digital format can be conveyed to any type of digital communication infrastructure, such as mobile phones. Digitalization therefore enables any communication service provider to enter the broadcasting market. Mobile television has become a reality. Thanks to the increasing penetration rate of mobile devices, mobile TV is increasing in popularity.

Television Around the World

Since the first television was introduced to the public, television sets have become ubiquitous in homes, evolving from a novelty to a necessity. Television penetrates over 90 percent of households in the developed world; 99 percent of U.S. households have at least one television set. Viewing time continues to increase. The annual averages of television viewing times per day per household in the United States have steadily increased from 5 hours and 56 minutes in 1970 to 8 hours and 14 minutes in 2006.

As a leading force, U.S. television came to dominate the international market for programs and thus enter deeply into the consciousness of distant societies. In contrast, under the Soviet Union, for decades a

totalitarian system used the medium to sustain itself in power but also undermined itself with the resulting combination of distastes and ennui. But now, in Russia and its former satellites the medium of television may grow into new program industries. Similarly, in China television is growing very rapidly but has yet to exercise a significant influence outside the nation's own borders. The television of Brazil, by comparison, has proven to be a great world influence, but in 1980 it was little known outside a few countries of South America.

The new myth-making of the twenty-first century is as likely to emanate from Russia, Japan, China, or South America as from the United States. There are industrial and investment issues to be resolved but as the medium becomes abundant thanks to inexpensive technology, other more historically rooted factors will come to influence the flows of the marketplace.

Producing and Consuming Television

Between roughly 1940 and 1970, television was a closed and somewhat mysterious medium. Programs were created by small groups of professionals and the public enjoyed access only as passive viewers. Today children learn to use video as a means of self-



expression. In some countries there are neighborhood channels available for almost anyone to use. The great chasm between viewers and producers has in large part dissipated.

“Radio and more especially, television have . . . become the prime instruments for the management of consumer demand . . . The industrial system is profoundly dependent on commercial television and could not exist in its present form without it.” So wrote the economist John Kenneth Galbraith in *The New Industrial State* in 1967. By the 1990s television was ever more dependent on advertising revenue. The launch of mass consumer products has become ever more dependent upon access to television and so in looking at the evolution of this medium one is looking at an unexpected prop for the wider economic system. That provides a further constraint on the culture of the medium and as the audience fragments—and as the larger *social* experience of television disappears—the pressures upon programs to perform economic work grow more severe.

For the first half-century of television the biggest issue was that of the relative legitimacy of public and private control of the medium. Indeed, radio and television together constituted a major battlefield in the fight between three distinct broadcasting “ideologies”: competitive commercial service, license-fee-funded public service, and a mixed policy. The argument has raged for decades as to which most encourages native talent, most strengthens or weakens the medium in the face of government, and is most conducive to the creation of a diversity of programming. The argument has never been won but the new technological opportunities suggest that nowhere can the traditional public broadcasting institutions continue to hold a monopoly. They are destined to face an array of commercial rivals.

In the long run how will television be judged? Some believe the medium has short-changed human society while holding its attention, consuming much energy while ignoring the fundamentals of life. Television has, they insist, touched the audience at the most superficial levels but without seeming to accept responsibility for its own consequences. Others disagree,

saying that television has merely reflected society and should not be blamed for what it has merely observed. But has the medium held a mirror before the object of its gaze or, rather, operated a gigantic reflecting (or deflecting) device, with built-in tendencies to distort? It has made us see but has it made us look deeply? It may have aided the disruption of cultures, but it has helped much in the overthrow of tyrannies. It has wantonly manipulated our wants and distorted our true needs, but it has democratized and leveled, opening the eyes of millions to things of which they had long been deprived. It has reflected ugliness in our world but taught hygiene and brought literacy to rural and urban poor alike.

The professionals of television—celebrities—have become a new kind of priesthood, mediating between events and audiences. As with other priesthoods their power can be exaggerated and perhaps they have encouraged that exaggeration. But as the medium proliferates, cheapens, deregulates, and multiplies the numbers of those who control its message, there could well be a turning point, a global reassessment, leading to major change in the shape of a reaction against the sheer ubiquity and overweening power of the medium.

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This article was adapted by the author from A. Smith and R. Paterson (Eds.). (1998). Television: An International History. New York: Oxford University Press.

See also Communications Media; Mass Media; Technology—Overview

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Thanks to television, for the first time the young are seeing history made before it is censored by their elders. • **Margaret Mead (1901–1978)**

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Terrorism

Terrorism is an organized campaign of violence intended to frighten a particular population, often to further a religious, political, or social cause. Incidents of terrorism are evident throughout recorded history, reaching new levels of intensity in the Middle East after the creation of Israel in 1948, and culminating in the September 11 attacks in the United States in 2001.

The word *terrorism* refers to organized acts of violence intended to frighten others and revenge past, or perceived, injustices suffered by the terrorists or their supporters. Attacks upon a hated rival or unjust ruler are age-old, but such acts become terrorism only when the individual who performs the act does so with the support of fellow sufferers who hope their cause will benefit from the fear terrorism provokes.

The oldest recorded instance of terrorism may be found in the Bible where the books of Samuel and Chronicles refer to wandering companies of prophets who worshipped Yahweh and became the core of the army Saul led against the Philistines and other enemies (1 Samuel 10:26). They fought for Yahweh and the religion of the desert, then being challenged by worship of baals—agricultural deities already established in the land of Canaan. The prophets of Yahweh eventually prevailed, supported from time to time by terroristic acts against enemies like the Amalekites, whom Saul utterly destroyed (1 Samuel 15:20).

In ancient Greece, Harmodius and Aristogeiton, who assassinated the tyrant Hipparchus of Athens in 514 BCE, were later regarded as defenders of liberty and honored with statues, but their motives were probably merely personal. In Rome, the assassination

of Julius Caesar in 44 BCE was justified at the time as a defense of the republican form of government. Augustus, as Caesar's heir, tried to suppress that interpretation of his adopted father's death, but the historian Tacitus makes clear that it lingered among the Roman senators nonetheless.

The Assassins

In other times and places innumerable kings and chieftains were killed by those around them, but when personal fear or hatred was the motive, historians do not consider such murders as acts of terrorism. The first unambiguous example of a prolonged and secret terrorist campaign centered in Iran and Syria among a small number of Shi'a Muslims who rejected the legitimacy of Seljuk Turkish rulers, pinning their hopes on a hidden imam they believed was the sole legitimate ruler. In 1090, the sect seized a mountain fortress in Iran that became their headquarters for planning surprise assassinations of local emirs. It remained in their hands until 1256 when the Mongols captured the fortress and massacred all its inhabitants. The sect enjoyed widespread initial support, but after its leaders persuaded zealous youths to sacrifice their own lives by killing local rulers in the most public and dramatic fashion possible, sentiment eventually turned against them. Popular rumor eventually held that the assassins were inspired by smoking hashish, not by religious faith and hope; Christian crusaders later learned to call the sect "Assassins"—a name derived from the Arabic word for hashish. But, for more than a century and a half, the sect survived and secretly dispatched assassins to kill its enemies—sometimes planting an agent



Atocha Station, Madrid, Spain, is aglow with votive candles lit for victims of the 11 March 2004 terrorist attack on the Cercanías (commuter train) system. Phaestus (www.morguefile.com).

in court years in advance. Consequently, religious terrorism became a reality throughout much of Iran and Syria. Scores of local rulers died of stab wounds inflicted by devotees of the sect, and suicidal killing entered the Islamic tradition to the dismay of almost all constituted authorities.

Religion and Politics

Other religious and political causes subsequently provoked outbursts of directed violence. Throughout the middle ages, the commercial and money lending roles that Jews played in Christian lands created tension between the two communities that sometimes boiled over into violence resembling terrorism. But for all the thousands killed in such outbursts, rulers' need for loans always restored a modicum of peace and order. Heretics, too, like the Cathari of southern France, were objects of attacks and extinctions. Buddhist sects played a similar rebellious role in China and Japan as recently as the eighteenth century, and Hindu sects did not always remain peaceable either. But none of these religious frictions achieved the organized, ongoing character of the Assassins' targeted murders of the high and mighty, aimed at inspiring fear and changing public attitudes.

A closer approximation arose in western Europe after the Reformation when rival Catholic-Protestant movements bred innumerable plots for assassinating rulers. For example, a Catholic assassin shot William the Silent of the Netherlands in 1584 in an age when pistols made killing at a distance much easier than before, while the rivalry between Elizabeth I of England and Mary Queen of Scots generated rival assassination plots (and led to Mary's execution in 1587) across a generation of religious persecution and uncertainty.

More recently, Christian-Muslim frictions played a principal role in nationalist risings within the Ottoman Empire, beginning as early as 1768, and becoming partially successful in Serbia after 1803 and in Greece after 1821, thanks to foreign support from Russia and Western powers. Both sides resorted to terroristic tactics. When Armenians failed to gain effective international support for their national independence at the end of the century, a handful of terrorists launched attacks against Turks. Then, during World War I, the Turkish government decided to drive millions of Armenians from their homelands and inaugurated a massacre of those who failed to escape into Russia. The Armenian massacres of 1916–1918 still remain an acute issue between the two nations.



During the nineteenth century, religious differences ceased to command primary loyalties in Europe, but secular causes soon arose to foment terrorism. Frustrated nationalists, anarchists, and socialists pursued their goals by assassinating officials and rulers or provoking other kinds of violence. Successful terrorist campaigns, like that which preceded the emergence of the state of Israel in 1948, are seldom officially celebrated since established governments fear such attacks. Unsuccessful campaigns last longer and, even when they eventually fade away, may leave heroic memories behind.

Northern Ireland

When the Irish Free State was created in 1920, leaving Northern Ireland (Ulster) subject to the British crown, an angry remnant formed an illegal organization, the Irish Republican Army (IRA), to fight on for a united Ireland. Though it was militarily defeated and its ability to occupy territory ended in 1922, for more than eighty years it organized terrorist campaigns against the British in Great Britain as well as in Northern Ireland, relying mainly on targeted assassinations and bombs timed to explode after those who planted them were safely out of the way. Eventually the anger sustaining the IRA campaign dwindled until its leaders negotiated a stable cease-fire agreement with the two main Unionist parties in 1998. In 2002, Unionists suspended a power-sharing agreement, implemented in 1999, when an IRA spy ring within the Sinn Fein party was discovered. The peace agreement was not renegotiated until 2005, when IRA handed over its arms and formally decommissioned itself. The extreme Democratic Unionist Party (DUP) has remained distrustful that the IRA has irrevocably renounced violence, and a small die-hard faction in Northern Ireland calling itself the “real IRA” has occasionally continued to detonate bombs and kill police officers. Cooperation between all political parties has continued, however, and in May 2007 a governing system in which Unionists and Sinn Fein leaders share power and rule Ireland, while remaining a part of Great Britain, was finally

achieved, and has survived, though precariously, through 2009.

Basque nationalists in Spain and France initiated a similar terrorist campaign for full independence in 1959. Their organization still persists but in recent years fewer bombs have exploded and Basque terrorism may be winding down. Elsewhere in the world, the post-World War II disruption of European empires in Asia and Africa was often hastened by acts of terrorism, and when the colonial rulers tried to hang on, as happened in Algeria and Vietnam, for example, bitter, full-scale wars ensued, featuring acts of terrorism on both sides. Nor have post-colonial Africa, Asia, and Latin America escaped terrorist violence within state borders and across them. In 1994, ethnic strife provoked an outburst of wholesale terrorism in Rwanda, and similar violent clashes are still common in Sudan and Congo, while twenty-six years of terrorist struggle may have ended in Sri Lanka with the surrender of Tamil fighters in 2009. In the Americas, both Colombia and Mexico still suffer from terrorism organized by drug traffickers exporting cocaine and other drugs to the United States.

As long as populations of different languages and customs find themselves living under the same government, nationalist movements are liable to provoke terrorism. As large-scale migration adds new strands to the ethnic mix in the world’s big cities, urban struggles among ethnic groups may become far more violent than when voluntary allegiance to a common national identity was taken for granted.

Social Reform

Anarchist and socialist programs for social reform provided the other principal inspiration for terrorism in the nineteenth and twentieth centuries. Modern anarchism arose from the writings of Pierre-Joseph Proudhon, who coined the term in 1840. It was turned into a movement by Mikhail Bakunin (1814–1876), whose effort to dismantle governmental and other forms of authority attracted considerable support among working men in Italy and Spain. Bakunin advocated violence, and between 1894 and

Everybody's worried about stopping terrorism. Well, there's a really easy way: stop participating in it. • **Noam Chomsky (b. 1928)**

1914 anarchists succeeded in killing a notable array of prominent persons, including the president of France, the king of Italy, and U.S. president William McKinley. But anarchism disintegrated as an organized movement during World War I.

Russian revolutionaries, calling themselves the People's Will, launched a similar outburst of political assassinations in 1878. After killing several high police officials, their success climaxed in 1881 when, after several failed attempts, a member of the organization threw a bomb that killed both himself and Czar Alexander II. Arrests and the executions of suspected revolutionaries ensued. But popular discontent became manifest in 1905, when defeat by the Japanese in the Far East discredited the Russian government, and twelve years later heavy casualties in World War I led to a successful Communist revolution in 1917.

State-Sponsored Terrorism

Despite the freedom and equality that Marxists expected to arise spontaneously when the new government abolished private property, terrorism did not disappear from Communist Russia. It became especially acute when party morale was strained in 1937–1938 by the forced establishment of collective farms and a strenuous campaign to build electric power plants and modern factories. Leading Communists were put on trial and compelled to confess to treason before suffering execution, and many army officers, suspected of disloyalty, were summarily killed as well. No one could be sure a secret denunciation might not provoke sudden death or imprisonment, and, ironically, a chief of the Russian secret police was among those arrested and killed.

Though thousands of innocent persons died, and millions were sent to forced labor camps in Siberia, the terror was successful in the sense that public dissent disappeared, and new jobs created by manufacturing tractors, trucks, and modern armaments won over most of those conscripted for work in the new factories. In 1949, when Communists came to power in China, similar policies were sustained by

comparable terror, especially during the Great Leap Forward of 1958–1960. After taking power in 1975, Marxists in Cambodia went even further by compelling nearly all urban dwellers to endure forced labor in the countryside where about a million died.

Marxists nonetheless viewed official terrorism as a regrettable expedient for suppressing temporary and misguided opposition. That was not true of Hitler and his Nazi followers, whose anti-Semitism inspired the only sustained, bureaucratic, and deliberate effort ever launched to exterminate a whole population. The Nazis kept their plan secret while they transported more than 5 million European Jews and a few other “undesirables” away from their homes and delivered them to death in poison gas chambers between 1943 and 1945. The scale and cold-bloodedness of this slaughter is unmatched, yet, it could be argued that the Holocaust was not terrorism, since it was not primarily intended to frighten Jews or change their ways.

Religious, or ostensibly religious, quarrels assumed a new intensity after the establishment of the Jewish State of Israel in 1948. Millions of Palestinian Arabs were driven from their homes by victorious Jewish armies and long aspire to return some day when Arab armies might come to their aid and destroy the new state. A series of short wars did ensue, and, until very recently, the Israelis were easily victorious.

September 11

On September 11, 2001, Islamic terrorists hijacked four commercial airplanes. Two planes taking off from Boston were flown into the “twin towers” of the World Trade Center in New York City, destroying them; a third, which departed from Dulles International Airport, hit the Pentagon in Washington, D.C., causing extensive damage; the fourth, flying from Newark, New Jersey, probably heading for the White House, crashed in a field in Shanksville, Pennsylvania, as passengers attempted to recapture the airliner from the hijackers who had overtaken the cockpit. The September 11 attacks, the single most successful incident of terrorism in modern history, resulted in the deaths of 2,973 civilians, plus 19 hijackers.



The outrage and fear this incident aroused among Americans is hard to exaggerate. The thousands of deaths, combined with the visceral images of the twin towers burning and collapsing on the nation's TV screens, made indelible impressions. The attack was planned and carried out by a formerly obscure organization, al-Qaeda, headed by a wealthy Saudi native named Osama bin Laden. At the time of the attacks, he was operating in Afghanistan, a guest of Taliban fighters who had recently taken control of the country, where they started to enforce their own extreme version of Islamic law and conduct.

The War on Terror

President George W. Bush (in office 2001–2009) responded by declaring a “War on Terror,” and within months sent U.S. soldiers to Afghanistan where they soon defeated the Taliban but failed to catch bin Laden, who is believed to have fled to the mountainous tribal region between Afghanistan and Pakistan. The War on Terror strained established patterns of American law and justice as the government imprisoned hundreds of suspects for years without formal trial, calling them “enemy combatants,” while authorizing controversial methods of interrogation many labeled torture.

This tangle has yet to be resolved by President Barack Obama. The United States also keeps armies in Afghanistan and in Iraq, where the Bush administration decided to overthrow the existing government on what turned out to be faulty information about weapons of mass destruction. On top of all that, the Taliban have returned to parts of Afghanistan; the U.S.-sponsored governments in Iraq and Afghanistan are dubiously secure, and al-Qaeda continues to operate in the border region between Afghanistan and Pakistan.

So the War on Terror continues with no end in sight. In view of all the grievances that incite acts of terrorism—suicide bombings are the latest and most

feared tactic—winning is inherently impossible, if winning means ending such acts. Instead, more acts of terrorism crop up in almost every country of the world. That is not surprising. Terrorism has existed for millennia; and the fourfold multiplication of human numbers across the past century guarantees that innumerable persons suffer frustration today and are tempted to resort to terrorism tomorrow, being ready, even eager, to end unhappy lives with acts of angry defiance.

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See also Genocide; Holocaust; Religion and War; War and Peace—Overview

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Textiles, the broad term used to encompass the range of material objects created from fiber, cord, fabric and/or string—and manipulated by weaving, tying, sewing, knitting, braiding, and other techniques—have been a part of human culture since prehistoric times. Textiles can be studied to examine not only a peoples’ aesthetic sense and development, but to provide insight about socioeconomic, political, and cultural aspects of their lives.

Prehistoric people all over the world twisted fibers from animals or plants into cordage to bind objects together, knot fishnets, sew skins, and string beads. In many different locations, they looped or interlaced the cordage into fabrics for both utilitarian and decorative purposes. They incorporated designs within the fabric construction or decorated the surface with embroidery or pigments. When worn, these fabrics provided protection from foul weather, insects, and perhaps evil spirits. Cloth also offered wearers many possibilities to express identity and individuality.

Archaeology and linguistics provide evidence of early textile production. Early spinners in many locations developed techniques to make cordage or yarns by twisting animal hair or bundles of fibers from plant stems and leaves. They invented the spindle, a shaped stick with a weight at the larger end, to twist the fibers uniformly and store the spun yarn. Archaeologists seldom find spindle sticks, but often clay or stone weights have survived. Spinners in many countries still hand-spin yarns with a spindle, although some twist long plant fibers into yarn by rolling them on their bare thighs as their ancestors did.

Looms

Early people found a number of ways to arrange the spun yarns into fabric. The earliest extant examples, which date from around 6000 BCE came from a cave in present-day Israel at Nahal Hemar and archaeological excavations in Turkey at Catal Huyuk. The fabrics from these and other early sites contain fibers, like flax, from plant stems. Mesopotamian weavers along



Four-harness floor loom, Saunderstown (Rhode Island) Weaving School.



Embroidery from Bulgaria. University of Rhode Island Historic Textile and Costume Collection, Whitlock Collection 1962.99.293.

the Tigris and Euphrates Rivers wove flax fabrics on horizontal looms. Wall paintings in tombs and three-dimensional funerary models also show Egyptians controlling stiff flax yarns on a horizontal ground loom. Basically this loom had two wooden beams spaced apart with yarns wrapped back and forth between the two beams, which were held in place by pegs beaten into the ground. This set of yarns is called the warp. The Egyptians interlaced another yarn over and under the tightly stretched warp yarns to produce a woven fabric. This intersecting set of crosswise yarns is called the weft. The width and length of the loom determined the size of the fabric. Plant fibers contain mostly cellulose, which does not dye easily, so Egyptians most often used undyed linens. They showed wealth and prestige by the fineness of the yarns and the whiteness of the fabric.

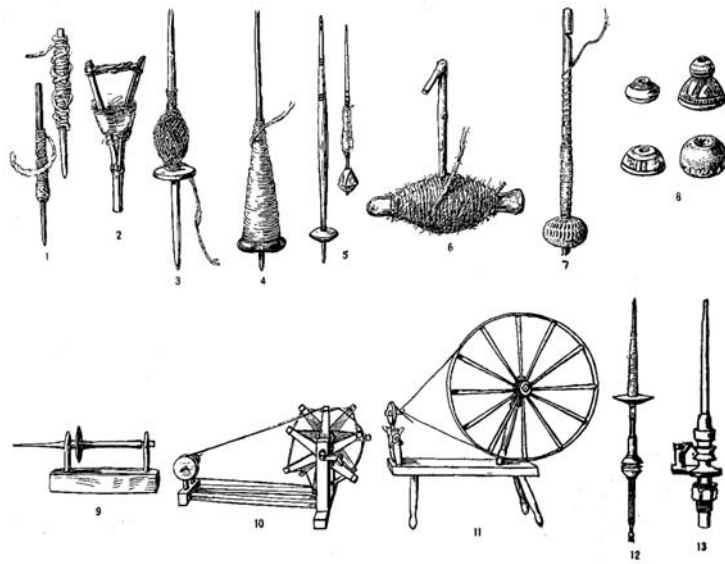
Early weavers north of the Mediterranean developed a vertical loom by suspending the warp yarns from a horizontal beam held by upright supports on either side. The warp yarns hung down from the beam. To provide order and tension, the weavers tied the lower ends of the warps to clay or stone weights. The weaver then interlaced the weft yarns beginning at the top of this warp-weighted loom. Archaeologists have found loom weights dating as early as Neolithic times in Crete, Greece, Switzerland, Hungary, Romania, Bulgaria, and Yugoslavia. Discovering a row of weights between two postholes provides clear evidence that people wove on vertical looms even when no yarn or fabric remains.

Figurines, wall paintings, pendants, and extant textiles from Egypt to China show the development of other types of looms. Most often the spinners and weavers depicted are women, who could combine these tasks with childcare. Over time in many locations, women produced textiles for domestic use; men became more involved when the cloth had potential for trade. Textiles have been a major trade commodity since ancient times, making a significant contribution to the economy of many areas.

Fibers

As sheep became domesticated around 4000 BCE, weavers produced fabrics containing wool yarns. Sumerian cuneiform tablets recorded information about sheep breeds. Wool is a protein fiber and is easily dyed, and Mesopotamian figures and wall paintings show colorful fabric patterns. Wool had limited use by pharonic Egyptians, but in the New Kingdom, they wove hieroglyphic designs in linen fabrics. The tomb of Thutmose IV contained examples of this tapestry weaving with weft yarns woven in only where their color is needed. They are tightly packed, obscuring the warp yarns. Later Egyptian Christian Coptic weavers expertly used this discontinuous weft-faced tapestry weave to create pictorial textiles. The Coptic influence is particularly obvious in surviving Syrian, Byzantine, and Persian textiles. Far Eastern weavers also produced tapestry and figured weaves, but they used different fibers.

Spinners in Tibet and China spun fibers from the stems of hemp plants. People also cultivated hemp (*Cannabis*) in Europe, but whether they used it for cordage or narcotic smoke is undetermined. Wild silkworm grew many places in Europe and Asia, but the moths cut through the cocoons damaging the fine filaments they had spun and leaving very short fibers that made yarn construction difficult. In the production of cultivated silk from *Bombyx mori* moths, the Chinese killed the moths before they could harm the filaments in the cocoons. They unwound many yards of filament from undamaged cocoons. Raising silkworms and their food source, mulberry leaves, is a



This series of drawings shows the variety of implements used over time and across cultures to twist fibers: (1) wooden peg; (2) silk winder (China); (3) spindle with whorl (Native Americans of British Columbia); (4) spindle (Mesoamerica); (5) spindle (Peru); (6) spindle for yak wool (Tibet); (7) spindle (Tibet); (8) simple spinning wheel; (9) early machine spindle (Finland); (10) flywheel spindle (China); (11) simple cotton and wool spinning wheel; (12) saxon spindle of a spinning wheel; (13) spindle commonly used on nineteenth-century cotton-spinning machines (United States).

very labor-intensive enterprise; the process is called sericulture.

The trade of colorful, patterned silk fabrics expanded westward by the late fifth century BCE, and trade routes developed into the renowned Silk Roads. The Chinese traded their silk fabrics but not their production secrets, although by the sixth century CE weavers in the Byzantine Empire were producing *Bombyx mori* silk textiles that all of Europe envied. Mosaics in Ravenna, Italy, show that lavish patterned fabrics were worn in the court of Emperor Justinian and Empress Theodora.

The other natural fiber that clothed East and West, royalty and peasant, male and female was cotton.

Originating in the Indus Valley by the third millennium BCE, cotton is the seed-hair fiber of a bush or tree (*Gossypium*). Like they did with silk, traders took cotton fabrics westward, and archaeologists have found examples at Egyptian and Mesopotamian sites. A number of classical writers described a plant on which “wool” grew and explained that gardeners chose cotton plants because they have blossoms of two different colors, depending on their maturity. Cotton grows in a variety of colors and is easier to dye than flax. Indian dyers perfected the art of coloring cotton. Beginning earlier than 2000 BCE, they made dyes that were colorfast by using mordants, metallic salts that minimize the fading of dyes by light or



Winslow Homer, *The Cotton Pickers* (1876). Oil on canvas. Los Angeles County Museum of Art.



Silkworms eating mulberry leaves. Photo by Paul and Bernice Noll.

laundering. Textile workers in other early civilizations shared the knowledge of mordants, most often using iron and aluminum salts.

Dyes

A significant trade of dyestuffs occurred along the Silk Roads and many other Old World routes. Coloring wool, silk, and cotton yarns and fabrics made them more valuable economically. Dyers played a major role in textile production, although they and their dye pots often had to exist on the fringes of settlements because the fermentation required for plant dyes as well as the use of urine and dung in the dyeing and printing processes gave off unpleasant odors. Early plant dyes included madder—orange-red to purple, depending on the mordant; indigo—blue; safflower—red or yellow; saffron—yellow; and weld—yellow. Like mulberry trees left from futile efforts at sericulture, madder and indigo plants, once a valuable commodity, now grow wild in many places.

Two animal dyes that produced vibrant reds came from a Mediterranean sea snail and a female shield louse that grew on trees. The Minoans of Crete probably perfected and certainly distributed the production of dye from the sea snails around the Mediterranean, although the Phoenicians are given credit for this dye, which is called Tyrian purple. The most expensive ancient dye, it is the color associated with emperors and royal courts. Kermes, the dye from the

shield louse, excelled in dyeing silk and wool. Central and South American dyers also used two similar dyes. They perfected the process of dyeing with the color from a small sac in sea snails and from a louse that lives on cactus plants. The latter, cochineal, replaced kermes and became one of the most valuable New World exports until synthetic dyes began to replace natural dyes in the last half of the nineteenth century.

Historically the dyeing process has not been as simple as dunking a piece of fabric into a pot of dye. Sun-bleaching fabrics to reduce the natural off-white colors required time and space. Dyes and mordants needed preparation, and the multistep dyeing process took days to complete. Dyers were among the earliest chemists, the earliest herbal doctors, and the earliest artists. They colored not only pieces of cloth but also skeins of yarn, which were then woven or braided into colorful patterns.

Patterned Fabrics

Many cultures have produced patterned fabrics for centuries by applying a resist in chosen areas to prevent dye absorption. Resists can be wound around yarns or fixed to a fabric. The Indonesian word for patterned fabrics woven of yarns that have been wrapped in sections to prevent dye penetration is *ikat*. Asian, African, and Guatemalan ikats are internationally fashionable today. Japanese dyers produce a very marketable product called *shibori*, an expertly patterned tie-dyed cloth. African dyers create large tie-dye designs, popular in T-shirts

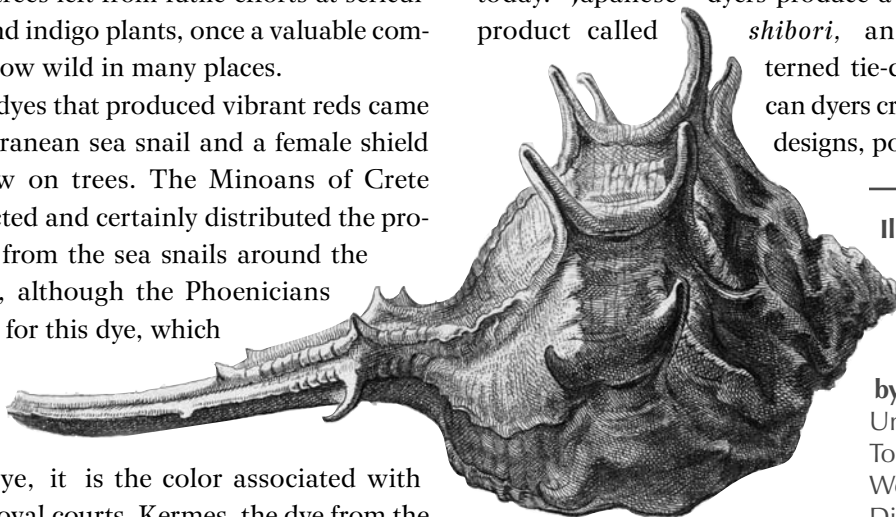
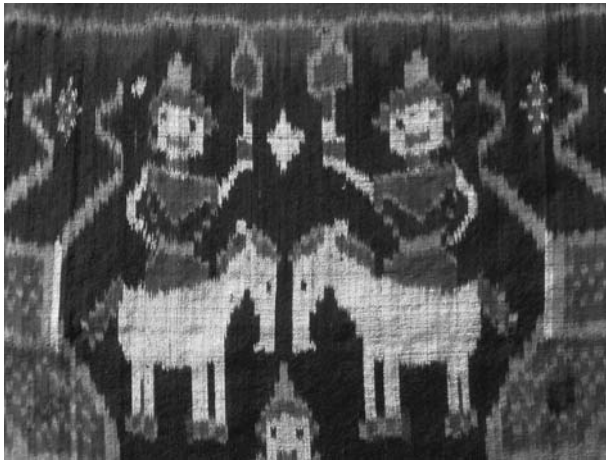


Illustration of a murex shell, the source of a red-purple dye first made by Phoenicians. University of Toronto Wenceslaus Hollar Digital Collection.



Weft ikat from Cambodia. University of Rhode Island Historic Textile and Costume Collection, Donor: Lois Berney, 1999.05.01.

today. Wax or paste resists paint. When blocked onto a cloth before dyeing, it produces a patterned fabric called by the Indonesian word *batik*. Indonesians traditionally use wax to make their batiks; Africans use cassava paste while Japanese make a rice paste. In the eighteenth century, resist pastes included chemicals that prevented a dye from fixing to a fabric. Popular indigo-resist prints in colonial America had large floral patterns influenced by the imported Indian calicoes.

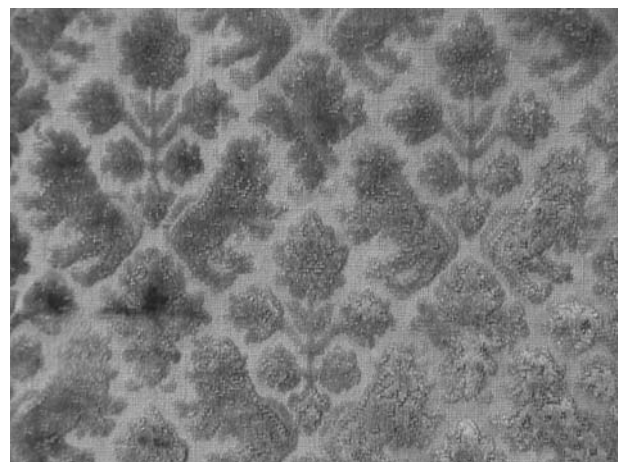
A patterned fabric, even a plaid, offers marketable variations. From the earliest times, weavers devised methods of raising sets of warp yarns before inserting a weft yarn between the warps on a loom. When the weaver raised every other warp yarn, inserted a weft yarn across the width of the fabric, raised the alternate set of warps, and laid in another weft yarn, she produced a plain weave. By varying the pattern in which she raised each warp, she made other weave structures such as twills. The earliest hand-operated mechanism for selectively raising warp yarns was a string that encircled alternate warps connecting them to a rod that could pull them up away from the other set of yarns. The term for the string loops controlling the warp yarns is *heddles*. Over time, improvements to this use of heddles allowed weavers to construct fabrics with complex patterns.

The loom with the most complicated control over warp patterning was developed in the Middle East and Far East, although the Chinese often receive credit for it. The operation of this loom, called a *drawloom*, required two people: one controlled the frames or

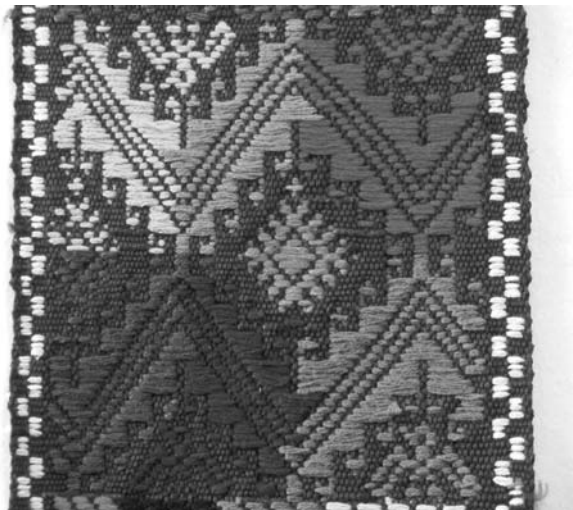
harnesses that held the heddles to make a plain-weave base structure and inserted the weft yarns; the other sat above the loom to control the patterning warps. This second person was often a child; child labor has been prevalent worldwide in the textile industry—in homes, workshops, and mills.

Tapestry-woven fabrics, such as cashmere shawls from Kashmir, are very labor intensive and cannot be made by machines. Weaving mechanically-controlled patterns required less time than tapestry weaving and produced a very marketable product, particularly if made of silk. For a thousand years, Chinese, Japanese, Syrian, Byzantine, and Persian workshops produced exotic figured silks on variations of the drawloom. Competition from Palermo, Sicily, and Lucca, Italy, by the thirteenth century introduced fabrics that evolved into the luxurious velvets of the Italian Renaissance from Florence and other Italian city-states. Many of these fabrics are portrayed in fifteenth-century paintings and tapestries.

The Italians dominated figured-silk production through the sixteenth century, when instead of velvets, fashionable silks had patterns created by colored supplementary weft yarns. Under the guidance of Jean-Baptist Colbert, finance minister under Louis XIV, drawloom weaving in Lyon expanded. By the eighteenth century, Lyon's damasks and brocaded



Italian silk velvet (c. 1500). University of Rhode Island Historic Textile and Costume Collection, Whitlock Collection 1962.99.331.



Brocaded head ribbon (*cinta*) with supplementary weft yarns. San Martin Sacatepequez, Guatemala.
University of Rhode Island Historic Textile and Costume Collection 1997.99.17.

fabrics surpassed Italian production, with some competition from weavers in Spitalfields outside of London. Many Spitalfields textile workers had fled persecution after the revocation of the Edict of Nantes in France, and the demise of textile production in Palermo, Spain, and Flanders was also the result of worker migration caused by political unrest and religious persecution.

Jacquard attachments on looms, a nineteenth century English invention, revolutionized figured-silk weaving, as well as the production of carpets, imitation Kashmir shawls, coverlets, knits, and machine-made laces. Lyon apartment houses with excessively tall ceilings on the top floors reflect the height and light requirements of these looms. This early computerized system used a series of punched cards that determined which warp yarns were raised to create a pattern. This basic system provides control for looms, lace, and knitting machines today.

Jacquard's invention also affected the production of lace, first made by hand in the sixteenth century. Like figured silks, bobbin and needle laces reflected conspicuous consumption by the wealthy. The English development of machines to make knits (sixteenth century) and fine net (late eighteenth century) came before more complicated equipment that imitated handmade lace. Leavers lace machines with Jacquard attachments made the best imitations and still do today in England and France. Raschel knitting

machines make the least expensive modern laces, which are not as durable as other laces because of their looped construction.

Printed Cottons

Another fabric became as valuable as lace and patterned-silk cloth during the seventeenth century. Brightly painted and printed cottons from India appealed to Europeans, and various Western trade companies set up the production of these calicoes or chintzes in East India. To obtain a share of the profits being made on the Indian prints, entrepreneurs in England and France began printing imported cotton fabric. The popularity of the imported and



Cylinder-printed cotton dresses (colored with madder, a plant dye), mid-nineteenth century.
University of Rhode Island Textile Gallery exhibition on natural dyes.



Pigment-printed cotton, Senegal. University of Rhode Island Historic Textile and Costume Collection 2008.04.02.

domestically printed calicoes forced silk and wool producers to seek legislative restraints on the importation, local production, and use of the prints. After the bans were lifted in the mid-eighteenth century, printers, having perfected the use of mordants, sold many yards of block-printed cottons to a public whose desire had not been abated by the legislation.

Laws passed to govern consumer expenditures, called sumptuary laws, have seldom been effective, especially in regulating printed cottons, lace, and figured silks. Whether to protect local production, as in this case, to maintain social order by limiting consumption based on income, or to limit worldly excesses as determined by religious groups, sumptuary laws often fostered the development of illegal methods for consumers to obtain a product.

Christophe-Philippe Oberkampf of Jouy near Paris was the most successful early calico printer. Fast dyes and well-cut blocks brought his manufactory fame and fortune. He was one of the printers in the latter eighteenth century who experimented with faster methods of printing. The result was printing cloth with an engraved copper plate on which the design was incised into the metal surface. Copperplate printing produced large-scale monochromatic patterns with very fine lines, which were not possible with wood blocks. Ever-seeking to increase production, inventors

finally perfected an engraved copper cylinder printing machine through which fabric moved continuously. By the 1820s European and American shops produced printed cottons at price levels all could afford. Inventions by Englishmen John Kay (1733), James Hargreaves (1767), Richard Arkwright (1770s), and Samuel Crompton (1779) greatly increased the production of spun cotton yarn in England. Two Americans also made significant contributions. Eli Whitney's 1793 cotton gin made large-scale cotton production economically feasible. Samuel Slater, who had worked for Arkwright, partnered with two Providence, Rhode Island, merchants and set up a cotton spinning factory in Pawtucket. This manufactory, now the Slater Mill Historic Site, was the beginning of the Industrial Revolution in America.

The Nineteenth Century and After

By the beginning of the nineteenth century, spinning was no longer the rate-determining step in cloth production. Spinning mills in England and southern New England had thousands of spindles. With the perfection of water-powered looms after 1815 and cylinder printing in the twenties, printed cotton cloth that had been available only to the rich in the previous century sold for as little as ten cents per yard. Hand-production of cloth diminished significantly in western Europe and the United States. Dye technology also kept pace with other advancements, the most significant being the discovery in 1856 by William Perkin of mauve, the first synthetic dye. By the end of the century, most classes of dyes recognized today had been developed. Cylinder-printing technology changed little after the mid-nineteenth century and remained the backbone of the industry until rotary-screen printing took over in the 1990s.

An additional change in the 150 years of printing with dyes also occurred then. Improvements in formulations to print pigments that are insoluble in water increased the amount of pigment printing significantly. In the twenty-first century, rotary screen-printing with pigments is economically and environmentally expedient.

Work on good prose has three steps: a musical stage when it is composed, an architectonic one when it is built, and a textile one when it is woven. • **Walter Benjamin (1892–1940)**

The textile world changed irrevocably around 1910 with the commercial production of a filament regenerated from cellulose that came to be known as rayon. With improvements in the strength of rayon filaments and the introduction of acetate in the mid 1920s, the quest for an inexpensive silk-like fiber was accomplished. In the late 1930s, the accidental discovery of nylon led to the first synthetic fiber, which played a significant role in World War II. Polyester in the early 1950s, followed by wrinkle-resistant finishes on cotton, introduced the “wash-and-wear” era. A succession of new fibers, dyes to color them, and finishes to alter their properties continued to invigorate the textile market. New polymers and finishes offer elasticity, superior strength, antimicrobial properties, ultraviolet-light protection, and flame, soil, water, and impact resistance. The future is bright for consumer products and also new applications in the fields of medicine, electronics, aeronautics, and geotextiles.

Textiles have influenced economics, technology, art, religion, government, customs, and many other human endeavors. The production, design, and use of textiles are also a mirror held up to history.

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See also Clothing and Costume

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Thomas Aquinas, Saint

(c. 1225–1274)

ITALIAN PHILOSOPHER AND THEOLOGIAN

Saint Thomas Aquinas represents the culmination of philosophical and theological achievement during the European Middle Ages, and his influence on subsequent generations of Western philosophers and Christian theologians has been profound.

The Italian philosopher and theologian Saint Thomas Aquinas (c. 1225–1274) proved a powerful and influential advocate of the philosophy of the Greek philosopher Aristotle. He was the author of what remains the most comprehensive effort at reconciling reason and religious faith ever attempted by a Catholic thinker.

The son of Count Landulf of Aquino, Thomas was a member of the south Italian nobility. Born at Roccasecca, between Rome and Naples, he received his preliminary education at the nearby monastery of Monte Cassino. In 1239 Thomas's parents sent him to the University of Naples, where he first engaged in intensive study of Aristotle under the scholar Peter of Ireland. During his years at Naples, Thomas made two important decisions: to devote the rest of his life to philosophy and theology and to become a Dominican friar. The two decisions were related because Dominicans were already among the leading scholars of the day. When Thomas became a friar in 1244 he received permission to leave Naples for Paris to study under the renowned Dominican philosopher and scientist Albert the Great (c. 1195–1280).

This move was opposed by his family, who intended for him to become a bishop or the abbot of a prominent monastery. Abducted by his family as he was traveling northward through Italy, he was held

captive at Roccasecca for a year before being allowed to proceed on his chosen path.

Thomas studied under Albert the Great at both Paris and Cologne, Germany, where Albert relocated in 1248 to establish a Dominican *studium generale*, a college for study of the liberal arts. Thomas served as one of his assistants, giving introductory lectures on biblical interpretation. In 1252, his academic apprenticeship completed, Thomas returned to Paris to take up the position of lecturer on the Bible and the *Sentences* of the Italian theologian Peter Lombard (c. 1095–1161), the core textbook of the theology curriculum. He also began to publish his own work and in 1256 was appointed to the position of master of theology, the highest title attainable in the academic hierarchy.

In 1259 Thomas traveled to Italy and remained through 1268, lecturing at Dominican convents and colleges in Naples, Orvieto, and Rome. He frequently attended the papal court, providing his services as preacher and liturgist. He returned to Paris at the height of his reputation but soon found himself embroiled in a major controversy over the proper relationship of philosophy and theology.

Thomas's first major book, a commentary on Lombard's *Sentences*, contains more than two thousand references to the works of Aristotle. Already in his early days as a teacher he had defined his intellectual project: to establish the proper relationship between philosophy and theology. In this pursuit he made use of not only the works of Christian theologians and ancient Greek and Roman thinkers, but also the works of Muslim and Jewish philosophers such as Ibn Sina (980–1037), Ibn Rushd (1126–1198), and

The highest manifestation of life consists in this: that a being governs its own actions. A thing which is always subject to the direction of another is somewhat of a dead thing. • **Saint Thomas Aquinas (1225–1274)**



**Vittore Carpaccio,
St. Thomas of Aquinas
in Glory between
St. Mark and St. Louis
of Toulouse (1507).
Tempera on canvas.
Staatsgalerie, Germany.**

Ibn Gabirol (1021–1058). Thomas argued that both philosophy and faith are necessary to a true pursuit of theology because logical argumentation leads to a more precise and complete knowledge of religious belief. Thomas further held that, even without faith in Christian revelation, the human mind can use rational analysis of observations made through the five senses to attain an incomplete but still extensive

understanding of the being of God and the nature of the rational laws governing the created universe.

While Thomas was in Italy, a group of scholars in Paris called the “Averroists” (followers of Ibn Rushd) were promulgating the position that the truths of philosophy and the truths of religion are equally true, but separate and distinct, because philosophical knowledge derives from rational analysis of human

experience alone, whereas theological knowledge derives exclusively from divine revelation. The bishop of Paris, Stephen Tempier, condemned the position of the Averroists in 1270. Conservative critics associated Thomas with the Averroists because of his devotion to Aristotle, and he had to expend much energy in his final years to carefully distinguish his position from theirs.

In 1272 the Dominicans sent Thomas to Naples to set up a new *studium generale*, but at this point his health began to weaken. He died at the Cistercian monastery of Fossanova while on his way from Naples to Lyons to attend a church council summoned by the pope.

The principal writings of Thomas Aquinas include the *Disputed Questions* (1256–1272); the *Summa contra gentiles* (1259–1265), which provides a detailed defense of the philosophical validity of the Christian faith; and the *Summa theologiae* (begun in 1268 but unfinished at Thomas's death), which comprehensively synthesizes Thomas's rational investigation and logical demonstration of Catholic doctrine. When Tempier condemned the Averroists a second time in 1277, he explicitly included condemnations of several teachings from these works. However, Thomas had many posthumous supporters, including Albert the Great and the Italian poet Dante, who assigned him a privileged place in paradise. Pope John XXII had Thomas canonized in 1323. During the sixteenth century Thomas's *Summa theologiae* replaced Peter

Lombard's *Sentences* as the standard textbook in the theology curriculum of European universities, where his work remained influential well into the 1600s. Thomism has enjoyed a revival since the late nineteenth century, thanks in part to a papal bull (decree) of 1879 encouraging study of Thomas's work, and his brilliant and rigorous application of Aristotelian arguments retains considerable interest for twenty-first-century philosophers.

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See also Roman Catholicism

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Thucydides

(D. C. 401 BCE)
GREEK HISTORIAN

Among ancient historians, Thucydides was the most insightful. He analyzed the effect of the Peloponnesian War (432–404 BCE) on Greek society with apparent detachment and amazing precision, but his cool tone belied a love of Athens and dismay at its defeat. Thucydides wrote his narrative prose in a clear, austere style but is famous for including highly rhetorical set speeches.

The Greek historian Thucydides, and the history he wrote of the war between the Athenians and Spartans in the fifth century BCE, influenced not just the historians from the Greco-Roman world who were to follow him, but also the scholars of the nineteenth century such as Leopold von Ranke (1795–1886), laying the foundations for the modern professional study of history based on the principles of empiricism.

We know very little about Thucydides that he does not tell us himself. He states that he began work on his history when the war started. Although he refers to the end of the war, Thucydides did not live to complete his history. The narrative of the text, known today as *The Peloponnesian War*, breaks off in the middle of 411 BCE, which led ancient biographers to speculate that Thucydides died a sudden death. Most scholars conclude that he died around 401 BCE, though there is disputed evidence that he was still working on his history as late as 397 BCE. His date of birth is conjectural too. Pamphila tells us that at the start of the Peloponnesian War Thucydides was forty, and this is probably a fair guess, based upon his own remarks. Thucydides asserts that he was old enough to follow the course of the entire war and that he was elected as a general by the Athenians for a campaign

in Thrace (in 424 BCE), but was exiled after failing to relieve the city of Amphipolis. He held rights to gold mines in the Thraceward area and was well respected there. He caught but survived the plague of 430–426 BCE, which he described in great detail. His father's name was Olorus and he came from the deme (smallest political unit in Athens, used to identify citizens) Halimous. Marcellinus (who wrote a biography of Thucydides) says that Thucydides's mother's name was Hegesipyle; the name of his father is identical with that of a Thracian prince whose daughter, also named Hegesipyle, married an important Athenian aristocrat named Miltiades. Thucydides was thus related to important members of the Thracian and Athenian aristocracies, including his Athenian namesake Thucydides, the son of Melesias. Plutarch tells us that Thucydides' tomb was in the Athenian suburb of Koile Meletides, next to those of Miltiades and Cimon's sister Elpinice. Thucydides had one son that we know of, named Timotheus.

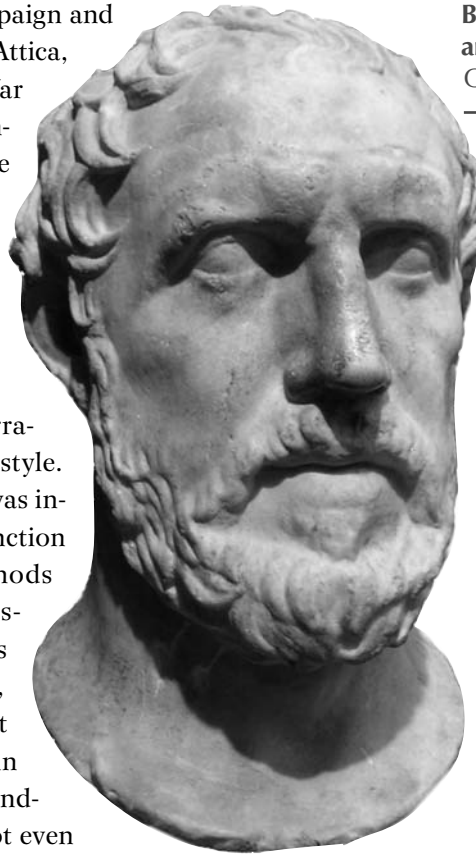
The Peloponnesian War is structured chronologically, with each year of the war described by summer and winter. Since Hellenistic times, the work has been divided into eight books (though in antiquity other divisions were made, including division into thirteen books). Book 1 includes the Archaeology, a brief survey of Greek history down to the Persian wars, the Pentecontaetia, a brief outline of events from the end of the Persian wars (described by Herodotus) to the start of the Peloponnesian War, and a lengthy introduction on the causes of the war. Books 2–4 describe the first ten years of the war (known as the Archidamian War). In Book 5 are the Peace of Nicias, the Mantinean War, and the subjugation of Melos (which includes the Melian Dialogue). Books

The secret of Happiness is Freedom, and the secret of Freedom, Courage. • **Thucydides (460–404 BCE)**

6–7 describe the Sicilian campaign and the renewal of hostilities in Attica, and in Book 8 the Ionian War and the revolt of many of Athens's allies are described. The narrative of the Peloponnesian War was completed by Xenophon, who, in the *Hellenica*, takes up his account at the exact point where that of Thucydides finishes.

Thucydides wrote his narrative prose in a clear, austere style. His historical methodology was innovative, and he drew a distinction between his research methods and those of his predecessors, criticizing Hellanicus by name, and by implication, Herodotus. He tells us that he took great care to ascertain the truth about events by finding reliable witnesses, did not even rely on his own observations, and took into account just how unreliable or partisan his witnesses may have been. He also declares that he has designed his history for posterity, not just for the pleasure of the listener (in his day histories were read aloud to an audience) or to win a particular competition.

Thucydides is famous for the set speeches that he included in his history. These are highly rhetorical, making use of complex abstract expressions and antitheses that often obscure their meaning. Here we see the results of his training under Antiphon, with the rhetoric also owing a great deal to the influence of the sophist Gorgias. It has been argued that these speeches are Thucydides' own free compositions, based upon what he deemed appropriate for the speakers to say in the circumstances. Thucydides himself claims that they were based on what had actually been said, while paradoxically admitting that he made each speaker say what he himself thought that speaker ought to have said.



Bust of Thucydides, historian and ancient Greek general. The Royal Ontario Museum.

Thucydides focused his history on war and politics—establishing these as first and foremost the subject for history. In describing the suffering caused by war and the way in which war destroyed the morals of a society, however, Thucydides moved from narrative of the particular to a general exploration of human nature that makes his history an invaluable possession for all time.

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See also Greece, Ancient; World History, Writing of

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Timber

Timber, or lumber, is wood that is used in any of its stages—from felling through to processing—in the production of construction materials, or as pulp for paper. Timber has been a resource around the world for many centuries in the craft and construct of all manner of objects and utensils, from dwellings to ships to tables to toothpicks.

Since the Neolithic revolution, timber, with its many uses, has been an important commodity in the development of social life. Throughout human history from at least 3000 BCE onward, available forests have been used to meet the needs of an evolving world. Starting from the early urban communities, such as Egypt, Mesopotamia, and Harappa, timber has been a constant feature of economic life. Timber in its many forms has been used as a source of fuel and as a basic material for building construction, shipping, and for storage purposes, such as barrels). In addition to these uses, timber was important to other aspects of human activity, such as in manufacturing and for the extraction of other resources such as coal and ore (timber beams were used in shoring up mine shafts). The level of timber utilization grew in proportion to increases in urbanization, commerce, and population. The increasing size of urbanized communities and growth in population often led to the need to transport resources to feed the growing population centers of the ancient world. Shipping was the normal mode of transportation of these resources. With growing levels of trade, the increase in maritime shipping resulted in further timber consumption. Exuberant lifestyles also developed, leading to the construction of extravagant buildings, such as palaces

and temples, which often required timber for their construction.

These tendencies were pronounced as long as 4,500 years ago. In the riverine valleys of Mesopotamia and the Indus, the Mesopotamians and the Harappans deforested their own hills and mountains, and conducted military campaigns and trade relations with their neighbors to secure a regular wood supply in order to meet their economic needs. The Egyptians, for example, sought timber in neighboring areas of Lebanon and parts of the Syrian coast.

Timber utilization on a similar scale also was practiced in other parts of the world. About 2500 BCE in



Cutting timber in Washington State, 1898. New York Public Library.

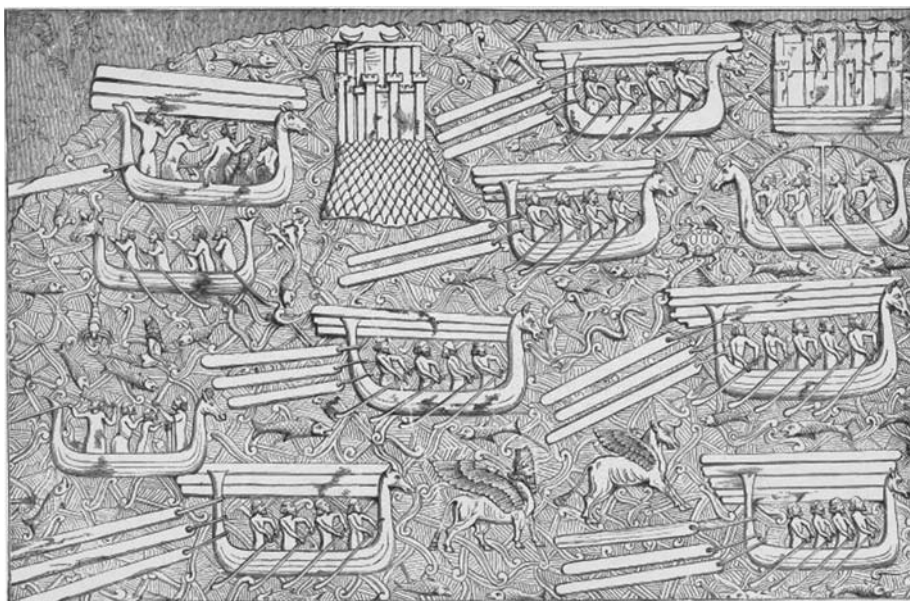


northern China around the Hwang Ho river basin and in Southeast Asia timber was sought to meet socioeconomic needs. The use of wood intensified as the urbanization process progressed globally, with hinterland areas supplying the wood needs of the more economically transformed civilizations, empires, and nation-states. During different time periods, certain areas of the globe were effectively the wood yards of other regions. For example, the North American forests and those of the Baltic shores provided the timber supply for northwestern Europe in the mid-seventeenth century. By the late twentieth century, parts of Africa, Asia, Latin America, northern Europe, and Russia became the main timber sources.

With the advent of agriculture and the urban revolution, deforestation has been a constant feature for at least the last 5,000 to 6,000 years. It is literally as old as the hills. This level of deforestation reached epic proportions by the end of the twentieth century. The size of the world's forests has shrunk by nearly half from 6 billion hectares 8,000 years ago to 3.6 billion hectares presently. According to the World Commission on Forests and Sustainable Development, forests have virtually disappeared in twenty-five countries, eighteen others have lost more than 90 percent of

their forests, and eleven countries have lost around 90 percent. In an attempt to slow deforestation and to help reduce the environmental impact of cutting trees for timber, some states and timber producers have planted special plantations of fast-growing trees specifically so they can be cut for timber. When the trees are felled, new saplings are planted in endeavor to make plantation timber environmentally sustainable. Selective logging of mature trees in a forest of mixed age is another method of combating deforestation.

There is common agreement that deforestation has consequences for human communities. Negative outcomes such as soil erosion and the climatic changes that we are witnessing also occurred in the past. The “modern” problems of soil erosion leading to flooding and silting of rivers and canals also occurred in early Mesopotamia and had a severe impact on economic production. The effects of soil erosion and its consequences also appeared in northwestern India, China, Mycenaean Greece, and Minoan Crete, engendering pressures on these societies and civilizations. Deforestation also has engendered climate changes and precipitation. The removal of the forests cools the lower atmosphere while warming the ground surface. The reduction of evapotranspiration



An illustration of Aramaic bas-relief sculpture from Assyria depicts ships transporting timber, both aboard and towed by rope. New York Public Library.

Out of timber so crooked as that from which man is made nothing entirely straight can be carved. • Immanuel Kant (1724–1804)

causes aridity. Forest loss also means that there is a reduction in carbon sequestration as the trees fix carbon and metabolize carbon compounds. This loss exacerbates the process of global warming. Recent studies have suggested that this process has been an ongoing for at least 6,000 years following the spread of agriculture that had facilitated the removal of the forests.

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See also Climate Change; Deforestation; Paper; Trees

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Time, Conceptions of

Appreciating the diversity and evolution of cultural and scientific views of time—linear time and cyclical time—requires a wide-ranging journey through history to consider how diverse cultures conceived of and measured time. The interplay between the practical ability to measure time with clocks and the abstract concept of time itself is major theme of this article.

We all live in time, but we almost never ask ourselves about its nature. Moreover, people in the industrialized West are generally unaware that their typical understanding of time embodies a set of assumptions (for example, a linear “flow”) that have changed throughout history, are not shared by all cultures, and are even fundamentally at odds with current science.

Cultural Understandings of Time

There are as many conceptions of time as there have been human cultures, but it is common to identify two kinds of time. First, there is linear time, a steady progression from the distant past to the far future. For some, this view is based on Christianity, in which time has both a beginning at Creation and an end at Christ’s second coming; for others, it is based on science, assuming a steady evolution both of knowledge and of life itself. Second, there is cyclical time, where the recurring motions of a clock or the stars do not merely mark off constant intervals, but indicate a repetition of human experience and history. A division between linear and cyclical is nevertheless overly simplistic, just as it would be to identify the

linear with the West and the cyclical with the East. There is instead a continuum of emphasis, so that for example early Chinese writings identify both *ji*, the linear succession from ancestors to descendants, and *li*, repetitive cycles of death and rebirth in the natural world.

Both linear and cyclical time can be seen in any calendar, which reveals not merely the calculations by which a society numbers days and years but also something of how that society understands time itself. For example, the development of the Gregorian calendar is a fascinating thread through history, in which priorities, arguments, and human decisions are revealed in every detail: the names of the months, the date of Easter, and the contortions needed to keep synchrony with the orbit of the Earth. The Mayan calendar intricately interlocks a multitude of cycles, including the 365-day *haab* (the seasonal year) and the 260-day *tzolkin* (itself composed of overlapping cycles of 13 and 20 days), and lists auspicious and ill-fated days for a recurring round of secular and sacred tasks. Indian calendars compose an escalating hierarchy of scales in which a single day in the life of Brahma, the creator god, is equal to almost nine million human years.

Finally, we may also identify a third kind of time, common to many indigenous peoples including those of Australia, North America, and the Arctic. These cultures are often seen as timeless, sometimes on simplistic linguistic grounds. Yet their time may be strictly more intricate than clock time, incorporating a detailed understanding of natural cycles but adding social, spatial, spiritual, and even eternal dimensions.

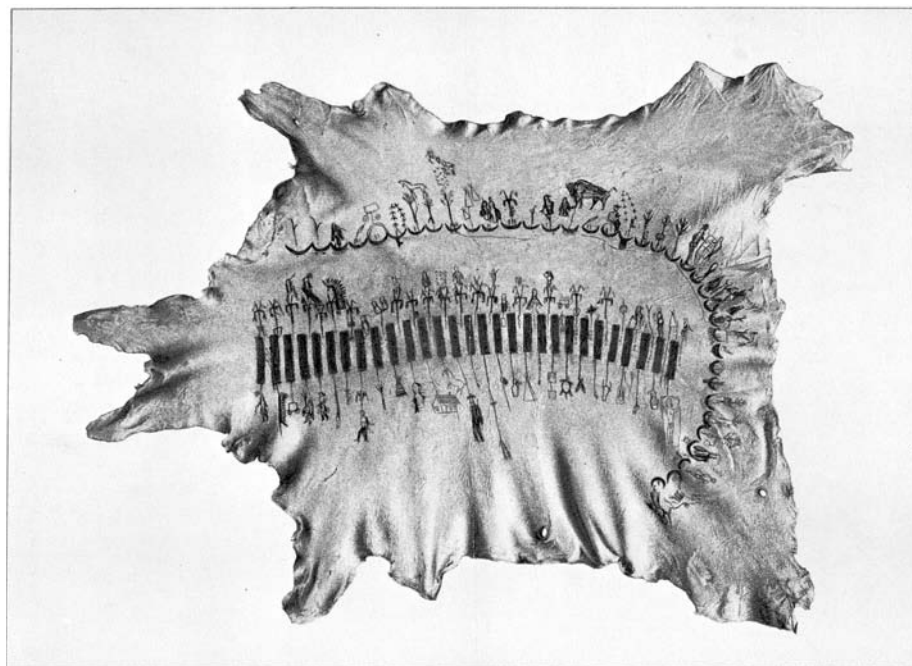
The Value of Time

Early agrarian and seafaring communities were based on a daily and yearly round of chores governed by the land or the sea. There was little need for external or absolute time, only for the knowledge of the appropriate succession of tasks and of the cues to match this sequence to natural rhythms: sowing and harvesting or the ebb and flow of the tides. The duration of an interval was likewise reckoned not in hours, minutes, and seconds but by comparison with common experience: the time taken to boil an egg, say a prayer, or perform a bodily function—for instance a “pissing while—a somewhat arbitrary measurement” (Thompson 1991, 356).

It is often assumed that public time consciousness began with the medieval “hours” of European monastic communities. This daily cycle of liturgical offices was announced by the ringing of bells, and may have been an important influence in the development of the mechanical clock. But hours originated with the Egyptians, who first divided night and day into twelve parts each. The monks only inherited this convention

by way of the Greeks and the Romans, both of which used sundials and clepsydrae (water clocks) to order their society. Even the modern complaint against the tyranny of the clock is not new: “The gods confound the man who first found out how to distinguish hours. Confound him, too, who in this place set up a sundial, to cut and hack my days so wretchedly into small portions!” (Titus Maccius Plautus, c. 254–184 BCE).

There were three key factors in the escalation of time pressure through Western-led industrialization. The first was the development of labor as a commodity, which ascribed a new value to every hour of work for both employer and employee, and created a new distinction between work and personal time. The second was the proliferation of clocks and watches; by the end of the seventeenth century, timepieces were shifting from a luxury affordable only by the wealthy to a convenience available to all. The third factor was the rise of a work ethic which set a moral, commercial, and even theological value on industry and deprecated idleness. Benjamin Franklin most famously and succinctly stated this as “Time is money”: not only is time a currency which we choose how to



A Kłowa (Native American) pictograph calendar on bison skin. The bars and attached figures in the center form a winter count, with each representing one year, while the figures near the edges provide a history of thirty-seven months during the 1890s.

*Time present and time past / Are both perhaps present in time future / And time future contained
in time past.* • T. S. Eliot (1888–1965), from “Burnt Norton” (No. 1 of *Four Quartets*)

spend, but wasted time is unearned money. Nevertheless, one might argue even in the modern age that this sentiment enshrines a capitalist, predominantly masculine view of time, and undervalues the continuing task-oriented round of domestic daily chores often carried out by women.

From Solar Time to Coordinated Universal Time

As late as the turn of the nineteenth century, the only time that mattered was local time. Every town had its own time: solar noon, when the sun is highest, shifts around one minute later for every twelve miles moved to the west (at the latitude of London). Moreover, this apparent solar time varies through the year because of the eccentricity of the Earth’s orbit and the tilt of its axis, sometimes in front of and sometimes behind regular clock time.

The shift away from the sun as primary timekeeper began at the turn of the eighteenth century with the adoption of mean solar time (averaging out the variations of apparent solar time with a clock) and accelerated with the spread of the railways. Before rail, only mail couriers traveled far enough in a single day to encounter the variety of local times. The railway age brought the advent of rapid public travel, timetables, and telegraph cables beside the tracks, providing both motive and means for time to be standardized along the line. Railway companies disseminated their own standards, which were quickly taken up by public clocks; formal adoption of a single standard for legal purposes lagged decades behind. The situation was especially complicated in countries such as the United States, which had many competing interests and a wide geographical expanse.

We are so accustomed to time zones today that it is hard to understand the fierce debate engendered by their proposal as companies and cities fought for commercial and political supremacy. Charles Dowd, an educator from Wisconsin, proposed a zone system for U.S. railways in 1872, but it was not until 1883 that a proposal by William Allen, a U.S. senator, was finally adopted (smaller Britain had adopted



The transmigration wheel of Buddhism shows the six paths of reincarnation. All creatures travel through repetitive cycles of death and rebirth in the natural world.

Greenwich time much earlier, in 1840). Sandford Fleming, a Scottish-Canadian inventor and engineer, argued in 1876 for worldwide rationalization, setting out the key features of the system we use today. Inevitably, the same battles were fought as fiercely between nations, culminating in the Prime Meridian Conference of 1884, which adopted an international system of standard time zones, but more crucially selected Greenwich as the prime or reference meridian. It is well documented that commerce largely dictated this choice, in particular the dominance of shipping charts based on Greenwich, which harkened back to the seventeenth century, when British astronomers and clockmakers vied to solve the problem of determining longitude at sea.

In the twentieth century, ever more precise clocks began to reveal that the Earth’s rotation was not completely regular. The first atomic clocks were developed in the 1950s, and in 1967 the international definition of the second was changed so that the cesium atom is now our primary timekeeper. Coordinated Universal



Time is the modern descendant of Greenwich Mean Time, but refers instead to an international network of atomic clocks. Today we know the time without ever looking at the sun; we encounter jet lag as we fly from one time zone to another; and we know not only the time here but the time there: we know when the stock market opens in New York or in Tokyo and the difference between clocks in London and Paris.

From Absolute to Relative Time

Study of the relationship between time and motion extends at least as far back as Greek philosophy. For example, to Plato time was “the moving image” of an ideal static eternity, manifested in and even brought into being by the motion of celestial bodies. Aristotle questioned this identity, seeing time rather as a “numbering” of motion, dependent on perception of change. Augustine, drawing on this tradition, suggested that this perception implies a human observer, who by memory and expectation may circumvent the apparent fact that only the present is in any sense real.

With the invention of the mechanical clock, the regular motion of the heavens could be represented in miniature—figuratively, but also directly, as public clocks by the late fourteenth century might also elaborately display the phase of the moon or the movement of the planets. It is then only a short step to a view of the whole universe as a clockwork machine, put forward for example by Kepler and Boyle and a key feature of the seventeenth century scientific revolution. Newton, developing the views of Isaac Barrow, famously stated at the beginning of *Principia* that “absolute, true and mathematical time, of itself, and from its own nature, flows equably without relation to anything external.” Both the stars and the clock merely count off the flow of this absolute time, which may be represented geometrically by a straight timeline with each point a single instant.

Leaving aside philosophical disputes, Newton’s definition survived unchallenged for over two hundred years, until Einstein. Einstein’s theory of relativity begins with two postulates: physical laws should not

depend on any motion of the observer, and the speed of light is the same for all observers. The second jars with everyday experience: as a car accelerates away from a standstill, its speed over the ground increases but the speed of the light from its headlights does not. It also has far-reaching consequences. Imagine that you are standing in the center of a stadium, and I am running past you just as the lights are turned on. You see all the lights turn on at the same time—a little after they actually did, because their light takes time to reach you. But in this time I have moved towards one side of the stadium. I see that side turn on first, because that light travels a shorter distance to me at the same constant speed. A third person running past you in a different direction experiences events in a different order again. The profound message of relativity is that relative motion—one observer moving relative to another—unavoidably leads to relative time, with no unique, correct, or absolute order of events.

Relativity has still stranger consequences. Time passes at a slower rate for a moving observer; if one of two twins takes a rocket trip, he will be younger than his brother when he returns, and the faster he travels the less he will age. Time similarly slows as gravity increases, so that clocks tick slower on the ground than they do in orbit. These bizarre predictions of Einstein’s theory have been verified to extraordinary accuracy by experiment, and they even impact on modern life: for the Global Positioning System to provide accurate navigation, the satellite atomic clocks must be corrected for these effects.

Scales of Time

Science has revolutionized our understanding of the scale of time as well as its nature. In antiquity, anything shorter than a heartbeat was the realm of philosophy, anything longer than a lifetime that of history, religion, or myth; both were inaccessible. Authors of medieval *computus* texts (notably Bede, the Benedictine monk) speculated on the smallest part into which a day might be divided, but were principally concerned with calculating the date of Easter. At the other end of the scale, Archbishop James Ussher

What is time? Who can explain this easily and briefly? . . . Provided that no one asks me, I know. If I want to explain it to an inquirer, I do not know. • **Saint Augustine (354–430)**

of Armagh deduced around 1650 that the universe was created in 4004 BCE on Saturday 23 October at 6 P.M. Other cultures incorporated much longer epochs in their chronology, for example the Mayan and Indian cycles already noted, but these figures were largely simple mathematical progressions of shorter-scale calendars.

Today the range of time intervals open to direct study has widened dramatically. Modern technology slices time ever finer: races are timed to thousandths of a second, atomic clocks are synchronized across the globe to billionths of a second, and the fastest laser pulses open a window to timescales shorter than one femtosecond (a millionth of a billionth of a second). In the realm of “deep time,” the age of the Universe is believed to be around thirteen billion years, of the Earth around four and a half billion years, and of our hominid ancestors over seven million years (this is still much discussed as new fossils are found). These figures draw on advances in geology, palaeontology, astronomy, and cosmology, which were only refined through the nineteenth and twentieth centuries.

Personal Time

In the late nineteenth century, researchers began trying to understand the biological processes that embody our personal consciousness of time. Great progress has been made in characterizing human biological cycles, including the well-known circadian rhythms that have a period of approximately one day, and using this knowledge to advantage; for example, the effectiveness of drug treatments can vary significantly with the time of day. Cellular and physiological processes that underpin a multitude of personal “clocks” are yielding their secrets, including mechanisms for synchronizing body functions with the environment (a built-in clock) and a separate interval timer for estimating elapsed duration (a built-in stopwatch). Neurological research can identify the areas of the brain that are important for human memory, whereby both the time stamp attached to a specific event and the chronological sequence based on these time stamps can be stored and retrieved.

Nevertheless, a real understanding of human time consciousness—particularly the great variation in the rate at which we can experience the subjective passage of time—remains elusive. It is also particularly ironic that these new insights come at a time when for many life is increasingly separated from natural cycles: for example, shift work, twenty-four-hour shopping, and even air-conditioning or electric lighting all blur our link to environmental time.

The Future

The rate of improvement in our ever-advancing ability to measure time is roughly exponential. The day is the same length now as it ever was (at least, to a very good approximation), but accelerating social change makes time seem in shorter supply and consequently much more precious. Many authors argue that a kind of liberation from slavery to clock time is needed, repeating a challenge heard as early as Roman times and which has frequently recurred through history and literature since then.

Clocks underpin much of our modern infrastructure, from telecommunications to electricity distribution to electronic trading to satellite navigation. We take for granted a technical mastery over time, yet time is ultimately as much of a mystery as ever. As sociologist Michael Young (1998, 245) put it, “We can delude ourselves that we know what time is because we know what time it is.” The future of time itself will surely yield as much color and change as its past has.

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National Measurement Laboratory

See also Cosmology; Periodization; Universe, Origin of

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Timur

(1336–1405)
TURKIC CONQUEROR

The Turkic conqueror Timur is remembered as a skilled debater, a speaker fluent in several languages, and one of the last great nomadic warriors. Timur organized notorious massacres from India to Turkey, leaving numerous towers of skulls as reminders to the conquered.

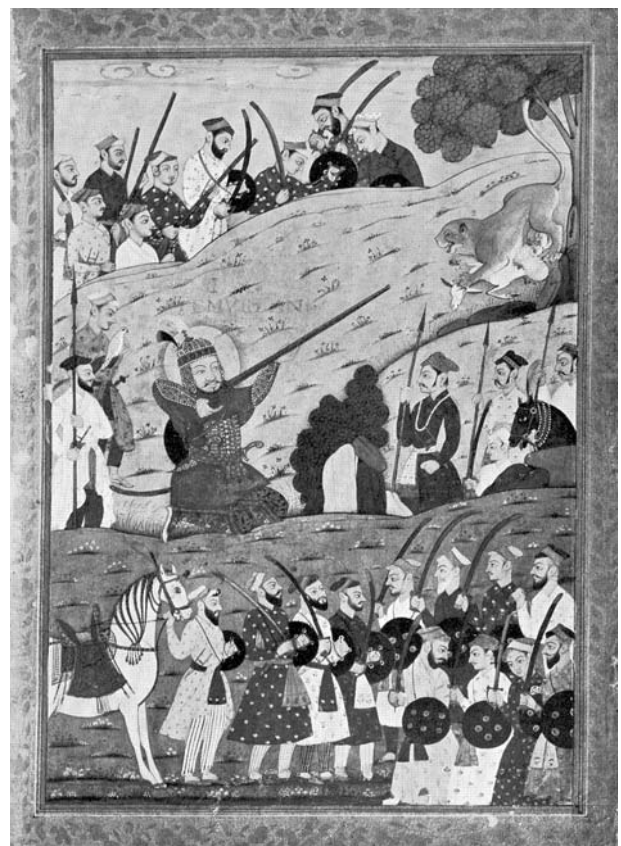
Timur-i Leng (Timur the lame), also known in English as Tamerlane or Tamburlaine, was the last of the great nomadic emperors. His detractors called him Timur-i Leng because his right arm and leg were paralyzed from arrow wounds received during a raid in his youth. During his reign, however, he was known as Emir Timur, and he engaged in a career of conquest that took him from India to Turkey and that shook the foundations of several empires.

Born near Kesh (now Shakhrisabz, in Uzbekistan), near Samarqand in 1336, Timur was the son of Tara-gai of the Barlas tribe, a tribe of Mongolian origins but thoroughly Turkic in ethnicity by Timur's lifetime. Timur began his career as a minor leader and sometimes bandit during the unrest that marked much of Central Asia during the mid-fourteen century.

With the collapse of the Chagatai khanate, a successor state of the Mongol Empire that covered most of Central Asia, new opportunities arose in the region. Timur took advantage of the situation and became the lieutenant of his brother-in-law Husain. The two gained control of Mawarannahr (Arabic for "the land between the rivers,"—the rivers being the Syr Dar'ya and Amu Dar'ya), or Transoxiana, before a falling-out pitted them against each other in 1370, with Timur emerging as the victor.

After becoming the ruler of Mawarannahr, Timur spent the following ten years consolidating his control

in the region and defending it from raids by the remnants of the Chagatai khanate in what is now Kazakhstan and Xinjiang (northwestern China). In 1380 Timur supported Toqtamysh, a prince of the Golden Horde (another successor empire to the Mongol Empire; it controlled the area of present-day Russia and Ukraine), in Toqtamysh's bid to rule the Golden Horde.



Timur leading his troops.



This Persian miniature from the *Zafarnama of Sharaf Al-Din 'Ali Yazdi* (Book of Victory), written between 1595 and 1600, depicts the defeat by Timur of the Sultan of Delhi in the winter of 1397–1398.

Not until 1383 did Timur attempt to expand his realm beyond Mawarannahr, sending his forces across the Amu Dar'ya into Persia. By 1385 Timur had incorporated the regions of Khorasan (which is now present-day northeastern Iran and surrounding areas of Afghanistan), Afghanistan, and eastern Persia (Iran) into his realm, and by 1394 the regions of Fars (present-day southwestern Iran), Iraq, Azerbaijan, Armenia, and Georgia had succumbed to his armies as well. Timur rarely established an effective administrative apparatus in his conquered territories, apparently preferring plundering territory outside of Mawarannahr to governing it effectively.

Meanwhile, Timur's protégé Toqtamys, now the ruler of the Golden Horde, decided to challenge

Timur's authority. As a descendent of Genghis Khan, Toqtamys viewed himself as the rightful ruler of all the lands that the Mongol Empire had once comprised. Toqtamys defeated Timur's generals during invasions in 1385 and 1388; Timur retaliated by invading the Russian steppes in 1391. Although Timur defeated Toqtamys and dethroned him, Toqtamys regained power and invaded Timur's empire again in 1395. Timur in turn struck back, defeating Toqtamys once and for all on the Kur River in 1395 and proceeding to break the power of the Golden Horde.

Timur did not incorporate the Golden Horde into his empire, preferring to place a puppet ruler on the throne. Not content with his victories in Persia and the Russian steppes, Timur invaded India in 1398, justifying his actions—as he did for many campaigns—on religious grounds. In the case of the destruction of the sultanate of Delhi, he justified his actions on the grounds that Sultan Mahmud Tughluq was excessively tolerant of his Hindu subjects. In the wake of the sack of Delhi, Timur's army carried an immense amount of wealth back to his capital at Samarkand.

Timur did not stay long in his capital. In 1399 he marched west, his eye on both the Mamluk sultanate (in Egypt and Syria) and the Ottoman Empire (in Anatolia, modern Turkey). Both states had either supported enemies of Timur or threatened his clients. After putting down a rebellion in Azerbaijan, Timur invaded Syria in 1401 and defeated the Mamluks, sacking Aleppo and Damascus in the process. Timur then invaded Anatolia and defeated the Ottoman army at Ankara in 1402; his capture of the Ottoman sultan Bayezid I left the Ottoman Empire in turmoil.

With his western frontier secure, Timur returned to Samarkand in 1404, where he began planning for an invasion of China (at that time ruled by the Ming dynasty). The invasion ended prematurely in 1405, when Timur died at the city of Otrar. His empire, held together primarily through the force of his will, quickly disintegrated into smaller states ruled by his sons and grandsons.

In the annals of world history, Timur is remembered most for his conquests and cruelty. He orchestrated many massacres and left numerous towers of skulls as reminders to the conquered. Although illiterate, Timur was noted for being very intelligent, an expert chess player, a fluent speaker in several languages, and well versed in the art of debate. Furthermore, Timur dramatically impacted five states. His defeat of the Ottomans made it possible for the Byzantine Empire to survive fifty years longer than it might have otherwise, as Bayezid had planned to attack Constantinople before being defeated by Timur. The defeat of the Mamluks, while not destroying them, exposed the slow decay of their once grand military might. By defeating Toqtamysh, Timur eroded the strength of the Golden Horde and accelerated the end of nomadic dominance over the principalities of Russia. Although he sacked Moscow, then a small town, Timur's defeat of Toqtamysh actually contributed to that city's rise. His destruction of Delhi, on the other hand, was the death knell for the sultanate

of Delhi. Although Timur's empire disintegrated after his death, Timur's descendants established the Mughal Empire in India, supplanting the sultanate of Delhi.

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See also Steppe Confederations

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Tobacco

Tobacco is a plant in the genus *Nicotiana* that contains the addictive drug nicotine. The leaves of the tobacco plant can be processed and used for smoking, chewing, or inhaling. Originating in the Americas and introduced to Europe in the sixteenth century, people have used tobacco for centuries. It was not until the 1930s that physicians realized the health implications associated with tobacco.

The tobacco plant is a member of the family Solanaceae and the genus *Nicotiana*. It is a coarse, large-leaved perennial that grows in warm climates and rich, well-drained soils. Tobacco's defining feature for people is its nicotine, which makes up 2 to 7 percent of the leaf. In concentrated form, nicotine is used as an insecticide and drug. It acts primarily on the human autonomic nervous system and, in small doses, imparts feelings of alertness and pleasure. Nicotine is physiologically addicting, which is perhaps one of the major reasons for tobacco's global spread.

Early History

Tobacco (*Nicotiana tabacum*) was first grown by natives in the pre-Columbian Americas. It is thought to have first been cultivated in the Peruvian Andes, where it was used for medicinal and ceremonial purposes. From there it spread throughout the continent. Evidence shows that the Aztecs smoked tobacco leaves stuffed in hollow reeds and that Central and North American natives smoked thick bundles of tobacco wrapped in palm leaves and maize husks.

Because tobacco was a medium that connected the natural and supernatural worlds, shamans used large quantities of it in religious ceremonies and healing rituals. In order to alleviate certain illnesses, for example, shamans placed tobacco on patients' skin, eyes, gums, and tongue or boiled the leaves in water and fed it to patients as a liquid.

Although tobacco was introduced from Mesoamerica to North America about 200 CE, Europeans did not come into contact with it until many centuries later. Christopher Columbus became aware of tobacco when he visited the West Indies, where he had seen the Cuban natives smoking small cigars (*tabacos*) through their nostrils. He brought a few tobacco seeds and leaves with him back to Spain. At first, because tobacco was a rare commodity, smoking signified social status and wealth. Most Europeans did not get their first taste of tobacco until the mid-1500s, when travelers and diplomats like Englishman Sir Walter Raleigh and the Frenchman Jean Nicot (for whom nicotine is named) popularized its use. By the early 1600s tobacco had spread throughout most of South America, Europe, the Caribbean, and the North American colonies.

Tobacco in the American South

Tobacco soon became an important commodity in Europe but an even more important commodity for the American colonies. Virginia, Maryland, and North Carolina's eighteenth- and early nineteenth-century economies depended almost entirely on tobacco, which was harvested as a cash crop and sent to European and North American colonial markets.



Nicotiana glauca (cultivated tobacco), from *Tobacco, Its History and Associations: Including an Account of the Plant and its Manufacture; with its Modes of Use in All Ages and Countries*, by Frederick William Fairholt (1814–1866).

Indeed, tobacco was the single greatest factor in the development of the southern colonies' economic, political, and social life.

The Englishman John Rolfe, who observed local Native Americans growing different strains of tobacco, cultivated the first successful commercial crop of *Nicotiana glauca* in Virginia in 1612. In fact, the Native American princess Pocahontas was the first “poster girl” of tobacco, and her marriage to Rolfe assured that native peoples would not attack the Jamestown colony or destroy the new cash crop. By the 1620s tobacco had become Virginia's major crop.

Virginia's fledgling tobacco industry created great demands for land and labor. Because tobacco quickly depleted the land by removing nitrogen and potash

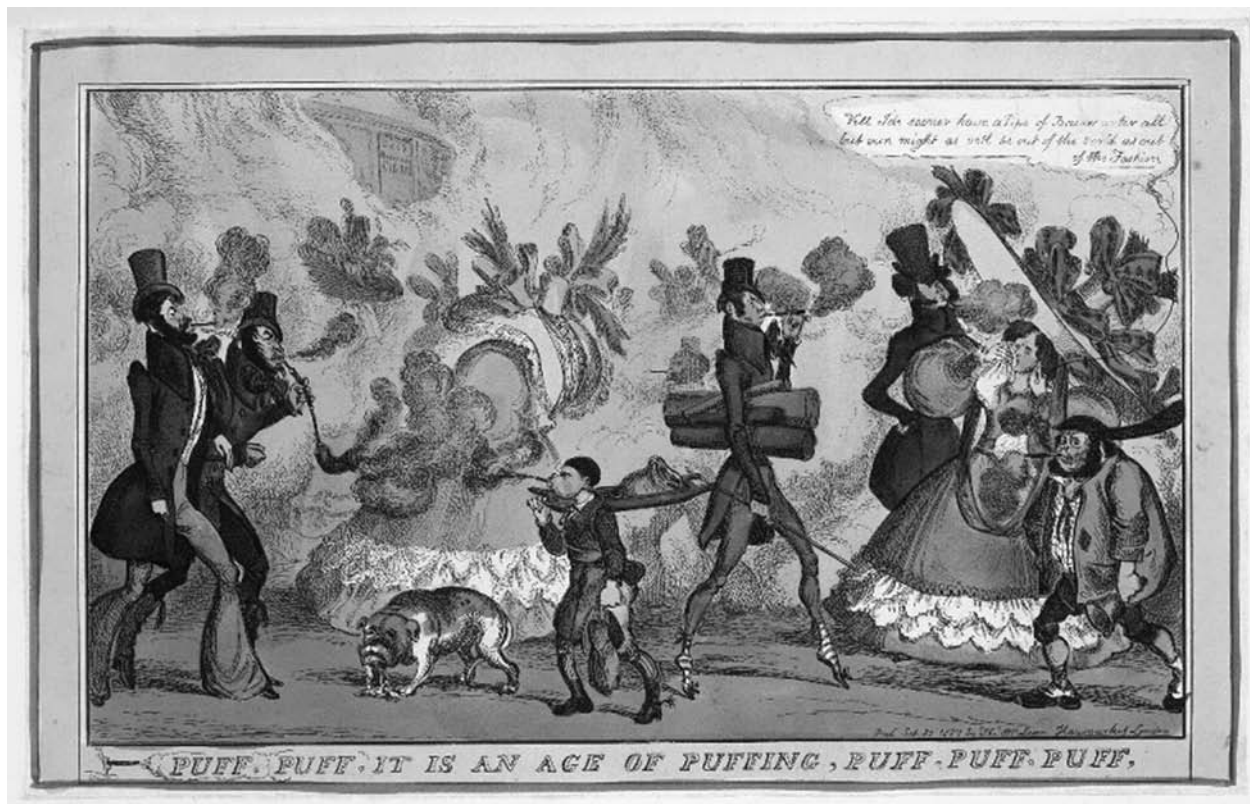
from the soil and depositing toxic elements, farmers seldom planted more than three or four crops on the same plot of land before they abandoned it to corn or wheat. Thus colonial planters constantly cleared forest to make room for more tobacco lands and began to establish large plantations deeper in the interior.

For the next two centuries, tobacco cultivation, which was labor intensive, fueled the demand for labor, particularly imported African slave labor. To start a crop, seeds were sown in beds in late spring. Plants had to be carefully weeded and cut. In early fall, ripe plants were cut and hung on pegs in a ventilated tobacco house to cure for a month or more. The leaves were then cut from the plant, tied into bundles, and shipped to England and the other colonies. At first, planters relied on indentured servants imported from England for this labor. But after 1700 tobacco plantations employing several dozen imported African slaves or more were common, and, by the 1790s, more than 650,000 slaves worked on tobacco plantations. By the time of the Civil War, the South's agricultural economy rested on the labor of more than 4 million African slaves.

By the 1830s, however, the instability of the tobacco market, combined with soil exhaustion, had created unfavorable conditions for tobacco expansion. Many farmers in the old tobacco-growing regions of Virginia, Maryland, and North Carolina shifted to other crops, and the center of tobacco cultivation moved westward. In the mid-nineteenth century, while the North experienced dramatic economic growth, the South remained primarily agrarian. Short-staple cotton replaced tobacco as the region's dominant agricultural commodity by the late 1800s.

Cigars, Cigarettes, and Cancer

Tobacco was initially cultivated for pipe smoking, tobacco chewing, and snuff dipping. Cigars became common in the early 1800s, and cigarettes became popular in the 1860s, although they had existed in crude form since the early 1600s. The spread of “Bright” tobacco, a yellow leaf grown in Virginia and



Men puff away while women hide their faces behind large hats and handkerchiefs. From *Tobacco, Its History and Associations*, by Frederick William Fairholt.

North Carolina, combined with the invention of the cigarette-making machine in the late 1880s, created new markets for cigarettes. Improvements in cultivation and processing likewise reduced the acid content in tobacco, making cigarette smoking more appealing to the masses.

The harmful health effects of tobacco were not initially known. In fact, many physicians, who looked at Native American uses of tobacco, recommended the leaf for medicinal uses. But by the early twentieth century, scientists and physicians began to address the harmful health effects of tobacco. In 1930, German researchers statistically correlated cancer and smoking. In the following decade the American Cancer Society linked smoking and lung cancer. A *Reader's Digest* article published in 1952 outlined the dangers of smoking and had tremendous impact on the smoking community. Tobacco sales subsequently declined. The tobacco industry countered claims that linked nicotine and cancer but nonetheless introduced "healthier" lines of cigarettes, including filtered

cigarettes with low-tar formulas. By the 1960s, however, the formation of the Surgeon General's Advisory Committee on Smoking and Health again threatened big tobacco by showing that the average smoker was ten times more likely to develop lung cancer than was the nonsmoker. In 2008 the World Health Organization reported that tobacco related ailments are the leading preventable cause of death worldwide, accounting for as many as 5.4 million deaths in 2004 and possibly as many as 100 million deaths throughout the twentieth century.

Since the 1960s the tobacco industry has been engaged with the government and citizens' groups in battles over the proper labeling, advertising, and sales of tobacco. In 1971 all broadcast advertising in the United States was banned, and the days when one heard a famous soprano declare, "I protect my precious voice with Lucky Strikes" ended. The first major legal challenge to the tobacco industry came in 1993, when Rose Cipollone, a smoker dying from lung cancer, filed suit against Liggett Group, claiming that the company

For thy sake, tobacco, I would do anything but die. • Charles Lamb (1775–1834)



"Cultivating tobacco."
From the Arents Cigarette
Cards series, number 963
(c. 1922–1939).

had failed to warn her about tobacco's health risks. She won a \$400,000 judgment against the company, but the judgment was later overturned. In 1994 the state of Mississippi filed the first of twenty-two state lawsuits seeking to recoup millions of dollars from tobacco companies for smokers' Medicaid bills.

While estimates vary, tobacco production and consumption is on the rise. World tobacco production is thought to have risen from 4.2 million tons in 1971 to an average of 6.9 million tons between 1998 and 2000. China, India, and Brazil are the top three tobacco producers; the United Nations Food and Agriculture Organization projects that world tobacco leaf production will reach 7.1 million tons in 2010.

While smoking rates have leveled or dropped slightly in the developed world, they are on the rise in the developing world, particularly those countries experiencing rapid economic growth. Of the world's estimated 1.22 billion smokers, 1 billion of them live in the developing world. In many Western countries smoking is now banned in public places such as restaurants.

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See also Drugs, Psychoactive

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Tourism

The first tourists traveled ancient lands to festivals and sites of religious or ancestral significance, their movements facilitated by the building of roads and ships. Upper-class men began to tour the world for education and scientific study in the late fifteenth century. Modern tourism, or leisure travel, developed along with more accessible and efficient means of transportation, such as railroads, steamships, automobiles, and airplanes.

Tourism is a relatively new field of study within the discipline of history. Its connection with trends in social, cultural, and economic history, however, means it is a valuable research area. Tourism is generally defined as travel outside a person's usual environment, primarily for leisure, but the term can also be applied for other purposes. Though the term "tourism" was first coined in the early nineteenth century, the activity has much deeper historical roots. Technology has facilitated changes in travel over the centuries, and, from ancient times, leisure, trade, pilgrimage, and empire have seen people travel across regions and cultures forging connections and contacts. A chronological look at the history of tourism shows its transformation over the centuries from travel only occurring out of necessity, through its association with leisure as a privilege of the upper classes, to an industry of its own in the twenty-first century.

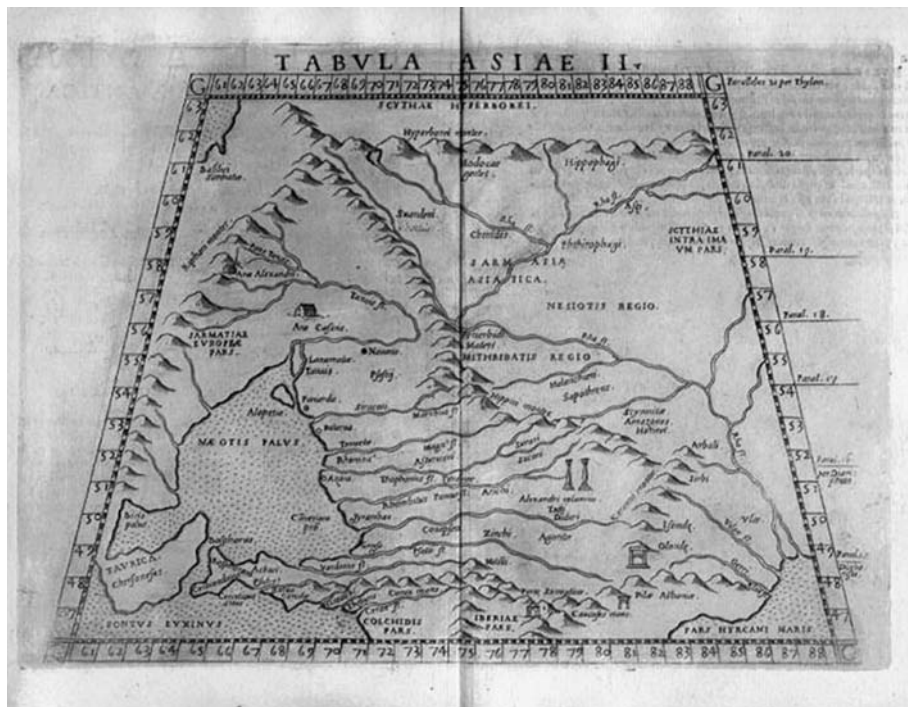
Trade

Most sources point to the Sumerians (Babylonians) and their development of trade around 4000 BCE as the birth of travel (Goeldner and Ritchie 2009).

Initially merchants traded locally and then, after the development of ship technology, traded further afield, across the Mediterranean Sea and Indian Ocean (Casson 1994). Trade remained the major motivation for travel over the centuries with the vast trading networks of the fifteenth and sixteenth centuries. Even though this may not come under the banner of what we think of tourism today, travel through trade often saw movement across vast distances and cultures. The Silk Roads are a prime example here, as traders traveled from Europe to China over a number of different routes. From the fourth century BCE, the Silk Roads saw travel link Asia and the Mediterranean through trade, military movements, and religion. Travel was difficult and dangerous, however, and was only conducted when necessary. Trade, military, and administrative purposes were the main motivations for travel in the ancient and medieval periods, although religious festivals, pilgrimage, and other leisure travel were also evident and more of a reflection of modern tourism.

Pilgrimage

From the time of the ancient Egyptians, pilgrimages and festivals have taken travelers across borders. Tourism, as in travel for pleasure, is evident in Egypt from 1500 BCE onward (Casson 1994). The pyramids were a site of pilgrimage for Egyptians, and, even though this travel was still relatively local, it demonstrated the importance of pilgrimage as an instance of early tourism. Travel for pilgrimage is also evident in many Asian countries, particularly in China, where a culture for travel can be seen from an early period (1350–1050 BCE) when people journeyed



Map of the Silk Roads route by Ruscelli (sixteenth century). Treks along this ancient trade route, to religious festivals or pilgrimage sites, gradually gave way to travel resembling modern tourism.

to the mountains and rivers to visit their ancestral gods and spirits (Sofield and Li 1998). Travel, however, was still a disjointed experience and a difficult undertaking on treks over long distances.

The building of roads during the Roman Empire facilitated a new medium for travel. A network of about 80,500 kilometers (50,000 miles) of roads had been built by the first century BCE spreading across the empire. Roman roads allowed travel across northern Europe in Britain and Germany to southern Europe into Egypt. As a result, travel for leisure across Europe gained popularity among Romans, and the new road technology meant greater distances could be covered at a greater speed. Romans traveled to sites and monuments across the empire to sightsee at popular destinations, including the pyramids and the sites of Greece. But this trend did not last, and after the collapse of the Roman Empire and the division of Europe, roads were no longer maintained and travel once again became difficult and dangerous.

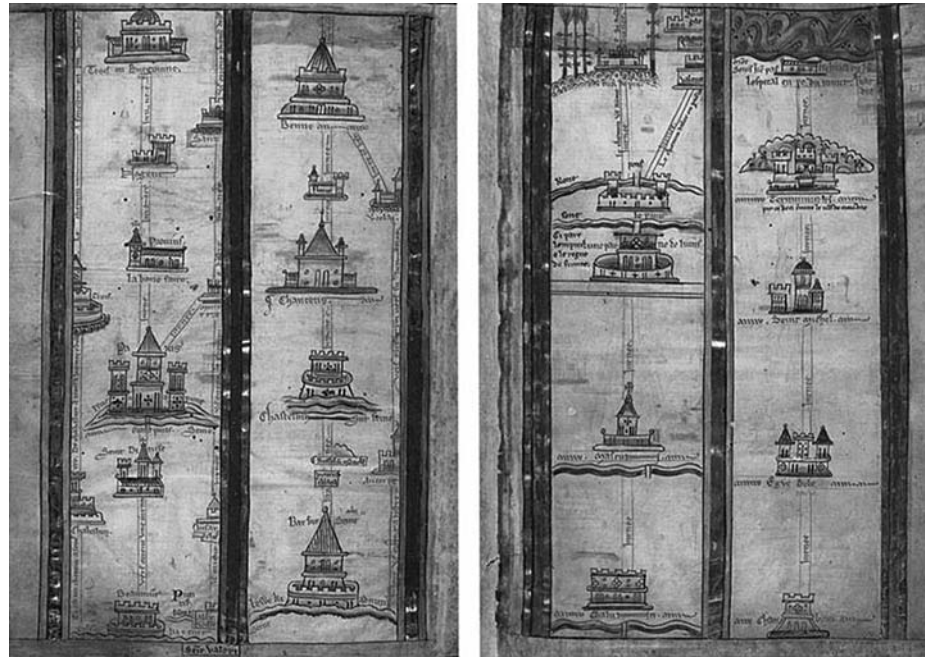
Despite this, pilgrimages continued across Europe during the medieval period with travelers crossing regions to visit shrines, churches, relics, and other sites of religious significance. Consequently, as the main sources of hospitality along the road, churches and monasteries allowed travelers to overcome the dangers of travel. There are many surviving accounts of

pilgrims' journeys and guide books with information and instruction for travelers. Pilgrimages often took travelers across borders and put them in contact with cultures they would not normally have encountered. This sometimes caused conflict, and the domination of religious travel eventually faded, giving way to travel as a search for knowledge and culture.

The Grand Tour

In Europe, from the early modern period, travel and tourism were seen as part of expanding and acquiring knowledge. From the late fifteenth century, the sons of the upper classes were sent to tour abroad as a means of completing their education. As tutors took their young male charges to cultural sites, the process evolved as an induction into gentlemanly society. The Grand Tour, as this practice would become known in the late seventeenth century, caught on. Over the course of the seventeenth and eighteenth centuries, thousands of Britons, Germans, French, and Russians traveled around the continent, principally to France, Italy, Switzerland, and Germany. Wealthy Britons especially, inspired by the aesthetic principles of the picturesque and Edmund Burke's *Philosophical Enquiry into the Origin of our Ideas of the Sublime and Beautiful* (1757), moved between the mountainous

This itinerary traces a pilgrimage from London to Jerusalem made by the thirteenth-century historian Matthew Paris, a monk at the Benedictine Abbey of St. Albans.



regions and the major places of cultural importance as ascribed by the many guidebooks published in the period. (The English term “tourist” was first coined in the late eighteenth century to describe them.) Tourists often brought back souvenirs during this period, and collections of geological, archaeological, and other items picked up on tour were common in homes of the wealthy all across Europe. (The term *wunderkammer* (“cabinet of curiosities”) was used to describe such collections.) The Grand Tour elicited a deliberate “seeking out” of culture in an effort to broaden the mind.

The eighteenth and nineteenth centuries saw travel more through the lens of scientific exploration and expedition. The Age of Enlightenment transformed the approach to natural history, and scientists—particularly naturalists and botanists, both professional and amateur—traveled across the world in search of new information and a reordering of existing classifications through new biological systems. People from Britain, France, Germany, and America traveled to Asia and Africa exploring and collecting. Empire played a major role in this practice as Europeans traveled to their nation’s colonies discovering new species of plants and animals, reported on the cultures of indigenous populations, and mapped the territories. Despite the curiosity for discovering new cultures throughout the eighteenth and nineteenth

century, travel was used as a means of dominating the landscape and native people, particularly in colonial Africa, Asia, and South America. Travel was still very much a privilege of the upper classes, but this changed during the nineteenth century.

Trains and Steamships

The Industrial Revolution’s impact on technology and work patterns transformed tourism in Britain and northern Europe. In particular, the revolution in transportation technology and the emergence of a tourism industry opened up leisure travel to greater numbers of people and made the process of traveling much more organized.

The railway, in Britain and later in Europe and North America, allowed greater access to a destination at greater speed. Thomas Cook’s organized trip from Leicester to Loughborough in 1841 saw the start of mass rail travel for pleasure trips. During newly allocated holiday time, factory workers from the industrial heartlands of England were able to travel on the specially built railway lines to seaside resorts. These trends were also evident in North America. As the population spread west over the course of the nineteenth century, roads and then railways were constructed to facilitate travel across the country. Sailing ships were replaced by steamships and allowed greater

When you travel, remember that a foreign country is not designed to make you comfortable. It is designed to make its own people comfortable. • Clifton Fadiman (1904–1999)



Emil Brack (1860-1905), *Planning the Grand Tour* (n.d.). Oil on canvas. The Grand Tour elicited a deliberate “seeking out” of culture in an effort to broaden the mind.

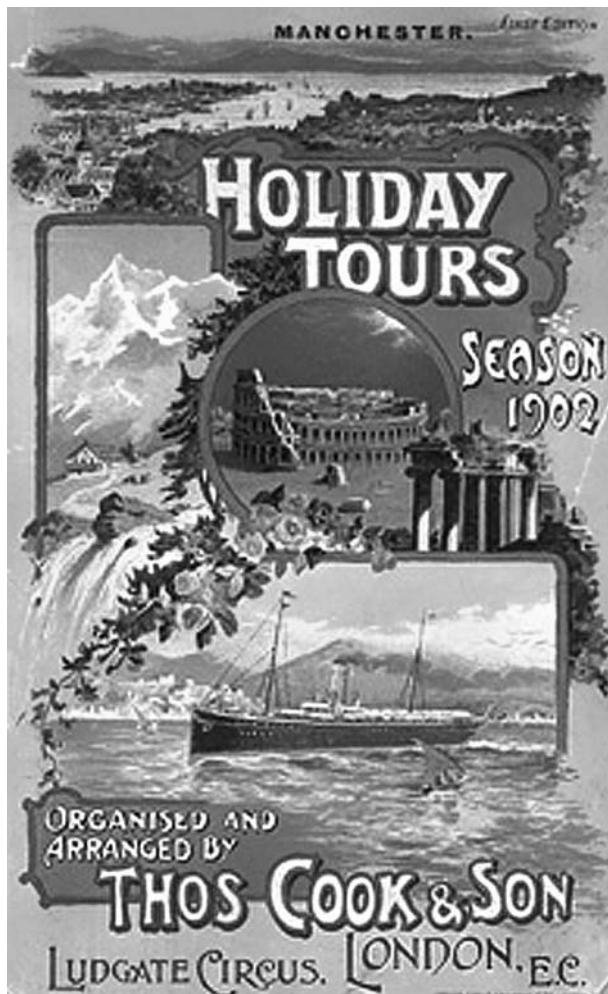
access to the world, not only for trade and scientific exploration but also for leisure. Other developments, such as the opening of the Suez Canal in 1869 also facilitated this movement abroad. From the late nineteenth century, travel to America and Australasia was a popular undertaking by the more wealthy members of the European population. In a continuation of the Grand Tour, people moved around the major cities and sites of interest. The technology of the Industrial Revolution, accompanied by the emergence of a tourism industry, opened up the world. The emergence of tour operators and travel agents in Britain and America, particularly Thomas Cook (in the United Kingdom), and the international financial services of American Express (which began issuing the Travelers Cheque in 1891), brought further organization

to tourism. In Britain, Thomas Cook provided organized trips to spa towns and seaside resorts and then, in 1855, to Europe and further afield, eventually providing tours to Australia and New Zealand beginning in the 1880s. These developments over the nineteenth century made tourism accessible to broad swathes of society and paved the way for the growth of the tourism industry in the twentieth century.

Automobiles and Airplanes

The relative peace in Europe in the late nineteenth century meant that these trends in tourism continued, and a growth in travel occurred up until World War I. In the years after the war, the motor car emerged as the new technology to dominate tourism. The popularity of the car for leisure travel began in the United States and moved to Europe over the course of the 1920s and 1930s. Once again linked to the fashions of the Grand Tour, motoring holidays saw tourists seeking out picturesque sites and points of interest. The car was much more dominant in the United States than in Europe; the first half of the twentieth century saw the car emerge as the main form of transport and the construction of highways and motels facilitated this desire for travel. The majority of car travel was domestic, challenging the dominance of the train, while the emergence of passenger air travel in the mid-twentieth century saw a dramatic shift away from surface transport for longer trips.

Just as roads, steam power, and cars had previously, airplanes transformed the way people traveled and opened up new regions, cultures, and populations to tourism. Initially used for commercial purposes, airplanes began taking passengers in the 1920s. Air travel for tourism took off after World War II with the development of the jet engine, which increased the speed and range of aircraft, making international travel more accessible. With greater affluence on both sides of the Atlantic from the 1950s onward, the tourism industry responded to demand for overseas travel by introducing cheap package holidays. This heralded the industrialization of the industry and the onset of mass tourism in the second half of the century.



This 1902 poster advertises tours organized by Thos Cook & Son, the “role model” for many travel agencies in the twentieth century. Thomas Cook Archive.

The Twenty-First Century

The twenty-first century has seen fundamental shifts in tourism, caused primarily by the role of the Internet and the use of tourism as a target for terrorism. The terrorist attacks of September 11, 2001, had a big impact on international tourism, heralding a new regime of travel security. Globalization means that while historic trends in tourism will continue, new players are emerging, particularly China, which is set to become the largest generator of international

tourism in the world. These trends are set against a background of (i) short-term reductions in demand for tourism caused by the global economic recession of 2008 onwards, (ii) ongoing concerns that the consequences for tourism on the environment are unacceptable, as for example the impact on the flora and fauna of sensitive areas, and (iii) a longer term concern over climate change and whether, in fact with its significant contribution to carbon emissions, tourism should continue at all. Of course, the tourism sector in the twenty first century is attempting to mitigate these impacts through alternative formats such as eco-tourism and sustainable tourism and these trends are set to intensify in the future.

Despite vast differences from the industry it is today, tourism as a process can be traced back to ancient times. Changes in technology, trends, and fashions have facilitated a transformation in the way people travel over the centuries. From the early periods of ancient history, travel, whether through trade, pilgrimage, a search for knowledge or for pleasure, has seen the exchange of ideas, populations, and trends.

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See also Pilgrimage; Travel Guides

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Trade Cycles

Trade cycles are fluctuations in patterns of prosperity and depression that have occurred throughout history as the result of shocks such as wars, oil crises, new technologies—or as the result of waves of investor optimism and pessimism. Economic growth has not been, and is unlikely to be in the future, smooth and steady, but will consist of fluctuations around a trend.

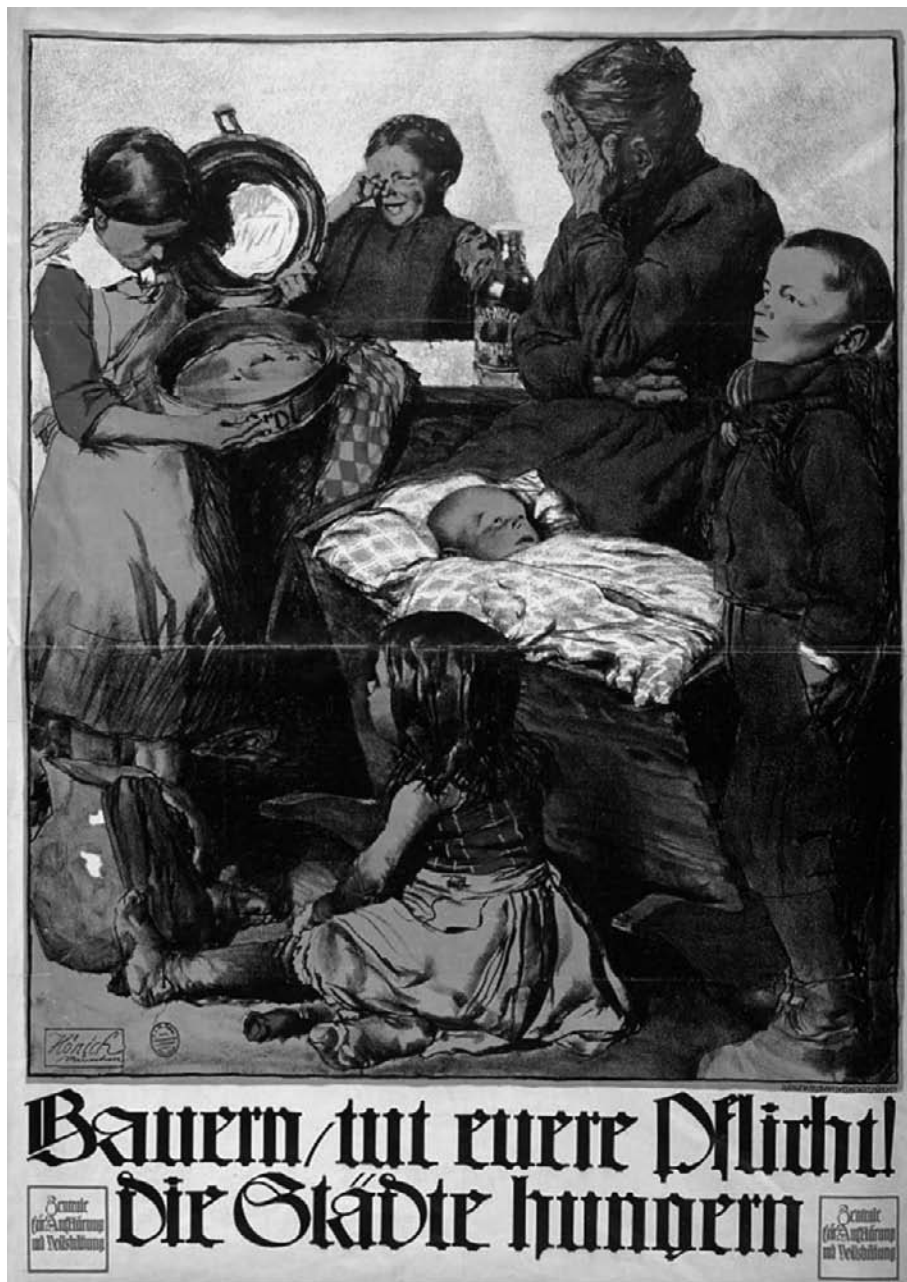
Since the time of the Old Testament, when Joseph prophesied to Pharaoh that Egypt would experience seven fat years followed by seven lean years, economic activity has been characterized by wavelike rhythms and by longer-term trends and irregular fluctuations. Boom periods of prosperity and expansion are succeeded by recessions and depressions, which in turn give way to recovery and renewed prosperity. In preindustrial societies, cycles and fluctuations in the weather, which affected harvests, had the largest effect on the level of prosperity, while all aspects of life were affected by the cycle of the seasons. The “little Ice Age” of the fourteenth century was a period of economic depression in Europe. In the 1870s the economist and philosopher William Stanley Jevons argued that an eleven-year cycle in sunspots caused cycles of the same average length in the weather, harvests, and economic activity, but this theory has since been rejected so completely such that in current macroeconomics the term *sunspots* is used to refer to any intrinsically irrelevant variable.

Beyond the weather and the seasons, preindustrial cycles and fluctuations in economic activity were set off by real shocks (wars, inventions, and plagues such as the Black Death of 1348–1351, or discovery of

trade routes such as the sea route around the Cape of Good Hope to Asian spices) or by monetary shocks (such as the “price revolution of the sixteenth century,” as silver from the new Spanish colonies in Mexico and Upper Peru raised Europe’s money supply and quadrupled its prices). The Black Death, which raised the amount of arable land per person by killing a third of Europe’s population, was followed by more than half a century of high real wages. A financial shock, such as the failure of the Bardi and Peruzzi banking houses in Florence when Edward III of England defaulted, rippled through the commercial cities of northern Italy and Flanders and their trading partners around the Mediterranean and Baltic. Lord Overstone, a banker, introduced the phrase *cycles of trade* in the 1840s, and in 1862 the economist Clément Juglar published his pioneering history of commercial crises and their periodic recurrence in England, France, and the United States (including cycles in French marriage, birth, and death rates). The phenomenon itself was much older: the economist Thomas Ashton identified twenty-two economic fluctuations in eighteenth-century England, finding their origins in Britain’s wars, seventeen financial crises, and eleven bad harvests.

Long Waves

In 1925 the economist Nikolai D. Kondratieff observed recurring long waves of fifty to sixty years (twenty to thirty years of rapid economic growth, followed by an equally long period of slow growth) in British, French, and U.S. data on output, prices, wages, and interest rates from the Industrial Revolution onwards. This analysis led to his arrest and death in Stalin’s purges

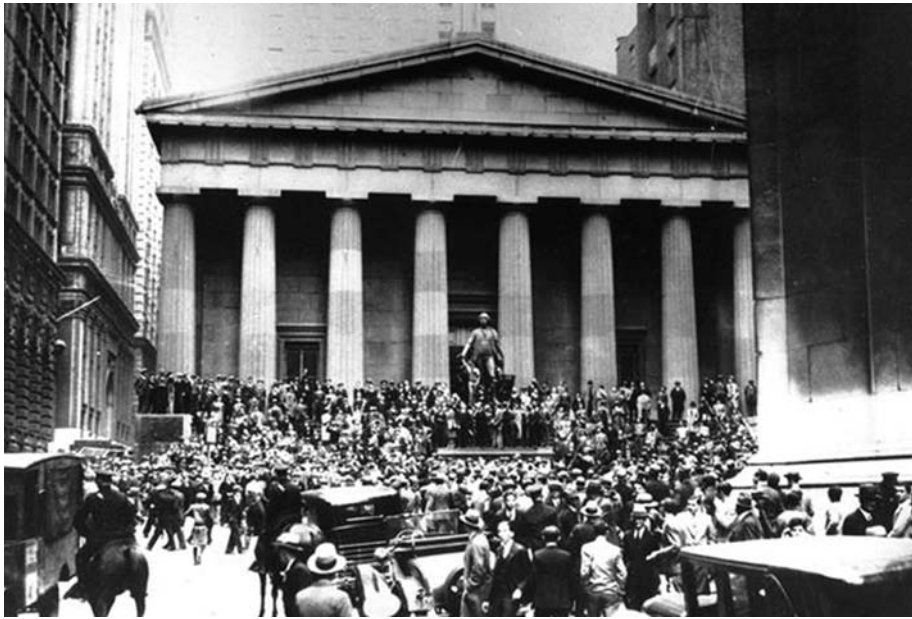


More than two-fifths of German industrial workers were unemployed by 1932. Poster of a distraught mother and her hungry children reads, "Farmers, do your duty! The cities are starving." Library of Congress.

and the suppression of the Moscow Business Conditions Institute because of the implication that the Great Depression following the Wall Street crash of 1929 was not the final crisis of capitalism, but merely a severe downturn that would be succeeded by an upswing in the capitalist economies.

The political economist Joseph Schumpeter attributed the economic expansion at the start of each Kondratieff wave to a clustering of technological innovations that both improved productivity and induced a surge of investment: water power, cotton textiles (spinning jenny, power loom, cotton gin),

and iron (coked coal replacing wood as fuel) in the first Kondratieff wave from the 1780s (the Industrial Revolution); steam, railways, and steel in the second Kondratieff wave in the middle of the nineteenth century; chemicals, electricity, and automobiles in the third wave that began in the 1890s. Later writers emphasize electronics, petrochemicals, and aviation in the fourth wave and computers and the Internet in a fifth Kondratieff wave. Such breakthroughs in technology and organization are instances of "creative destruction" rendering obsolete the physical and human capital of the previous techniques of production.



**"Black Monday," 28
October 1929, Wall Street.**
The stock market fell 12.8
percent and dropped almost
as sharply the following day.

Schumpeter interpreted economic fluctuations as the aggregation and interaction of three superimposed cycles: a short Kitchin cycle (inventory cycle) averaging forty months duration, a Juglar cycle of nine or ten years, and a Kondratieff cycle of forty-eight to sixty years, generated by clusters of innovations of different importance and gestation. By contrast, the economist Solomos Solomou concludes that the evidence is against the existence of a Kondratieff long wave in output or prices, that the leading industrial economies have not shared the same phases of boom and bust over long cycles, and that innovations have not been clustered in the way suggested by Schumpeter. But Solomou found more evidence to support the existence of a Kuznets cycle averaging twenty years in length (varying from fourteen to twenty-two years), while other authors had argued that the apparent Kuznets cycle was an artifact of the filtering techniques used to decompose time series into trend, cycles, and irregular fluctuations. Increasingly, economists and economic historians have become skeptical of the existence of true economics cycles—persistent rhythms whose average length and size remains unchanged—but recognize that responses to real and monetary shocks can be oscillatory, moving through successive phases of expansion and contraction but with the response to each shock gradually fading away.

Depressions

The depression of 1873 to 1896 was a long period of generally declining commodity prices and rising purchasing power of money, as the demand for real money balances grew faster than the world's supply of gold. Such falling price levels were perceived at the time as depressing industry and commerce, but the period 1873–1896 is viewed in retrospect as one of depression in prices and nominal interest rates rather than in real output. The deflation was reversed by gold discoveries in South Africa and the Klondike and by the invention of the cyanide process for extracting gold from low-grade ores. The Great Depression of the 1930s, following the Wall Street crash of October 1929 that ended the U.S. stock market bubble of the late 1920s, was a depression in real output and employment as well as in prices. A quarter of the U.S. labor force and more than two-fifths of German industrial workers were unemployed by 1932, more than one-fifth of British workers by 1931. Bank failures and the fear of additional possible bank failures, with no deposit insurance, caused depositors to withdraw cash from U.S. banks, and banks to hold more reserves against their deposits, causing the U.S. money supply and price level to fall by a third or more. The gold standard, requiring the convertibility of national currencies into gold and other currencies at fixed rates, was seen as spreading the depression from one

Commerce is the cure for the most destructive prejudices. • Charles de Montesquieu (1689–1755)

country to another, as national central banks were obliged to contract their money supplies to defend the exchange rates in the face of gold outflows. A country could maintain a fixed exchange rate only if the prices of its goods fell by the same proportion as the price level declined in its major trading partners and competitors. These pressures led to the breakdown of the gold standard, with Britain leaving in September 1931 and the United States in 1933. Another consequence was declining international trade and movement away from global economic integration, as countries responded to high unemployment and declining production by imposing tariffs and quotas on imports and subsidizing exports. Such moves increased friction between nations, and together with high unemployment, especially in Germany, helped to undermine democracy and international peace in the years leading to World War II. Similarly, the “golden age” of largely sustained western European, North American, and Japanese prosperity from 1950 (after the Marshall Plan and comparable American aid to Japan assisted postwar reconstruction) until the first oil shock of 1973 contributed to the growth of democratic institutions and international stability.

Trade Cycles in the Present and the Future

Do business cycles still exist? Are periods of economic boom still followed by slumps? The Great Depression of the 1930s and the associated rise of Keynesian macroeconomics (following the economic and monetary theories of British economist John Maynard Keynes) led national governments in the leading industrialized countries to accept responsibility for stabilizing the economy; they used monetary and fiscal policies to manage aggregate demand to try to smooth out fluctuations in output and employment. The larger share of government spending in the economy also acted as an automatic stabilizer, since government spending would be maintained when private consumption and investment fell in a recession, while such structural reforms as deposit insurance made the financial system less vulnerable to runs on

banks by anxious depositors. Swift reaction by the U.S. Federal Reserve System prevented the abrupt stock market slump of October 1987 from having the wider consequences of the stock market crash of October 1929. Even with the OPEC oil price shocks of 1973 and 1979–1980, the world economy has clearly been more stable since World War II than it was between the two world wars. However, the economist Christina Romer has argued, controversially but influentially, that the apparent greater stability of the U.S. economy after World War II than before World War I is nothing more than a statistical artifact, resulting from the ways in which retrospective national accounts data were created for the pre-1914 United States. The global financial crisis of 2007–2010, referred to by many as the worst financial crisis since the Great Depression, and triggered to a large extent by the bursting of the U.S. housing bubble, is offered by some as evidence of this.

Prior to the global financial crisis, from the 1980s, governments were less influenced by Keynesian arguments for government stabilization of output and employment to smooth out the business cycle. Instead, the emphasis was on limiting inflation and on public policies to promote long-run growth of productive capacity. Booms and recessions continue to succeed each other, transmitted internationally through trade and investment flows in an increasingly integrated global economy, but with different countries not always in the same phase of the cycle at the same time. Since the breakdown in 1973 of the Bretton Woods system of fixed exchange rates, these fluctuations in prosperity and international payments have been accompanied by fluctuations in exchange rates (with the adoption of the Euro, initially by eleven European countries in 1999, reducing the number of exchange rates and currencies, and thus reducing the possibilities for variation). Economists now use the terms *trade cycles* or *business cycles* to mean economic fluctuations, without any implication that the fluctuations are cycles of fixed duration.

The fluctuating pattern of economic prosperity and depression has had deep social effects throughout history, and fluctuations continue to recur, as the result

of shocks such as the creation of the OPEC oil cartel, the invention of a new technology, wars, or weather, or as the result of waves of optimism and pessimism among investors. The process of economic growth has not been, and likely will not be in the future, smooth and steady, but will consist of fluctuations around a trend.

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See also Economic Cycles; Economic Growth; Long Cycles

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Trading Companies, Iberian

The first great European merchant empires to establish global commercial networks during the early modern era were those of Spain and Portugal, on the Iberian Peninsula, during the fifteenth and sixteenth centuries. But their trading companies appeared later than, and in response to, those of their European rivals, especially the Dutch and the English.

Those commercial trading networks of Spain and Portugal on the Iberian Peninsula provided substantial revenue for both countries and galvanized rival European powers to tap into lucrative markets in the Americas, Asia, and Africa, where, for instance, they traded in European horses, leather, textiles, pepper, Sudanese ivory, metal products for luxury goods such as gold, and slaves. Because the Iberian powers had the advantage in first establishing these economic structures with few other European rivals in these global markets, Iberian companies were not necessary, at least initially. Spanish and Portuguese trading companies patterned along lines similar to the companies of their Dutch and English rivals appeared during the seventeenth and eighteenth centuries.

Exploration and Trade Expansion

The chance to profit from commercial opportunities drove both the Portuguese and the Spanish in their exploratory voyages, which were outgrowths of those conducted during the Middle Ages. Two such voyages were the rediscovery of the Canary Islands in the mid-1300s by Genoese sailors in service to Portugal and the 1291 voyage of Ugolino and Vadino di Vivaldi,

who disappeared near Safi, Morocco, due to their attempt to circumnavigate Africa.

Beginning in the early fifteenth century, the Portuguese extended their influence in the Atlantic Ocean through a series of journeys down the West African coast. In exchange for Iberian agricultural products, the Portuguese received gold, fish, and slaves from North Africa. Establishing colonies and sugar plantations in places such as the Azores and Madeira islands permitted the Portuguese to obtain a geographic advantage in their further exploration of economic opportunities in Africa.

The foundation of fortified trading posts was significant for the development of Portugal's economic empire. São Jorge de Mina, located in modern Ghana, was one such post, where the Portuguese traded European horses, leather, textiles, pepper, Sudanese ivory, metal products for luxury goods such as gold, and slaves. Profits received from this trade helped the Portuguese to fund further explorations down the coast. These posts, established soon after the first Portuguese incursions were made into new areas, were designed to control trading routes. Through the supposed military superiority of their ships and cannons, the Portuguese sought to force other merchant vessels to dock at these posts and pay duties. By the middle of the sixteenth century the Portuguese had more than fifty such fortified entrepôts, extending from West Africa to East Asia. But thanks to the strength of Muslim, Indian, and Malay merchants, combined with the dearth of Portuguese vessels, Portuguese dominance of the Indian Ocean shipping lanes was never a foregone conclusion.

Spain, though it maintained a distinct economic presence in the Far East, focused its mercantile

attentions largely toward the Americas. Spain founded an empire based on land rather than setting up a string of trading ports as did the Portuguese. The 1545 discovery of enormous deposits of silver in Potosí, located in modern Bolivia, was a watershed event for Spain's imperial history. Mining became a singularly important industry within Spanish American territories, and the silver galleons that sailed the seas from Acapulco to Manila were crucial to Spain's political and mercantile empire. Demand for silver, the principal currency of the Chinese economy, was very high within Asian markets. Between 1570 and 1780 CE anywhere from 4,000 to 5,000 tons of silver crossed the Pacific Ocean. Because the Spanish crown received a fifth of the bullion, the trade in gold and silver across both oceans was quite lucrative.

Trading Companies

Though Portuguese and Spanish trading companies are not as well known as their English or Dutch counterparts, such as the English East India Company or the Dutch United East India Company (Vereenigde Oost-Indische Compagnie), privileged Iberian trading companies nonetheless played a substantial role in the early modern era. In 1685, the Portuguese founded a company for the purchase of slaves, one of the more profitable aspects of their transatlantic trade. It was not until the eighteenth century that the Spanish formally chartered several companies for their trade in the Indies. The 1728 founding of the Royal Guipuzocan Company of Caracas linked Venezuela with the Basque country in Spain and monopolized the cacao market until 1780. Additional Spanish companies included the Royal Company of Havana, founded in 1749 and designed to spur interest in Cuban agriculture and trade; the 1747 Royal Company of San Fernando of Seville, which focused on parts of the South American trade that were not covered by other companies; and the Royal Company of Barcelona, founded in 1765, which covered trade with the islands of Santo Domingo, Puerto Rico, and Margarita. These companies, designed to

revive Spanish fleets and drive out foreign merchants, did not monopolize trade in the Caribbean for long. The Seven Years' War (1756–1763) saw the Spanish government open trade to Spanish ports left out of official companies' trading partnerships. In 1778, the government allowed partial foreign shipping into the Indies and restrictions on free trade were lifted completely in 1789.

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See also Spanish Empire

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Trading Patterns, Ancient American

Trade was widely practiced in all parts of the ancient New World, among societies of all levels of social complexity, from the earliest hunter-gatherers to late prehistoric empires like the Aztec and Inca. But the high costs associated with overland human transport produced a volume of long-distance trade lower than that found in many other ancient societies.

The native peoples of the New World exhibited a great diversity of trading patterns before the European invasion. In most ancient American societies, trade and exchange were strongly embedded within social institutions and practices. The long-distance trade identified by archaeologists was typically only one component of wider processes of social interaction that included exchanges of ideas and information, warfare and diplomacy, marriage alliances, and migrations of peoples. Trade assumed an independent commercial status only among the late states of Mesoamerica (Mexico and northern Central America).

Earliest Inhabitants

The timing of the initial migrations to the New World is a topic of considerable debate. Regardless of their actual age, however, the earliest archaeological sites in North and South America provide evidence for a low level of long-distance trade. During this time, known as the Paleoindian period (c. 15,000 BCE–8000 BCE), small bands of hunters and gatherers traded projectile points and other tools made of high-quality chert (a variety of silica) and other varieties of stone over

moderate distances. The finely made and distinctive Clovis spear points were used over much of North America. These objects were made separately in many regions, and their similarities derive from a common technology that points to long-distance interaction throughout North America. Obsidian, a volcanic glass from which extremely sharp cutting tools were made, was first traded in the Paleoindian period. Obsidian occurs geologically in only a limited number of mountainous areas in western North America, Mesoamerica, and the Andes. Each source area has a distinctive chemical “fingerprint” in the occurrence and quantity of trace elements. When subjected to any of a number of analytical techniques for measuring trace elements, an obsidian artifact’s geological place of origin can be traced.

In most parts of the New World, the Paleoindian period was followed by the Archaic period (starting c. 8000 BCE and ending at different times in different areas). This was a time of growing populations, increased reliance upon plant foods, and growing technological sophistication. In Mesoamerica, the Andes, and the Amazon, plants and animals were domesticated at this time. The Archaic period furnishes evidence of increasing long-distance trade of stone tools. Although the evidence for trade is clear in the Paleoindian and Archaic periods, the overall volume of exchange was low and people obtained most goods in their local area. Trade was probably organized in what archaeologists call “down-the-line trade,” in which trade goods move through reciprocal exchange from group to group without merchants or long-distance exchange expeditions.

Nay, be a Columbus to whole new continents and worlds within you, opening new channels, not of trade, but of thought. • **Henry David Thoreau (1817–1862)**



This Cayuse woman from Oregon wears shell disk earrings, a shell bead choker, and shell beads, items used since ancient times for trade and as burial goods. Photo by Edward Curtis circa 1910. Library of Congress.

North America

The roster of North American long-distance trade goods increased dramatically with the end of the Archaic period to include marine shell, ceramics, and objects made of copper, galena, obsidian, and other types of exotic stone. The frequencies of imported goods were typically much higher than in Paleoindian and Archaic times. Obsidian found at sites in eastern North America and marine shell ornaments at sites far inland show trade over long distances. Several later cultures are noteworthy for high quantities of imported goods. The Hopewell culture of the North American Midwest, for example, is best known for its elaborate public ceremonialism centered on earthen

mounds and open plazas. Some Hopewell burials and other offerings contained thousands of ornaments and other finely crafted objects, many of which were imported from great distances. Imported burial goods include at least ten types of native copper ornaments, finely-made stone bifacial tools, obsidian objects, mica mirrors, smoking pipes of clay and stone, ornaments of human bone and bear's teeth, tools of deer bone, quartz crystal, shell beads, and silver objects.

The emphasis on ornaments among the imported goods of the Hopewell and other North American cultures suggests that social factors were more important than strictly economic factors as stimuli for trade. Elaborate ornaments and exotic goods were most likely used in ceremonies and at other public gatherings (before being deposited in offerings) to communicate information about social identity and status. They probably served as sources of prestige for high-ranking individuals. This pattern continued in the most politically complex and spatially expansive North American culture, the Mississippian culture of southeastern and midwestern North America (c. 1000–1550).

Archaeological sites of the Mississippian culture are larger and more numerous than those of earlier cultures. The largest Mississippian site—Cahokia—was a true urban center with a substantial population, monumental architecture, powerful rulers, and various types of craft specialists. Many archaeologists classify Cahokia as an example of the chiefdom form of political organization. Cahokia was located in the American Bottoms (in Illinois, across from St. Louis), the largest expanse of rich alluvial floodplain along the Mississippi River. This region had numerous Mississippian settlements, all engaged in agricultural production and many with active craft industries. Exchange was extensive on both the regional level (linking the sites in the American Bottoms area) and the macroregional level, as evidenced by a variety of exotic imported goods found in excavations. Although some utilitarian goods were widely traded—particularly agricultural hoes produced from high-quality chert—most Mississippian trade goods were ornaments, ritual items, and the raw materials used to



Mayan burial site. Archaeologists have found evidence of imported luxury items by examining burial offerings and other excavations. Photo by Arturo Delfin.

produce such goods (including copper, marine shell, and a variety of precious stones). The organization of Mississippian trade probably included down-the-line trade, gifts among localized elites, and exactions of taxes or tribute from subject populations.

Mesoamerica

Mesoamerica is a cultural area whose numerous peoples and cultures shared a variety of traits and

practices. The commonalities that defined Mesoamerica were sustained by systems of long-distance interaction that included exchanges of both goods and ideas. Although long-distance trade goes back to the earliest inhabitants of Mexico and Guatemala, the distinctive exchange systems that created and defined Mesoamerica as a distinctive area developed after the start of the Formative period (c. 1600 BCE). In cultural terms, the Formative period saw the spread of a way of life based upon agriculture, sedentism (year-round villages), and

pottery. Chiefdoms soon developed in several parts of Mesoamerica, including the Pacific coast, the Valley of Oaxaca, central Mexico, and along the Gulf of Mexico (home of the Olmec culture). The rulers of these polities exchanged a number of goods, including jadeite, serpentine, and other precious stones; obsidian tools; ceramic vessels; iron ore mirrors; shell ornaments; and various animal products used in ritual, such as sting-ray spines and turtle shells. As in the case of Hopewell and Mississippian exchange in North America, most trade goods were luxury goods used in social display and ceremonial performance, and the production, exchange, and consumption of these goods was probably under the control of chiefs and elites.

The Classic period in Mesoamerica (c. 250–900) was marked by the rise of powerful states in most regions. In the jungle lowlands of Guatemala and Mexico, Mayan kings ruled city-states from urban centers with abundant monumental architecture. Imported luxury goods were essential elements in the elaborate public performances and lavish lifestyle of these rulers. Kings often adorned themselves with imported precious stones (such as jadeite and obsidian) and headdresses of tropical bird feathers. They sponsored exclusive elite feasts at which foodstuffs such as cacao and other delicacies were served from elaborate painted pottery vessels. Obsidian had to be imported from distant sources, and most Classic-period Maya obsidian objects functioned in the realm of social display and rituals.

The contemporary Teotihuacán state of central Mexico presents a cultural and economic contrast to the Maya polities. Less flamboyant than their Maya counterparts, the rulers of Teotihuacán concentrated more effort on trade and craft production. Located near several major geological sources of obsidian, Teotihuacán controlled the production and trade of obsidian tools and jewelry in northern Mesoamerica. Excavations have located numerous craft workshops, and Teotihuacán houses have yielded goods imported from all parts of Mesoamerica. Teotihuacán exports—found all over Mesoamerica—include ceramic vessels in addition to obsidian objects. Some kind of special economic and diplomatic relationship existed between Teotihuacán and the city of Monte

Albán in Oaxaca, and a colony of merchants from the latter area has been excavated at Teotihuacán.

The transition to the Postclassic period (900–1520) was marked by a significant increase in economic activity in most parts of Mesoamerica. For this period, written historical records supplement archaeological evidence, and it is clear that highly commercialized long-distance trade flourished.

Caribbean Islands

The initial inhabitants of the Caribbean islands, most likely immigrants from the Mexican mainland, traded with peoples of northeast South America for crystals and other ritual items. A major migration from South America began c. 2000 BCE, bringing new peoples into the Lesser Antilles and eventually to most of the Caribbean. These “Saladoid” peoples, ancestors of the Tainos, maintained contact with people in South America through trade in a variety of goods. From earliest times, the peoples of the Caribbean were expert mariners who used dugout canoes to undertake both local and long-distance voyages. Trade within islands and between adjacent islands was extensive in all periods, whereas the extent of long-distance trade varied across time and space.

The major long-distance trade goods found at archaeological sites in the Caribbean are chert (for flaked stone tools), pottery and volcanic pottery temper, beads made from a variety of exotic stones (e.g., quartz crystals, amethyst, and diorite), and ornamental carved stone objects (including distinctive stone pestles). The trade connections with South America were still going strong with Columbus arrived in the Caribbean. He noted ornaments of a gold-copper alloy worn by Taino chiefs. The Taino worked locally-occurring gold but did not cast metal, and these ornaments must have been obtained through trade with the South American mainland.

South America

As in North America and Mesoamerica, long-distance exchange in South America started with the



earliest hunter-gatherers of the Paleoindian period. Exchange throughout the Amazon Basin was probably extensive in most periods, but since the bulk of the material culture consisted of perishable goods this trade is difficult to document archaeologically. Early explorers and travelers reported active riverine exchange systems that some scholars treat as models for earlier periods. For a variety of reasons, trade is easier to study archaeologically in the Andean region. After the development of chiefdoms and states in the Andes, several goods of limited occurrence were widely traded over great distances. Of these goods, obsidian and marine shell stand out. There are fewer geological sources of obsidian in the Andes than in Mesoamerica, but Andean peoples made active use of the superior cutting edges of this stone in all periods. Marine shell was another important trade good in the Andes. Particularly valued was the colorful shell of the spiny oyster (genus *Spondylus*), used to make ornaments and ritual goods. These shells occur naturally only along the Pacific coast of Ecuador and Central America, and their presence at sites in the Andes was due to long-distance exchanges with northern groups. Metallurgy developed early in the Andes (c.1800 BCE), and objects of gold, silver, and bronze were widely traded.

The entire Andean zone was linked into a single cultural and economic system during three periods, called “horizons” by archaeologists. The Early Horizon (800–200 BCE) was dominated by the Chavín culture. The central settlement, Chavín de Huántar (in present-day western central Peru), has yielded archaeological evidence of exchange with both the Amazonian lowlands and the Pacific coast. Mechanisms of long-distance interaction included both the exchange of goods and the spread of the Chavín art style, which was probably the material expression of a common religious system that linked numerous localized small polities. The Middle Horizon (600–1000) witnessed the spread of two major art styles centered on the cities of Huari and Tihuanaco (in the central and southern Andes, respectively). Huari was the capital of a territorial empire in which both trade and the imperial art style contributed to political integration and domination. During the Late Horizon (1400–1530), the Inca

Empire expanded rapidly to control nearly the entire area of the Andes and the Pacific coast.

The peoples of the Andes made use of a number of distinctive trading patterns quite different from those of Mesoamerica and North America. Most important was a strong desire for self-sufficiency on the part of villages and polities. The varied environments of the Andes, caused primarily by differences in elevation, are often in close juxtaposition. Rather than having villages in each zone specialize in local products and trade with one another (as happened in Mesoamerica), villages and polities sent out temporary settlements to exploit different zones so that each social unit could be self-sufficient by controlling the products and resources of many zones. This pattern was first described by the anthropologist and historian John Murra, who called it “verticality.” The Inca rulers adapted self-sufficiency and verticality to their empire, with the result being a bureaucratic, state-run economy. Taxes were paid in labor as well as in goods. Managers organized labor parties and tracked the storage and movement of raw materials, flocks of llamas and alpacas, foods, and craft products. Money, markets, and independent merchants did not exist in the Inca Empire, although these institutions did occur among some Andean groups outside the reach of the empire.

Ancient American Trading Patterns

Native inhabitants of North America, the Caribbean, and early Mesoamerica traded mostly ceremonial and luxury goods, at low quantities in the first two areas and at higher quantities in Mesoamerica. Late Mesoamerican peoples adopted commercial exchange institutions that raised the volume of trade and extended the diversity of goods exchanged. In the Andes, a drive for self-sufficiency led to distinctive state-run trade systems. Overall, the high costs associated with overland human transport produced a volume of long-distance trade lower than that found in many other ancient societies.

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See also Andean States; Art—Pre-Columbian Central and South America; Aztec Empire; Inca Empire; Mesoamerican Societies; Mississippian Culture; Trading Patterns, Mesoamerican

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Trading Patterns, Ancient European

Geographical advantages on the peninsula that is Europe enabled the development of trading networks from an early date. Rivers and long coastline provided the highways by which goods and peoples moved with increasing freedom. Amber, metals, and grain were early commodities; urbanization brought roads, empires, and commercial networks that reached their peak in the second century CE.

Europe is a broad peninsula spreading westward from the Ural Mountains. Black and Mediterranean seas wash its southern shores, the Arctic Ocean its northern shores. To the west, Europe is bounded by the Atlantic Ocean, in which the great continental islands of Britain, Ireland, and Iceland sit. The coastal extremities of the greater European peninsula are in turn fragmented into number of smaller peninsulas: the Italian, the Greek, the Iberian, and the Scandinavian. The land mass is mountainous, although not impassably so, and the plains are intersected by great rivers that flow from the mountain ranges to the sea. Great river systems, in particular the Rhine, the Danube, the Dnieper, and the Rhone, connect the coast with lands far inland. These geographical advantages enabled the development of trading networks from an early date. In the absence of roads, the rivers and long coastline provided the highways by which at first goods and later people moved with increasing freedom.

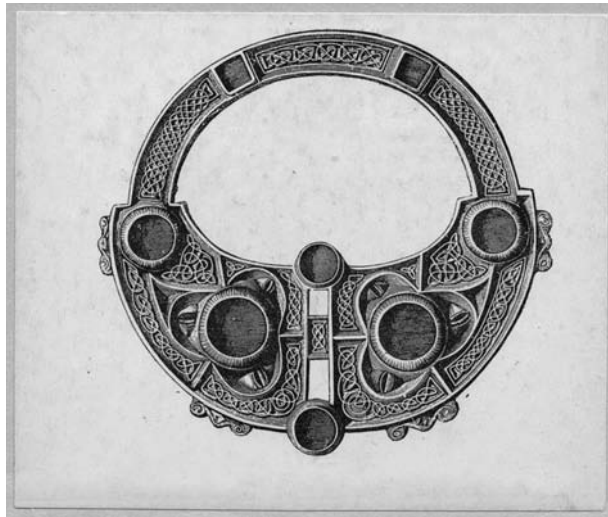
The Foraging Era

Europe was peopled by anatomically modern humans (Cro-Magnons) from about forty-five thousand years

ago. Habitation was initially limited to the more temperate southern coastal lands, because further north much of the landscape was dominated by the glaciation of the last great Ice Age. Such severe climatic conditions demanded ingenuity on the part of those humans who moved into those regions. Over millennia, a portable and flexible technology was developed in which there was a high demand for fine-grained stone cores (shaped but not completed stone tools). While it is clear that human bands dispersed during the long winters, all the better to subsist, there is good evidence to suggest that they gathered during the summers. For example, there is no doubt that they exchanged objects and, as a result, some artifacts moved a very long way from their initial point of origin. Baltic amber has been found at Cro-Magnon sites in southern Europe and seashells and sharks' teeth far inland.

The Neolithic Era

The melting of the ice sheets, with the resulting rise in sea levels, was complete by about 10,000 BCE. It was only then that Europe, as we know it, finally took shape. The North Sea and the Black Sea were flooded; rising sea levels also created the Aegean archipelago, cut Sicily off from Italy, and divided Sardinia from Corsica. The principal cultural development of the Neolithic is farming on dry, nonirrigated land. This resulted in the emergence of village communities and the development of more specialized technologies. It is also possible to begin to identify the emergence of an agricultural surplus as a tradable commodity. Luxury items have been found very far inland: in particular, shell jewelry of Aegean origin at sites



Celtic art object made of iron. From *Scotland in Pagan Times: The Iron Age*, by Joseph Anderson (1832–1916). New York Public Library.

in Germany and Hungary. Obsidian from the Lipari islands has been found in Malta, and the island of Melos served as a source for much of the obsidian used in the eastern Mediterranean. It has been argued that the trading networks established in the Neolithic of Mesopotamia/Anatolia for the distribution of obsidian established the trading patterns that dominated the ancient Mediterranean world.

It is unlikely that such goods were taken directly from the place of manufacture to the sites where they have been found. In all likelihood, they were transported indirectly through a series of relays. This kind of “relay trade” is the principal way in which goods were moved long distances for most of antiquity, and it remains significant that only luxury goods were capable of being moved in this way, since only they could sustain the margins being added at each point of exchange.

The Amber Route

A good example of this early relay trade is amber, a commodity that was highly prized from the foraging era onwards, and the principal source of which, in Europe, was the Baltic region in the vicinity of the modern Russian territory of Kaliningrad. Very sophisticated networks for the transportation and distribution of Baltic amber were established during the Neolithic and continued into the classical period.

Amber is found in the early Bronze Age graves of Mycenae, the middle Bronze Age ship wrecked near Ulu Burun, and the magnificent tomb of the Pharaoh Tutankhamen.

The amber was transported along the coast of the Baltic to the River Elbe. From there, it was taken far upstream. In southern Germany, it was transferred to transport overland, making the journey through the Alps and down to the Adriatic Sea. From ports on the Adriatic, it was transported, mostly through cabotage (that is, local trading networks), to the great economic centers of the ancient world.

The Metals Trade

The increased working in metal ores marked the end of stone-based technology. One stone that became extremely popular, where it was available, was raw copper. There were a number of major deposits of copper in European centers—in particular, the Balkans and the island of Cyprus. There were also smaller deposits elsewhere. When the frozen body of Ötzi, the Ice Man, was discovered in a glacier on the Austrian-Italian border, he was found to be carrying a copper axe, which had been quarried locally, and which he had (probably) worked himself.

Nevertheless, copper-producing regions became the centers of trading networks. In many cases, these simply followed the same patterns as those established in the Neolithic. Deep copper mines were already operating in the copper-rich region of eastern Serbia in the fifth millennium BCE. Copper from the Balkans supplied a rich culture across what is now Hungary, Rumania, and Yugoslavia. In the same way, copper from Cyprus supplied the needs of the eastern Mediterranean. It was in this region that it was discovered that copper could be alloyed with Anatolian tin to make bronze. This in turn drove a demand for the much scarcer ore.

The emergence of the demand for tin broadened the Mediterranean trading network. While there were sources of tin in the Mediterranean world, the major source was tin-rich Cornwall. Herodotus refers to Britain as “the Tin Islands” (*Cassiterides*) and



Roman legionnaires build a camp and excavate a road (at left); horses transport a ballista (bottom right). The sophisticated Roman road system accommodated the free and easy movement of goods. New York Public Library.

Cornish tin found its way to the Mediterranean, either by a short sea trip to the mouth of the Loire, then up the Loire and down the Rhone to the coast, or by a long sea trip through Gibraltar to southern Spain. Like the amber route, this tin route connected the extremities of the European world through a network of exchanges.

Other highly prized metals were also being increasingly traded over long distances. Spanish silver and Irish gold both found their way into the Mediterranean trading world. By the middle Bronze Age large amounts of metal were being extracted, smelted, and traded. The Ulu Burun wreck, for example, carried six tons of copper, all cast into distinctive “ox-hide” type ingots, slabs of pure copper cast into the shape of an outstretched ox-hide. It is significant that this form of ingot had become standard throughout the Mediterranean world by the second millennium BCE.

The Rise of Urbanism

One other highly significant feature of the second millennium BCE was the development of palace cultures, cities, and city-states. These created economic differential, the possibilities of economic specialization, and particular centers of demand. The earliest urban cultures were situated away from the Mediterranean world, in the river valleys of Mesopotamia, the Nile, the Indus, and the Yangzi (Chang). By the middle Bronze Age, however, there was an elaborate palace culture on Crete, and complex urban entities were forming in Greece and Italy. Cities provided fixed markets for goods and secure environments for the

storage or conversion of surplus. Cities became the principal points of exchange in the relay trade and of economic distribution for their surrounding regions. Trade became so important to the cities of the Mediterranean coast that by the first millennium BCE they were sending out trading colonies.

The Phoenicians sought to exploit southern Spain, setting up a series of trading and mining colonies referred to in the Greek sources as “Tartessus,” and in the following centuries, the Greeks followed suit. One Greek colony of great significance was that of Massilia (modern Marseilles) at the mouth of the Rhone River, a site that enabled considerable control of the tin trade, challenging the Phoenician (increasingly Carthaginian) control of southern Spanish ports. Another was the city of Byzantium, located strategically on the Bosphorus, the narrow strait between the Black Sea and the Sea of Marmara, and therefore well situated to take advantage of trade between the cities of the eastern Mediterranean and the cultures surrounding the Black Sea.

The Grain Trade

One significant result of the development of urbanism was that the growth of some cities outstripped the productive capacities of their agricultural resources. While an initial answer to this was depopulation through colonization, ultimately a number of cities needed to import food. Grain imports soon became important, particularly for the agriculture-poor Greek city-states. A particularly important maritime route was established between Athens, the hungriest of

No nation was ever ruined by trade. • **Benjamin Franklin (1706–1790)**

the cities, and the Bosporan kingdom in the Crimea. The ancient ports of the Crimea sent out shiploads of grain, receiving, in turn, bullion, wine, olive oil, and elegant pottery. In the same way, other Greek states maintained links with the agriculturally wealthy Greek colonies of Sicily.

By the fifth century BCE, the entire Mediterranean was a well-travelled highway, serving the hungry markets of Greece, Anatolia, and Syria. There are two clear indicators of this: the introduction of coinage in Anatolia in the sixth century, which made processes of exchange easier, and the growth of piracy. While briefly suppressed by the Athenians in the eastern Mediterranean, it remained a major problem throughout the Mediterranean until the advent of Roman naval dominance in the first century BCE.

One feature of European trade that the pirates exploited was the trade in people as commodities: the slave trade. Large numbers of slaves came into the European economic system from the Eurasian steppe via the Black Sea. Others came from Thrace, Greece, and Anatolia, even well into the Roman period.

The Celts

Urbanism did not penetrate far north of the Mediterranean fringe. From the beginning of the first millennium BCE, the region between eastern Germany and the Atlantic coast of France was dominated by Celtic peoples. Principally farmers and pastoralists, they nevertheless exploited mineral deposits where they could find them. Salt mines in Austria were opened up and the salt exported to the Adriatic. Iron was also mined and worked in southeastern France and exported to the Etruscans and Greeks of Italy. Gold, wine, and elegant pottery wares were imported. In the same way, Celts also exported goods north, in particular bronze and iron artifacts. Technology was also exchanged. Celtic kingdoms began minting gold coinage, probably in imitation of Macedonian coinage, in the third century BCE. These exchanges were insufficient to prevent conflict between the Celtic and Mediterranean worlds, however. Major Celtic raids in the fourth and third centuries BCE saw a Celtic

kingdom established in Anatolia, and Rome itself sacked. It was, nevertheless, the Romans who brought regularity and security to western and southern European trade.

The Romans

When Julius Caesar conquered Gaul in the first century BCE, he brought it firmly into the Mediterranean economy. The subsequent conquests of Britain, Illyricum (the modern Balkan states), and the western part of Germany brought much of Europe into close economic contact. One major feature of Roman rule was the construction of roads; another was the suppression of banditry and piracy. Goods could travel long distances quite freely. Just as Athens had been dependent upon imported grain from the Crimea, the vastly bigger city of Rome received its grain in great freighters that sailed from grain ports in Africa, Sicily, and Egyptian Alexandria. The Roman network of roads and maritime routes made travel around and across the Mediterranean and deep into its European hinterland a relatively straightforward proposition.

Trading was no longer dependent upon cabotage, although that was still the most frequent type of trade. Rather, a number of mercantile diasporas were established throughout the Roman world and beyond it: Syrians, Jews, and Greeks established subcommunities within great cities like Rome and Alexandria. While this sometimes led to conflict, it also led to the spread of ideas. Christianity spread swiftly throughout the Mediterranean world and beyond it because of its strong base in Jewish Diaspora communities.

By the second century CE, the European economy was highly complex and interconnected. It has been spoken of as a segment in an increasingly complex world system. As such, it was subject to economic fluctuations. The long recession of the third century was felt throughout Europe, and it made Rome itself vulnerable to raids from predatory foreign peoples, which depressed the domestic economy even further. The subsequent recovery was partial, and by the late fifth century the Western Roman Empire had collapsed, disrupting ancient lines of trade and

communication. While the Eastern Roman (or Byzantine) Empire continued in existence for another millennium, it was never again so dominant a military and economic presence.

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See also Celts; Viking Society

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Trading Patterns, China Seas

The China Seas, a term coined by European navigators and cartographers, comprise five bodies of water adjacent to the country's 14,000-kilometer-long coastline. Although the Chinese were not generally seafarers, throughout much of China's history the major ports of the China Seas have been important in coastal, regional, and long-distance trading patterns.

For most of its long history, Chinese civilization has turned its back to the sea and has focused inward. The Chinese, as a general rule, have not been a seafaring people. Only a tiny fraction of the population of China derived their livelihood from maritime activities—fishing, overseas trade, piracy, or naval warfare. With the exception of the early fifteenth-century Admiral Zheng He, few Chinese mariners undertook long-distance voyages. But a coastline of about 14,000 kilometers (within today's borders of the People's Republic of China) makes maritime defense a significant factor of any government's security policies. Also significant is the establishment of port towns along the coast, many of them in the river estuaries of South and central China. The main economic function of these towns and cities was to organize exchange with commercial communities across the China Seas.

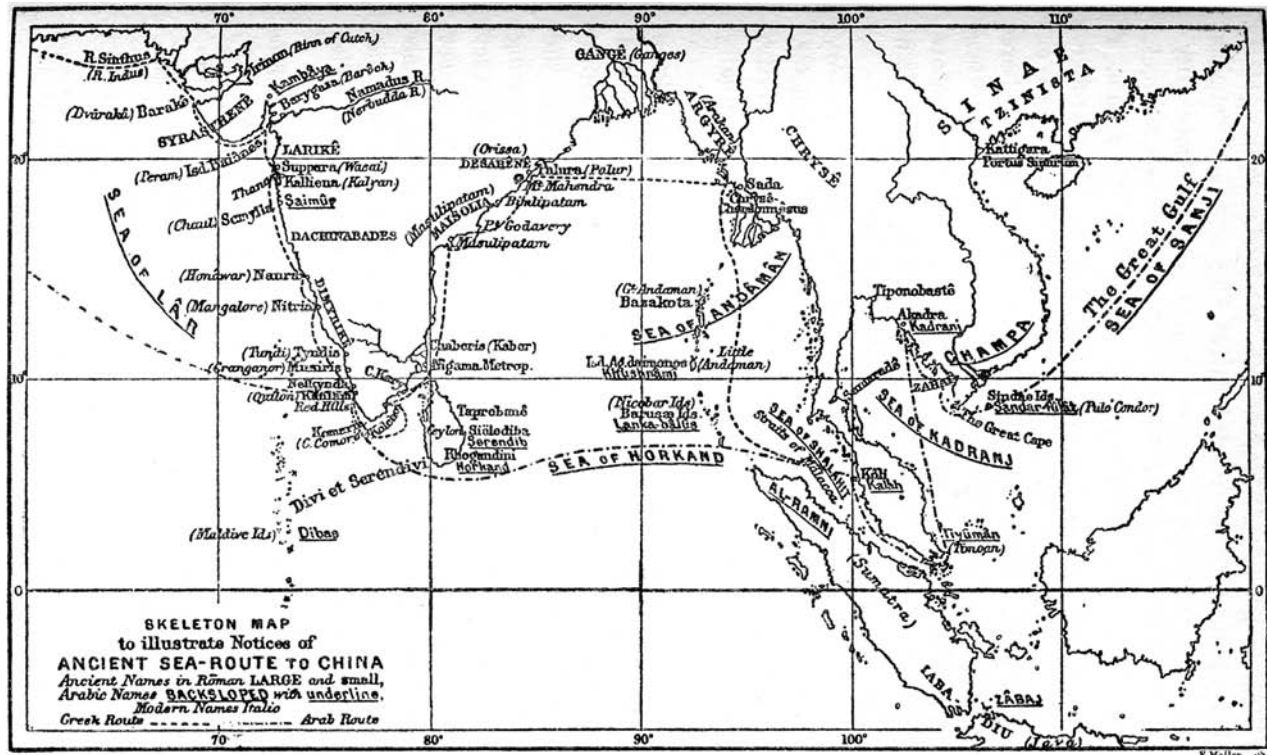
The Triple Function of the China Seas

China Seas is a summary term coined by European navigators and geographers and is rarely used in China. Chinese maps and geographic manuals distinguish between five different expanses of water adjacent to the Chinese coast: the Gulf of Zhili, called

Bohai in Chinese, south of Manchuria; the Yellow Sea, called Huanghai, between North China and the Korean peninsula; the East China Sea, called Donghai, into which the Yangzi (Chang) River discharges its waters; the Strait of Taiwan, called the Taiwan Haixia, separating that island from Fujian Province; and the South China Sea, called Nanhai, which is the maritime "foreland" of the southernmost Chinese province, Guangdong.

These maritime spaces are clearly separated from the high seas of the Pacific Ocean and the Indian Ocean. Yet, in an important way, they form a connection between both: for centuries after the arrival of European shipping in East Asia, the principal route from India into Pacific waters led through the Strait of Malacca and the South China Sea and then round the northern tip of the Philippine archipelago.

This fact points to the triple function of the China Seas, considered in terms of economic geography. In the first instance, they serve as an avenue for China's coastal trade. Coastal trade has always been vital for the integration not only of the various seaboard districts, but also of all the eastern provinces of China. Before the advent of the railroad it was indispensable for transporting bulky goods in a north-south direction. Second, the China Seas are the arena in which regional trade between China, Japan, and the countries of Southeast Asia unfolds. No other function is more important than this one. The China Seas gave rise to and still support a dense network of commerce connecting different economic systems which in many ways complement one another. Third, access to the oceans necessarily leads through the China Seas. In the long run, the China Seas' transit function is probably their least important aspect, assuming



This nineteenth-century map shows the ancient sea routes used from Greece and the Arabian Peninsula to and from China.

major importance only with the rise of the Guangzhou (Canton) trade in the early eighteenth century. But at least for modern times, it forms part of the complete picture. By definition, the predominant emporia are those that combine all three of these functional tasks. These major ports are simultaneously pivots of coastal, regional, and long-distance traffic and commerce.

Fourteenth-Century Trade in the South China Sea

The great achievements of Chinese nautical engineering have been reconstructed by modern scholars for epochs even earlier than the establishment of the empire in 221 BCE. Only with the Ming dynasty (1368–1644), however, does a comprehensive picture of maritime trade emerge. The basic type of ship, in use for many centuries, had already been developed during the tenth century. This “Fujian ship” (*fuchuan*), a safe, spacious, and fast vessel, proved admirably suited to the trading conditions in the China Seas.

It later evolved into the cheap and popular “shallow-water ship” (*shachuan*), an even more advantageous type of flat-bottomed watercraft. Southeast Asian shipbuilders also provided technical innovation. The outcome was the ubiquitous junk (a word probably originating in Javanese, but later applied mainly to Chinese ships) that shaped European perceptions of the Asian maritime world.

Extended trading networks covering the South China Sea came into being as a result of two developments occurring in the fifteenth century. First, the Chinese government dispatched several huge fleets under Admiral Zheng He (c. 1371–1435) to establish contact with numerous countries in Southeast Asia and on the Indian Ocean. Although this policy was soon discontinued, several of the links formed by these naval missions were maintained as “tributary” relationships, in which ritual, diplomacy, and commercial interest interacted in a complicated way. The best example of a tributary relationship with a strong economic content is the Sino-Siamese (i.e., Thai) tributary trade, conducted officially between



the Siamese royal court and imperial representatives in South China. Its material underpinnings were the complementary structures of the two economies: Siam produced rice that was needed to feed the rapidly growing population of the southern provinces of Guangdong and Fujian. The Chinese demand for rice, in turn, was partly the result of the conversion of rice paddies into fields for cotton, tea, and mulberry trees for silk, all commodities used at home and in trade. In the opposite direction, Siam imported copper from mines in the Chinese province of Yunnan. This trading pattern persisted up to the middle of the nineteenth century.

Second, emigration from Guangdong and Fujian seems to have increased during the fifteenth century. Chinese merchant communities settled in various parts of insular and continental Southeast Asia. They were viewed with suspicion by the Ming dynasty, and after the Chinese authorities restricted maritime commerce much of their trading activity was considered illegal. This did not prevent a flourishing trade in spices, silk, timber, skins, gold, copper, tin, medicinal materials, and other valuable goods. Apart from Chinese merchants, many local groups, Arab traders, Indian businessmen (many of them from Gujarat) and even Japanese ships were involved in these commercial transactions, often ultimately driven by demand in an increasingly prosperous Chinese market. The famous pepper trade to Europe, for example, found its equivalent in vast exports of pepper from Sumatra and other islands to China.

The arrival of European ships changed the established trading patterns within the region without overturning them. The Europeans' main advantage lay in the size and armament of their ships (although Zheng He's exploring fleet compared favorably to those of his European counterparts). After a brief period of intrusive violence, the Portuguese understood the wisdom and even the necessity of partially adapting to Asian trade. The Dutch and later the British developed their own forms of "country trade," conducted by European trading firms along intraregional trading routes. European traders were closely dependent on indigenous producers, merchants, and providers

of credit. Long-distance trade to Europe remained in the hands of the European chartered companies. While the East India Company (EIC) preferred direct contact with Chinese merchants in Guangzhou (Canton) and other South Chinese ports, the Dutch *Verenigde Oost-Indische Compagnie* (Dutch East India Company, or VOC) relied on Batavia (present-day Jakarta) as its central emporium and collecting point in the East. Thus, Batavia served as a link between the various Eastern networks and the transoceanic shipping routes.

There is little statistical evidence for the scope of trade in the China Seas in the early modern era. Data on maritime customs revenue collected at ports in South China, however, indicate that the volume of trade multiplied between the sixteenth century and the 1820s. The expansion of foreign trade facilitated regional specialization all around the China Seas and thus had a profound effect on economic activity in the entire region. The rise of port cities, with their cosmopolitan communities of sailors and traveling merchants, contributed significantly to social differentiation. Yet there was no steady progress of opening up to the world. Japan's Tokugawa shogunate, the military government in power from 1600 to 1868, drastically curtailed Japan's foreign trade with all possible partners from the 1630s onwards, and while Chinese maritime commerce flourished after about 1720, many noncolonial entrepôts in Southeast Asia lost their dynamism at roughly the same time. Trade in the China Seas not only constantly changed its patterns in space, but also went through long-term as well as short-term cycles of expansion and contraction that were partly driven by political and military factors, as the market economy of maritime Asia in early modern times operated under conditions set by rulers and states.

Treaty Ports, Steam Shipping, and the World Market

The "opening" of China and the establishment of the earliest treaty ports (ports designated by treaty for trade) in 1842 was soon followed by the

introduction of steam shipping into Chinese coastal and riverine traffic. Steamers possessed advantages that had a deep impact on trading patterns. Their carrying capacity was far greater, they could easily operate on the sea as well as on major rivers, and their deployment could be organized by large-scale capitalist enterprises. In the China Seas, especially in the south, sail and steam continued to coexist for more than a century. The most dynamic lines of business, however, were captured by modern forms of transport.

From the 1820s through the 1870s, China's foreign trade was dominated structurally by illegal and, from 1858, legalized shipments of opium from India to China. This trade used the South China Sea for transit, but hardly affected Southeast Asia, where different networks of drug trafficking existed. An important change came with the economic development of the European colonies in that part of the world during the last quarter of the nineteenth century. The introduction of large-scale plantations and of mechanized mining as well as the intensification of peasant production for export integrated Southeast Asia much more closely into the world economy than ever before. Expatriate entrepreneurs of Chinese origin were instrumental in forging these connections. By this time, an overpopulated China became a supplier of cheap labor. Chinese emigrants took advantage of the agricultural and mining opportunities in insular and continental Southeast Asia and beyond. The migration of contract labor from southern China to various overseas destinations, termed "coolie trade" by contemporaries, was largely organized by Chinese recruiting firms, although transport remained in the hands of European-owned steamship companies.

It was a structural hallmark of Chinese foreign trade between the First Opium War (1839–1842) and the establishment of the People's Republic in 1949 that indigenous shipping companies secured a substantial share of the market in coastal and inland transport, but never succeeded in entering overseas shipping. China's lack of a merchant navy was symbolic of the country's subordinate position in the international

economy. Another new feature in the early twentieth century was incipient industrialization.

The Fall and Rise of China's Maritime Commerce

The Great Depression of the 1930s along with Japanese aggression against China and the Western colonies in Southeast Asia put a severe strain on the trading networks in the region. Exports of conventional commodities declined sharply during the Great Depression, when demand fell in Asia, Europe, and the Americas. Chinese emigration, formerly a mainstay of steam traffic in the South China Sea and also between North China and southern Manchuria, went into decline. After the Japanese occupation of Manchuria in 1931, the activities of Japanese shipping companies became ever more imperialistic. The formation of a Japanese-dominated trading sphere known as the "yen bloc" was a bid for autarky and protected export markets. In the early 1940s, the Japanese restructured large segments of long-distance trade according to the needs of their war economy. The Pacific War itself was caused in part by economic factors, such as the United States' petroleum embargo against Japan, put in place in July 1941, which made it clear to the Japanese that a self-sufficient empire unaffected by the world market was an impossibility.

The collapse of the Japanese Empire in 1945, the Chinese revolution of 1949, and the disappearance of European colonial rule in Southeast Asia after the end of World War II ruled out a return to prewar patterns of maritime commerce. Only Hong Kong survived as a first-rate emporium, now with a considerable industry of its own. A large part of the People's Republic of China's trade with Southeast Asia and Europe was channeled through Hong Kong. At the same time, the Communist government in China began the long-term process of reestablishing China's lost military sea power and mercantile presence in the China Seas and on the world's oceans. China's stated intention of acquiring an aircraft carrier is a serious indication of its intent to become a major maritime and naval

power capable of maintaining a presence and projecting that power well beyond China's shore.

In respect to trade, the China Seas remain a very significant and geostrategic body of water. With the rise of China as a major exporter of manufactures to the world, the establishment of a free trade agreement between the Association of Southeast Asian Nations (ASEAN) and between China and ASEAN, the China Seas remain one of the world's busiest sea lanes.

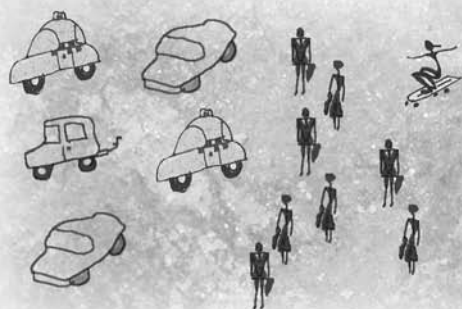
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See also China; Exploration, Chinese

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Trading Patterns, Eastern European

To understand trading patterns in Eastern Europe it is useful to examine the East–West divide of Europe that had its roots in the ancient and premodern world. With post-Communist globalization of trade, and the increasing exchange among European Union members in the twenty-first century, there is little reason to consider Eastern Europe as a distinct trading region.

If civilization means thinking about and acting toward “aliens” civilly, then globalization means thinking about and acting toward potential partners globally. Both concepts come into play when discussing European regional economic relations, which embody aspects of mutual alienation—here “alienation” is used in its original, general sense of being “other,” the Latin *alius*—especially between East and West.

The concept of “otherness” that divided Europe in terms of geographic longitude originated in two major “unifications” of classical times (the Greek Empire of Alexander the Great and the Roman Empire) and in two major, subsequent divisions (the split of the Roman Empire into a Western Empire ruled from Rome and an Eastern Empire ruled from Byzantium, and the Great Schism of 1054 between the Roman Catholic and the Eastern Orthodox churches). Both empires thus considered the rest of Europe as “other” from themselves, and the two divisions made Eastern “other” to Western, and vice versa.

Early East–West Trade

Whereas the boundaries separating “east” from “west” depressed trade and barter, the later religious division—the “north” remaining Christian and “south”

becoming Islamic—initially stimulated trade. The explanation lies in cultural asymmetry, be the boundary longitudinal or latitudinal.

In its crudest form the cultural divide was language, merely because that of the “other” was incomprehensible: Greeks and Romans called foreigners *barbari*, “barbarians,” parodying their tongues as *bah bah*; Slavs described foreigners as *nemets*, from the verb *nemet*, “to become dumb”; Russians and Poles later restricted the word to Germans (*nemtsy*; *niemcy*), paradoxically the nation with whom both political confrontations and economic exchanges were greatest. The cultural, political, and economic development of the “west” was more advanced than that of the “east” and tended to limit trade to the “western” import of raw materials and agricultural and hunting produce against its export of manufactures. Thus the treaty of 944 between Prince Igor of Kiev and Byzantium—the first formalization of east–west trade—imposed quotas on the quantity of silk goods that the *gosti*, or traders, of Kievan Rus could purchase annually. Although Suzdal succeeded it as the Russian capital in 1169, Kiev was (until conquered by the Mongols in 1240) one of Europe’s largest trade centers, a “Ravenna of the North.”

A reverse asymmetry was obtained across the north–south division of the Mediterranean and western Asia. Byzantium, and Europe generally, bought metal goods and textiles from networks spanning Alexandria and Damascus to Bukhara and Samarkand, cities that in the Middle Ages were more industrially advanced than those of Europe. The Silk Roads from Europe to Central Asia, along which Chinese, Persian, and Indian manufactures flowed, became the major channel of east–west trade when piracy



Tatar conquests lead to a far-reaching trade. Pictured in this illustration from a 1655 book by Martino Martini are treasures from several cultures collected in a cave. Beinecke Rare Books and Manuscript Library.

impeded use of the sea passages and Ottoman Turks blocked Christians from the southerly land routes. But by the time Marco Polo publicized the route's commercial attractions, cities in his native Italy were creating new forms of enterprise and new products in a proto-industrialization that would by the eighteenth century eventuate in Western economic superiority over the East.

Medieval Markets

Meanwhile, however, Russia had succumbed to the Mongols. Already controlling China, Persia and Transcaucasia from their Central Asian base, Tatar armies arrived on the Volga in 1236 and by 1240 had conquered most of the Russian principalities, which for two centuries thereafter paid tribute to the Khans of the Golden Horde. The command economy imposed by the "Tatar yoke" (*tatarskoe igo*) influenced the Russian administrative and fiscal structure—the present Russian words for customs house, label, money, and treasury derive from Mongol. The command economy itself was to return, albeit in modern and more complex form, in the Soviet system of 1918–1991. The

Republic of Novgorod resisted the Tatars and became the commercial capital of Russia: until the establishment of Saint Petersburg in 1703, the Novgorod Fair was the epicenter of east–west trade.

From the twelfth century the institutional setting for overland trade in Western Europe was the annual fair (*Jahrmarkt* in German), though its equivalent in Russia, derivatively the *yarmaka*, did not appear until the sixteenth century. German, Scandinavian, and Greek traders presented their goods for sale, which were purchased by Russian *gosti*, who supplied farm and forest products in return, organizing supply chains that for fur pelts stretched for more than a thousand kilometers. Merchants organized as the Hanseatic League were the most important Western mercantile community, while the Russians grouped themselves by sources of imports—*stetichniki* trading with Stettin, for example, or the *gotlandsky dvor* with Swedes. For the rest of medieval Eastern and Central Europe, the Frankfurt Fair was the cynosure among many regional fairs, convened around the feast day of locally venerated saints. Seaborne trade remained in the hands of foreigners, Venetians and Genoese in the Mediterranean and the Black Sea, and English

A fabric merchant in Samarqand, once the “dividing line” between East and West on the Silk Roads and a center of Islamic study, displays silk, cotton, and wool fabrics, as well as carpets, circa 1910. Photo by Sergei Mikhailovich Prokudin-Gorskii.



to the White Sea, whence Russian forests provided exports directly as timber, and indirectly as charcoal for smelting copper and iron and as ashes for bleaching linen.

Trade Between Modern Nation-States

The transition from medieval to modern statehood in Europe is conventionally dated at the Treaty of Westphalia in 1648, though the fiction of Europe's Holy Roman Empire was not to be terminated until Napoleon's fiat of 1801. Nation-states became economic as well as political entities, limiting by taxes, duties, and bans the trade of their citizens with others. Thus long globalization of Christian Europe ended—in the sense that within its area a trader could choose globally among potential partners. The largest state on the eastern side was, of course Russia, and its trade relations were transformed by Peter the Great (1672–1725). His visits in 1697 to his Baltic provinces, Prussia, Hanover, the Netherlands, and England provided the czar with models for far-reaching administrative and fiscal modernization and the encouragement of

trade and industry. The creation of his “window on the West,” Saint Petersburg on the Baltic Sea, and territorial expansion along the Black and Caspian Seas fostered commerce. Trade across the Pacific, however, had to wait for the founding of Vladivostok in 1860 and the construction of the Trans-Siberian Railway in the ensuing decade. Financial intermediation was internationalized by the opening of the Petersburg stock exchange, the Bourse (Birzha), in 1703, and by 1914 there were 115 stock and commodity exchanges across the country. Nevertheless it was not until 1897 that Russia went on the gold standard, only to suspend convertibility at the outbreak of World War I in 1914.

Between 1648 and 1914 the only large state of Eastern Europe was Poland until its dismemberment by Russia, Prussia, and Austria at the end of the eighteenth century. In the Balkans, Montenegro clung to a precarious autonomy throughout, with little to export save bandits; in the nineteenth century, Bulgaria, Romania, and Serbia gained their independence, but, being small and agrarian, their impact on European trade was negligible. Serbian pigs were herded to

My vision is that our country [Kosovo] should be integrated in the EU, to transfer a part of our independence there. It is also our duty to do it, if we want to establish trade and a sound economy. This is the vision that I am working on and I will continue to work in the future. • **Ibrahim Rugova (1944–2006)**

Austrian slaughterhouses, Bulgarian attar of roses and tobacco had niche markets, and in the later nineteenth century tankers shipped Romanian oil up the Danube. German occupation of much of the region during World War I nullified frontiers, but within a controlled *Kriegswirtschaft* (war economy) there was scant trade to flow across them.

Post-Habsburg Europe

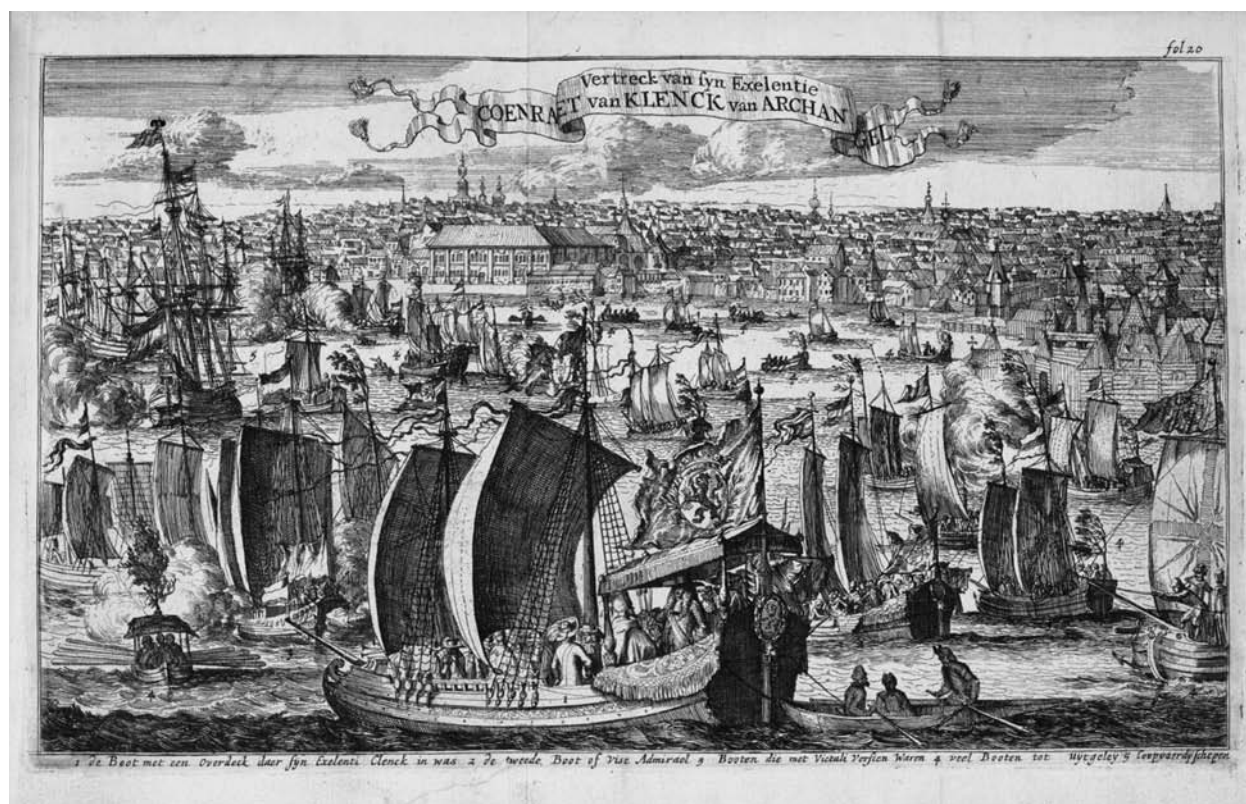
The leitmotif for Eastern Europe in the Versailles and Trianon peace treaties (1919, 1920) was national self-determination: Poland and Albania were reborn; Hungary, Czechoslovakia, and parts of a new Yugoslavia were separated from the Austro-Hungarian Empire, as was Transylvania, to enlarge Romania. Soviet Russia after Lenin's 1917 revolution lost territory to Poland and Romania. The immediate economic damage of the new frontiers was the disappearance of the Austro-Hungarian customs area: at the Portorosa Conference (1921) the successor states negotiated a set of protocols that could have restored a low-tariff basis, but governments never ratified them, and by the time of another failed attempt, the Geneva Conference of 1927, mutual tariffs were 39 percent of price. The reason lay in the smaller states' fear of economic and financial domination by Budapest and Vienna: Czechoslovakia, Romania, and Yugoslavia were concerned lest Hungary reinstate itself territorially or commercially. Nevertheless the foreign trade turnover of all seven, like that of the USSR (the title formally adopted by that nation in 1924) during its New Economic Policy (1921–1928), expanded during the 1920s. The reverse was true of the 1930s. The industrial exports of Czechoslovakia and Poland were worst hit by the world depression after the 1929 stock market crash, but all of the countries concerned lost export earnings as raw material and agricultural prices collapsed. Over the two interwar decades most countries exported only one-tenth of their national product (but almost double that in Czechoslovakia and Hungary), while after 1928 the Soviet Union retreated into near autarky under Stalin's five-year plans (by 1937 it exported only 0.5 percent of an enlarged

national product). The Eastern European reaction to the depression, as elsewhere in the developed world, was to erect higher protective tariffs and restrict currency convertibility. Apart from Czechoslovakia, which was a net capital exporter in the 1920s, the region borrowed substantially from Western Europe, but creditor-currency devaluation and the shrinkage of financial markets brought the ratio of the Eastern European countries' external debt down to 18 percent of GNP by 1938. Overall, the interwar years were an abnegation of regional globalization.

Already before World War II Nazi Germany had imposed a Reichsmark clearing system on its Eastern European trade partners except for Poland; this at least assured them of markets in a depressed world, but Germany's rearmament left few goods and services upon which they could spend otherwise inconvertible balances. In essence they were financing that arms drive. Beginning with the annexation of Sudetenland from Czechoslovakia in 1938, German (and in the Balkans, Italian) occupation policies, and those of its client states, subordinated Eastern Europe to German economic requirements, formulated as a *Grossraumwirtschaft* (the economy needed to support German territorial expansion). The region, and the western USSR after the 1941 invasion, were to be tributaries of farm produce and raw materials to a German "core" of heavy industry, into which only the German "protectorate" of Bohemia-Moravia was economically incorporated.

The COMECON Era

Eastern Europe endured a further occupation when the Soviet armies swept to victory in 1945. By 1947 the governments of eight states were under Communist rule (Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, the USSR, and Yugoslavia), and in 1949 the USSR adapted its Zone of Occupation in Germany into the German Democratic Republic. If the decisive break with the Western market economies is to have a date, it would be 1947, when the Soviet Union and its subordinate states rejected participation in the Marshall Plan and in the ensuing



A busy Russian port, 1677. From a book by Balthasar Coyet, published in Amsterdam. Beinecke Rare Book and Manuscript Library, Yale University.

Organization for European Economic Cooperation. In ostensible compensation for the absence of a corresponding body for Eastern Europe, the USSR sponsored the establishment of a Council for Mutual Economic Assistance, commonly abbreviated to COMECON, in 1949. By then Yugoslavia had broken with the USSR and Albania had changed allegiance from Yugoslavia to the Soviet Union. COMECON included Albania briefly in its membership, and later two other Soviet allies, Cuba and Mongolia. In the 1950s and 1960s a steady 60 percent of members' exports were directed to each other—exports predominantly of Soviet raw materials against Eastern European equipment and manufactures. Trade was underwritten among COMECON members by a mutual coordination of annual and longer-term plans for each economy, and trade with the West deterred by strategic embargoes and restrictions imposed by NATO members through a Consultative Group Coordinating Committee (CoCom). As the imperatives of the Cold War weakened and estimates of comparative trade advantage strengthened, the mutual export

dependence among COMECON nations diminished: by 1980 it was 49 percent and by 1990, 38 percent.

Post-Communist Globalization

The collapse of communist regimes in all COMECON states between 1989 and 1991 brought the Council to an end and opened the trade of the twenty-seven countries of Central and Eastern Europe and the Commonwealth of Independent States (CIS) to worldwide globalization: by 2002 only 21 percent of their exports moved within the region, while 73 percent were to other developed market economies (6 percent were with developing countries). Capital from the West supported economic development. Foreign direct investment amounted to \$34 billion in 2002; gross external debt was in aggregate 46 percent of Eastern European GDP with 44 percent of that in the CIS alone. All but three countries (Belarus, Turkmenistan, and Uzbekistan) had by 2003 liberalized trade and current payments, and all but those three and six others (Azerbaijan, Bosnia-Herzegovina, Kazakhstan,



Russia, Serbia-Montenegro, Tajikistan, and Ukraine) had joined the World Trade Organization. Once it had been opened to commercial and financial flows like those of most developed economies, scant rationale remained for considering Eastern Europe as a distinct trading region. As the European Union extended its membership—the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia, Slovenia, and Poland joined in May 2004; Bulgaria and Romania joined on 1 January 2007; Croatia, the former Yugoslav Republic of Macedonia, and Turkey are candidates to join, while Albania, Bosnia and Herzegovina, Montenegro, Serbia, and Iceland are recognized as potential membership candidates; Kosovo is also seen as a potential candidate, but not all member states recognize its independence from Serbia—what had once been trade between blocs became the internal trade of a single market or trade with countries, both east and west, having association agreements with the EU. Thus, perhaps, the concept of “other” (alien) will give way in a market of globalized trade to a truly civilized exchange.

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See also Europe, Eastern; Hanseatic League

Further Reading

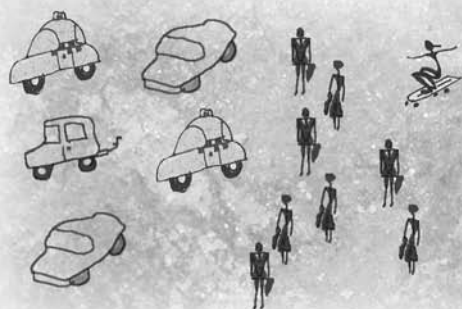
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Trading Patterns, Indian Ocean

The seas, gulfs, and straits of the Indian Ocean have been areas of intense trading activity from the beginning of human seafaring. The unique nature of its wind patterns enabled the development of maritime trading, linking it to the Atlantic, the South China Sea, and the Pacific. Today the Indian Ocean incorporates those regions that together trade in the bulk of the global oil, which has always been a maritime commodity.

The physical features of the Indian Ocean have fundamentally shaped the development of trading patterns in the region throughout history. Historians offer different perspectives on the chronology and regional boundaries of Indian Ocean trade depending on their vantage points, but the basic elements of states and empires, navigation and mapping, goods and services, and transportation technologies need to be taken into account in any long-range analysis of trading patterns in the Indian Ocean.

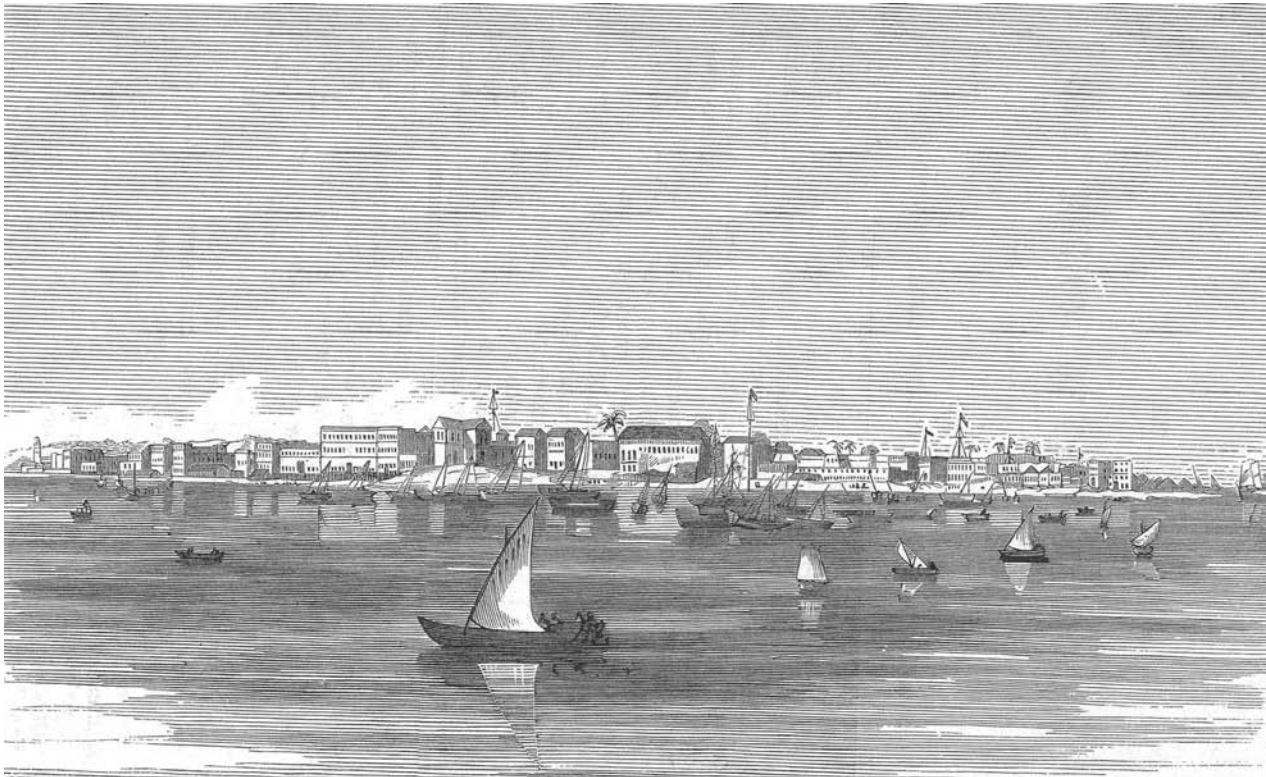
Geography and Climate of the Indian Ocean

The Indian Ocean is the site of the most ancient and complex maritime migrations and trading networks of all Earth's oceans. Covering an area of over 73.4 million square kilometers, extending approximately 6,400 kilometers at the equator and more than 9,900 kilometers at its widest point from the tip of southern Africa to the west coast of Australia, the Indian Ocean is the smallest of the three major global oceans. It is bounded on the east by Africa, on the north by Asia, on the west by Australia and on the south by Antarctica. Twenty-six continental nations

have coastlines with access to the Indian Ocean. The Indian Ocean is home to four island nations and three archipelagic nations. It has more major rivers flowing into its waters than any other ocean, and these river outlets have been essential to the ebb and flow of trading networks. The Zambezi and Limpopo enter the ocean in Mozambique; at the border region of Iraq and Iran, the Tigris and the Euphrates meet at the confluence of the Shatt al Arab near the coast; in Pakistan the Indus meets the ocean; and on its path through India the Ganges meets the Brahmaputra to create the delta region of Bangladesh. The Irrawaddy flows through the length of Myanmar (Burma) to the waters where the Bay of Bengal meets the Andaman Sea. This complex network of rivers and coastal regions that connect inland to ocean have been as essential to trade as the ocean itself.

The seas, gulfs, and straits of the Indian Ocean, including the Red Sea, the Persian Gulf, the Arabian Sea, the Bay of Bengal, and the Strait of Malacca, have been areas of intense trading activity from the beginning of human seafaring. But it is the unique nature of the Indian Ocean wind patterns that have enabled the development of maritime trading patterns, and linking it to the Atlantic in the west and the South China Sea and Pacific Ocean in the east. Although the advent of air traffic has altered the global networks of trade, the complexities of interaction in the Indian Ocean have not diminished. The trading patterns of the Indian Ocean link the most populous regions in the world. Moreover, the Indian Ocean incorporates those regions that together constitute the bulk of the global oil trade, which has always been a maritime commodity.

The earliest maritime technologies were based on sailing craft that by nature depended on the vagaries



Historical drawing of Zanzibar, and island off the East Coast of Africa, as seen from the sea.

of wind patterns and ocean currents that carried the vessels across the sea. Absolutely basic to any long-term historical analysis of the Indian Ocean is a consideration of the monsoon winds. The Indian Ocean is unique in having a seasonal pattern of winds that facilitate transoceanic shipping. The monsoons are caused by differences in the temperature of air above land and sea, which generate wind that blows from cold to hot regions. In the Indian Ocean the biannual monsoons blow from the south and west during April through August, reversing direction between December and March. Seasonal patterns of high and low rainfall correspond with these winds to varying degrees outside the equatorial regions, although in peripheral areas the impact on rainfall is minimal. The word *monsoon* derives from an Arabic word, *mausim*, and the Arabs, Indians, and Persians called the Indian Ocean area “the land below the winds” in recognition of the importance of these wind patterns.

The second major wind pattern is the trade winds of the southern Indian Ocean that occur between latitudes 10° and 30° south and that blow consistently from the southeast. This trade route directly across

the breadth of the Indian Ocean was not commonly used before seventeenth-century European traders entered these waters from the Atlantic.

Early Mariners

The Indian Ocean was probably the first ocean traversed by mariners. Technologies of seafaring developed in the first human coastal settlements, whose inhabitants relied partly on fish for their subsistence. Various delta and coast-hugging maritime networks existed from the earliest known times. The regional networks of the Red Sea and Arabian Sea, the East African coast, the coasts of South Asia, and in the archipelagic regions of Southeast Asia developed their own patterns of maritime trade and technology.

The Egyptians and Mesopotamian civilizations traded along the coastal networks of the Red Sea and Persian Gulf over 7,000 years ago, but their maritime voyages did not extend into the open ocean. Inland trade was far more extensive than maritime trade during this early period.

Southeast Asian seafaring evolved as people migrated from the mainland and established the first



human settlements in the vast Indonesian archipelago. Linguistic and archaeological evidence suggests that Austronesian-speaking Malayo-Polynesian mariners from Indonesia crossed the Indian Ocean in their single- and double-hulled canoe outriggers during the first millennium BCE. These ships were stable and fast enough for transoceanic voyages, and the mariners used their knowledge of ocean currents, clouds, stars, and the habits of birds and fish to find their way across the oceans. While these voyages led to permanent settlement, it is probable that the initial incentive was trade.

During this period, oceanic trading links developed between the Persian Gulf societies and those on the northern coast of India. By the time an anonymous Greco-Egyptian trader wrote the *Periplus of the Erythrean Sea* (c. 50 CE) as a guide to trade with the port polities along the length of the East African and South Asian coasts, these trading network was already well established. A myriad variety of luxury goods, including spices, aromatic woods, cloth, ceramics, precious metals, and currency, as well as the forced migration of slaves, constituted some of the items of trade in these Indian Ocean networks.

The Transmission of Religions

Cultural influence accompanied trade in the Indian Ocean, but the region has always been cosmopolitan rather than unified. In the first centuries of the common era, Hindu and Buddhist traders and religious specialists were invited to settle in Southeast Asian polities. The first large-scale states of Southeast Asia adopted and adapted Hindu and Buddhist cultural practices as part of their state formation. One such state was the Srivijaya maritime empire on Sumatra. From its emergence in the seventh century to its decline in the thirteenth, the Srivijaya Empire prospered because of its control of the Malay Peninsula and the Strait of Malacca that linked Asia to China by sea.

From around 1300, transoceanic trading links between the Middle East and South Asia and thence to Southeast Asia helped spread Islam in the Indian Ocean. The foundation of the state of Melaka on the Malay Peninsula and the conversion of its ruler to

Islam both occurred around 1400; Melaka became one of the richest and most cosmopolitan trading entrepôts in the world before its conquest by the Portuguese in 1511. The growth of Melaka and the spread of its influence mark the beginning of the spread of Islam that occurred in parts of the coastal mainland and much of insular Southeast Asia. Meanwhile, on the opposite side of the Indian Ocean the East African Swahili coastal civilizations were expanding, and from the twelfth century onwards they too were converting to Islam.

The First Traders from Outside

The voyages of the Chinese treasure fleet between 1405 and 1433 under the command of Zheng He signal a change in the trading patterns of the Indian Ocean. Zheng He's was the first major fleet that had originated in other oceans to make its way into the networks of the Indian Ocean. The size of the Chinese fleet was unprecedented. Over three hundred large trading vessels and a hundred supply ships manned by some 28,000 sailors and soldiers crossed the Indian Ocean for the purposes of trade and diplomacy. The dimensions and capacities of the largest Chinese junks dwarfed the most advanced European, African, and other Asian shipping technology at the time. Although the direct maritime involvement of China in the Indian Ocean ended with Zheng He, it presaged the arrival of the Portuguese, who made their Indian Ocean debut with the 1497–1499 voyage of Vasco da Gama.

Despite the Chinese and Portuguese forays into the Indian Ocean, Muslim traders of all nations were the major mariners throughout the Indian Ocean during this period. Around 1490, Ahmad Ibn Majid wrote the *Fawai'id*, a famous nautical manual that included detailed astronomical instructions. Over the course of the sixteenth century and through to the end of the eighteenth century, improved maritime technologies and the expansion of trading networks shifted the emphasis from small-scale cargoes of various luxury goods toward bulk trade in spices and other commodities. The increasing pilgrimage trade that brought Muslims from throughout the Indian Ocean

region to Mecca was also a significant component of trading networks.

Historians still argue about the significance of European involvement in the Indian Ocean in the early modern period. It is probable the majority of ordinary people's daily lives in Indian Ocean societies changed minimally, if at all. The entrance of European traders into the region did not cause a breakdown of the complex webs of trading networks. Trade with China through these networks was for centuries more significant than trade with Europe.

The Growth of European Influence

The era of the European chartered companies, which were founded in the seventeenth century, did alter the scope of trading networks by bringing Indian Ocean polities into direct maritime contact with Europe and the Atlantic world. Europeans voyagers had initially come by sea to the Indian Ocean as a consequence of their search for a way to circumvent overland trade routes to the fabled Spice Islands. Once they encountered the rich and varied maritime trade of the Indian Ocean, however, they inserted themselves, often through force, into all the major networks in the region. Indigenous trade and shipping did not disappear but was disrupted with the rapid expansion of commercial capitalism in the region. Although the spices provided the initial impetus for trade, the major commodities that stimulated this commercial revolution were cotton and textiles from India. The European demand for Chinese tea stimulated the production of opium in South Asia: opium was traded in Southeast Asia for the silver and pepper that was traded in China for the purchase of tea.

European weapons technology, one of the few commodities from Europe that was in demand in the Indian Ocean region, altered the dynamics of state formation and conflict. In Southeast Asia, the increasing presence of Portuguese, Dutch, and English trading posts and colonies, established through conquest and diplomacy, fractured many of the existing maritime and territorial empires, which then reconfigured in smaller-scale polities. This era laid the

groundwork for direct European colonization and strengthened imperialist networks that introduced changes in crop production, raw-materials extraction, and commodities production throughout the region. The overall volume of trade increased dramatically, though it continued to be linked to trade with China.

Indigenous shipping was essential to local and regional trade, and new transoceanic trading networks, controlled by European ships, were partly crewed by sailors from all over the Indian Ocean. But indigenous shipping was confined to the Indian Ocean networks. No African, Middle Eastern, or Asian vessels rounded the western edge of the Indian to trade directly with West Africa or Europe.

By the end of the eighteenth century, the scope and scale of Indian Ocean trade had changed dramatically. The Dutch colony at the Cape of Good Hope at the southern tip of Africa made it easier for European shipping to access the Indian Ocean from the mid-sixteenth century onwards. The Cape became part of an entirely new southwestern Indian Ocean regional trading network in which one of the major commodities was slaves.

Plantations and the Expansion of Global Capitalism

Much of the East African coast and the islands of Pemba and Zanzibar came under the rule of the Omani maritime empire around the beginning of the nineteenth century, creating a western Indian Ocean trading network from East Africa to the Middle East and South Asia largely based on ivory, cloves from clove plantations, and slaves. The islands of Madagascar and Mauritius became European slave-plantation colonies, while plantation agriculture grew throughout the region. Tea from India, coffee from Indonesia, and sugar from many Indian Ocean societies became three of the most significant plantation crops during this time.

In the late eighteenth century, the British had established convict colonies on the coast of Australia. This added another component to trade and forced migration in the Indian Ocean and extended European



This drawing of a village in Malaysia in the nineteenth century depicts Malaysian and Chinese traders.

conquest and colonization to the eastern periphery of the region. In the nineteenth century direct colonization and trade between Europe and Indian Ocean societies intensified. Both South Africa and Australia became dominated by European settlers. Societies in the region became increasingly integrated into, dependent upon, and marginalized by, the expansion of the global capitalism. As the industrial revolution stimulated demand for raw products from around the region, markets were created for European goods, and indigenous production that competed with them was forcibly disrupted. Colonial rubber plantations were established in the East Indies, India, and Ceylon (now Sri Lanka) during the course of the late nineteenth and early twentieth centuries.

Insatiable demands for labor worldwide also created a huge international market for workers that created new networks in the Indian Ocean. While slaves initially provided the main source of labor, gradual emancipation during the course of the nineteenth century stimulated indentured servitude. India in particular became a major source of indentured workers, who were contracted all over the world.

New Patterns in the Indian Ocean Region

The development of European empires and colonies shifted the pattern of major ports and polities in the Indian Ocean over the long term. The earliest major example of this was the displacement of Melaka,

which declined rapidly after Portuguese and then Dutch conquest. The Dutch purposefully diverted trade from Melaka to Batavia (present-day Jakarta) on the island of Java from the mid-sixteenth century. The coastal or near-coastal cities of Bombay (now Mumbai), Madras, and Calcutta became major trading bases for the British in South Asia, while the older inland cities of Delhi in India, Kandy in Ceylon (modern Sri Lanka), and Jogjakarta in Java declined in importance. The intensification of coastal commerce also shifted the emphasis of indigenous state formation, which had formerly been concentrated inland along rivers, toward the coast.

European colonization from the late eighteenth century consolidated this trend with the establishment of port cities such as Penang and Singapore in Southeast Asia, which were entirely the product of British imperialism. Rangoon (now Yangon) became the center of trade in Burma (now Myanmar) under the British, displacing the ancient rice-producing hinterland cities. In East and southern Africa, new ports such as Durban and Lourenço Marques (now Maputo) were founded, while older ports, including Dar es Salaam (in present-day Tanzania) and Mombasa (in Kenya), came under European control.

Technological Advances and Changes

Changes in maritime technology during the nineteenth century profoundly altered the dimensions



of Indian Ocean trading networks. Wooden-hulled ships gave way to iron-hulled ones, but more important was the gradual displacement of the great sailing vessels by steamships that were less dependent on the wind patterns of the Indian Ocean and that reduced the time of voyages. The opening of the Suez Canal in 1869 allowed direct maritime access from the Mediterranean to the Indian Ocean, creating an entirely new network of trade in the region. Steamships had stimulated the demand for coal worldwide, and new mining industries grew up in places like South Africa and Australia. Improved ship design and the development of canning and refrigeration from the late nineteenth century onward transformed the fishing industry in the Indian Ocean from an indigenous and regional trade into an international trade that was part of the global commercial trading networks.

The displacement of steam by fuel derived from oil in the early twentieth century thrust the oil-producing countries of the Indian Ocean into global prominence. By the late twentieth century it also integrated the southernmost territory, Antarctica, into Indian Ocean networks through exploration and possession, if not direct exploitation. The trade in oil is largely a maritime trade and therefore had an effect on the evolution of shipping technology. Purpose-built oil tankers, as well as bulk and oil carriers, currently constitute the largest proportion of shipping vessels in the world. The size and capacity of oil tankers has expanded exponentially since the 1950s, from about 46,000 to 555,000 metric tons.

The advances in airplane technology from the mid-twentieth century, initially stimulated by the intensification of global warfare, have been one of the major motors of globalization. The trading and migration networks of the Indian Ocean have expanded to include air routes. Airplanes have made possible networks that are independent of geographical or oceanic impediments, and the volume of both cargo and passenger air traffic in the Indian Ocean continues to grow rapidly. Airplanes enable people to travel faster and further than any other form of transport, stimulating migration and tourism as major economic factors throughout the Indian Ocean. Although indigenous shipping technology has not entirely disappeared in

the Indian Ocean, it has been marginalized by these transportation innovations.

From the End of World War II to the Present

By the end of the twentieth century all the nations of the Indian Ocean had gained independence from colonial rule. World War II was an important stimulus to this trend and marks a turning point in the region. Britain and the Netherlands were focused on the European war at the expense of their colonies. Communication between Europe and the Indian Ocean was disrupted, while in Southeast Asia the expansion of the Japanese Empire included the conquest of Singapore, Indonesia, and Burma, and the replacement of colonial regimes by nationalists. Indian nationalists demanded independence; the result was the partition of India into the independent nations of India and Pakistan in 1947, followed in 1971 by the creation of Bangladesh from the former East Pakistan. African colonies gained independence by the 1970s.

The Cold War changed the geopolitical significance of the Indian Ocean nations, bringing the United States and the Soviet Union into Indian Ocean politics. The Middle East oil-producing states became a global focal point, and nationalist governments were closely monitored. Global geopolitical networks such as the nonaligned movement, which was inaugurated in Indonesia in 1955, attempted to establish an alternative to Cold War allegiances for newly independent states. The Organization of Petroleum Exporting Countries (OPEC) was founded in Baghdad in 1960 as a global organization for oil-producing countries that had hitherto not benefited from the profits of their resources. Middle Eastern states and Indonesia were founding members. Despite the existence of those movements and organizations, the states of the Indian Ocean have not created their own regional body. African States belong to the African Union, formed in 2002 from the dissolution of the Organization of African Unity (1963–2002). Southeast Asian states belong to the Association of Southeast Asian States (ASEAN), which was established in 1967. Processes of globalization continue to accelerate, and

Indian Ocean trading networks can in most cases be incorporated into this trend.

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See also African Union; Cold War; European Expansion; Globalization, Historical Perceptions; History, Maritime; Interregional Trading Networks; Oil; Postcolonial Analysis; Zheng He

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Trading Patterns, Mediterranean

Local and regional sea routes of the Mediterranean were the lifeblood of its islands and coastal settlements from at least the third millennium BCE through to the beginning of the twentieth century CE. Long-distance trade across the length and breadth of its basin has effected considerable and ongoing cross-cultural interaction.

The Mediterranean Sea is a deep geological depression that physically divides three continents, yet since the invention of seacraft it has actually served to foster and sustain a whole range of transcontinental economic and cultural exchanges. Indeed, the Mediterranean and its hinterlands are deemed by historians to form a historical unit. Trade in particular has given the entire region a coherence that allows us to speak of a Mediterranean “world.”

The role of trade has been fundamental. The Mediterranean world was dominated by port cities (e.g., Barcelona, Alexandria, Tyre) or cities with ancillary ports (e.g., Florence-Livorno). Fifth-century BCE Athens and imperial Rome were especially reliant on cereals imported from the Black Sea and North Africa, respectively, and when regular grain sources were threatened, the Mediterranean always provided swift access to alternative sources.

Environmental Features

The Mediterranean has offered a relatively favorable environment for mariners. Compared to the Atlantic Ocean, for example, the Mediterranean enjoys a much milder climate year round, with lighter winds and less turbulent swells. Prior to the advent of mechanized shipping, seaborne traffic was conducted normally

from March through to October, when conditions were milder, and when clear skies and stars facilitated navigation. Winds and currents determined the general pattern of long-distance trade routes throughout the Mediterranean, in which the main current runs counterclockwise around the entire sea basin. The Atlantic, which replenishes 71 percent of annual water loss in the Mediterranean, propels the main current through the Strait of Gibraltar, which moves along the North African coast to the Nile Delta, from where it is forced northwards along the Syria–Palestine littoral. The current continues along the southern European coastline (including the Adriatic) back to Gibraltar. The prevailing winds through the sailing seasons come from between northwest and northeast, which means that sailing ships had to negotiate winds and currents that often ran in opposite directions. Traffic along the northern Mediterranean overcame potential difficulties by sailing between the string of islands from Cyprus in the east to the Balearic Islands in the west. Long-distance trade until the end of the Middle Ages more or less conformed to trunk routes that negotiated the sensitivities of the main currents and winds.

Long-haul traffic appeared to favor the northern littoral. The North African coastline lacks natural harbors and is made treacherous by reefs and sandbanks, but it was utilized heavily by some of the world’s most formidable seaborne powers, (e.g., Phoenicians, Carthaginians, Arabs, Algerian corsairs). In contrast, the northern shoreline is blessed with deep waters and with ample options for safe anchorage. Ships of all sizes could find a dense infrastructure of dockyards, deepwater anchorage, and other port facilities from Gibraltar through to the Levant (the lands along the Mediterranean’s eastern shore).



The Grand Canal in Venice in the 1990s, at one time the major port for Mediterranean trade.

Prehistory and Antiquity

Historians tend to focus on long-distance commercial ventures when dealing with trading patterns, but it was the more localized activities that set the rhythms of Mediterranean economic life. The stir and bustle of even the largest ports, such as early modern Istanbul and Naples, were mainly attributable to the daily comings and goings of localized traffic. Such small-scale trade was mainly characterized by cabotage, the free movement and peddling of small cargo, often along ill-defined and changing routes. Always a cheaper and more efficient option to land transport, cabotage was always responsible for the bulk of total cargo transfers. The vigor and unity of the Mediterranean world probably owed more to the sum effect of such unquantifiable and unpredictable local trade patterns than to large-scale traffic.

Regional-level trade can be traced back to the Neolithic era (perhaps as early as 7000 BCE, from when we can date the first signs of seafaring). Archaeologists have also uncovered remnants of trading harbors that point to the existence of sea-lanes connecting mainland Greece and Crete with Anatolia (modern Turkey). Seaborne exchanges between Egypt and Mesopotamia, via port cities on the Levantine coast, date back to the fourth millennium BCE. Metals and luxury items appeared to be the most valuable trading commodities: Egypt and Mesopotamia exchanged gold and silver respectively. By the Bronze Age (c. 2500 BCE), a sizable seaborne network had emerged. Crete and Cyprus were incorporated into a trading

network with Egypt and the Levant. Minoan Crete and Mycenaean Greece had, by the second millennium BCE, created seaborne trading empires held together by trading colonies in distant parts of the Mediterranean. Mycenaean settlements have been uncovered in Sicily, Sardinia, and mainland Italy.

Bronze Age trading networks collapsed somewhat mysteriously, as did most eastern Mediterranean states and cities, around 1200 BCE. The revival was led by the Phoenicians, who, from about 1000 BCE, built a trading empire that stretched across the length of the Mediterranean. The Phoenicians effectively created the first Mediterranean trading system. Their main interest was securing raw metals from as far away as Rio Tinto in Spain, which they exchanged for craft goods and luxury items manufactured in the Levant. The Phoenicians dominated the sea through a network of settlements and emporia, and trade would serve as the conduit for the dissemination of Phoenician culture, particularly across North Africa and southern Spain. From about the eighth century BCE, belated competition came from the Greeks, who, following the Phoenician model, established city-states and emporia mainly across the northern Mediterranean coastline, and getting as far west as Provence and Catalonia. Greek culture was effectively established along the Black Sea and Anatolian littoral, western Sicily, and along the southwestern Italian littoral.

From the middle of the third century BCE, the center of political gravity in the Mediterranean shifted gradually from the Levant to central Italy. At the beginning of the first millennium CE, Roman legions had already conquered the entire Mediterranean world, making it their own sea (*mare nostrum*). The empire did not function as a coherent economic system, but Roman dominion made changes that were beneficial across the board: piracy was contained, merchants operated under one legal system, and the Romans established a fully monetarized economy. Marine archaeologists suggest that the relatively large number of discovered shipwrecks that date from 100 BCE to 300 CE point to trading activity on a scale that would not be seen again until the late Middle Ages. Ships of between 250 and 400 tons were commonplace, with



The modern market in Athens, Greece, shown here on 2003, overlooks the excavated ruins of the old market (agora).

many servicing the city of Rome's voracious appetite for grain. Much of that grain supply was organized and paid for by the state, otherwise Rome's domestic and interstate trade was the preserve of private interests. Tellingly, the empire's wealthiest and most vibrant cities and territories were located on, or near, the Mediterranean coastline.

For late antiquity and the early Middle Ages, the evidence for Mediterranean trade is patchy and inconclusive. Despite the rapid accumulation of new archaeological data, scholars remain divided over the degree to which the Mediterranean world experienced a prolonged economic depression. Certainly, large-scale trade continued through to the mid-sixth century and did not recover until the tenth. However, it also appears that neither the fragmentation of the Roman Empire, the Arab conquests, the revival of piracy, or plague greatly disrupted the rhythms of localized trading activity, from which the Mediterranean world had long derived its essential vitality. It remained a world of cities, especially Italy and the eastern Mediterranean, for which maritime activity remained as critical as ever. Christian and Muslim pilgrimage to Jerusalem and Mecca was now an additional feature of seaborne traffic. Despite intermittent conflict between Muslim and Christian powers, Christian, Jewish, and Muslim merchants could nearly always be found plying their trade in most Mediterranean port cities. Along the Red Sea and Indian Ocean, the Mediterranean would also remain a vital channel for communications across the Islamic world system.

The Rise of City-States

The eleventh century witnessed the ascendancy of the Italian city-states, especially Venice and Genoa, which led the gradual revival of large-scale seaborne trade. Capitalizing on the turmoil inflicted upon the Muslim and Byzantine worlds by the Crusades (1096–1291), Venice and Genoa secured trading privileges and colonies that provided a platform for Mediterranean trade hegemony. Their highly maneuverable long galleys and heavy cargo-carrying vessels gave them another advantage. More importantly, the Genoese and Venetian states played a significant role in organizing maritime activities, regulating practices, and orchestrating responses to challenges. In the fourteenth century, for example, they oversaw the introduction of a range of cheaper, yet more efficient, galleys and cargo-carrying round ships that counteracted a cost crisis and effectively stimulated greater maritime activity. Moreover, the Italians developed ever more sophisticated means for financing and sustaining ongoing commercial operations; by the fifteenth century large-scale commercial operations were supported by companies and banking institutions (e.g., the Medici family). Until the end of the fifteenth century, Venice and Genoa dominated the movement of material goods, pilgrims, and slaves across the Mediterranean, and formed a vital part of the trade chain that linked Europe with East Asia (via the Silk Roads) and Indian Ocean trading networks.

Domination by the Great Powers

From the sixteenth century, the Mediterranean became a subsidiary of much larger trading zones, especially the Atlantic. The Ottoman Empire and a succession of Christian powers, beginning with Spain, followed by France, Holland, and England, vied for domination, yet none of these powers relied heavily on the Mediterranean for their prosperity. The Mediterranean world had lost its primacy, and historians have been inclined to ignore its history thereafter. The sea, however, continued to nourish the towns and cities of that world, even if life for Mediterranean communities appeared more precarious than ever.



Indeed through most of the early modern period, the Mediterranean seemed to belong to no one. Large-scale Christian and Muslim privateering flourished, as did the slave trade, yet such unsavory operations had always formed part of the Mediterranean redistribution system. The period witnessed the rise of a new kind of port city, such as Livorno and Smyrna, which was relatively free of restrictive traditional trading practices and political authority, which welcomed foreigners, regardless of faith, and which laundered pirate plunder.

By the nineteenth century, the Mediterranean was the subject of rivalries between the great powers, especially following the opening of the Suez Canal in 1869. By the 1880s, British, French, United States, and German commercial and financial interests were investing heavily in the Mediterranean, especially in Egypt and the Ottoman Empire. The burgeoning trade saw the expansion of bustling multilingual entrepôts such as Smyrna, Salonika, Alexandria, Haifa, Suez, and Beirut. Northern Europeans were also traveling more frequently throughout the Mediterranean, especially after the Maghreb had been cleared of corsairs by the 1830s, and by the end of the century bourgeois travelers were visiting the archaeological sites of Egypt, Greece, and Rome in large numbers.

Steam Shipping and Tourism in the Modern Era

Perhaps the most important development in terms of the broader history of Mediterranean trade was the introduction of steam shipping, which had displaced traditional sailing craft by the end of the nineteenth century. Since then, land and air transport have diminished the importance of Mediterranean seaborne exchanges, though mechanized shipping remains important for provisioning island communities and transporting tourists. Oil tankers and luxury cruise liners have become a more familiar feature of the open seas. As a source of wealth, the sea assumed renewed importance through the late twentieth century. In 1973, 60 million visitors enjoyed their summer vacations along the Mediterranean coastline. Numbers

increased dramatically with the establishment of cheap package holidays and the rapid expansion of coastal tourist facilities from the 1980s, and nowadays, coastal tourism is a vital source of income for the Greek, Turkish and Spanish national economies. For the foreseeable future, Mediterranean-trading patterns will be dominated by the traffic in leisure-seeking people.

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See also Greece, Ancient; Islamic World; Ottoman Empire; Roman Empire

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Trading Patterns, Mesoamerican

Trade and exchange were ancient and pervasive activities throughout Mesoamerica (much of present-day Mexico and northern Central America). The great ecological diversity of Mesoamerica, from steaming tropical forests to highland mountains and plateaus, stimulated the development of regional specialties (such as textiles from the Peruvian Andes) and the opportunity to exchange surplus yields with others.

Trading activities in Mesoamerica (the name refers to much of modern-day Mexico and northern Central America) became particularly prominent with the development of sedentary civilizations, from as early as 1600 BCE. Economic specialization associated with these civilizations required that individuals and communities exchange their specialized production for other necessary goods, while the development of hierarchical social systems encouraged elites to gain access to specific status-linked luxuries, often from distant regions. The production of surpluses also allowed individuals to exchange their excess yields or output for other goods they did not personally produce. These processes became important in the Formative period (c. 1600 BCE–250 CE) and increased during the Classic period (variably 250 CE–900 CE), becoming highly commercialized in the Postclassic period (900 CE–1521 CE). Evidence for trading activities during the Formative and Classic periods relies on archaeological investigations, while rich historical records augment archaeological data for unraveling Postclassic trading patterns.

Types of Trade and Traders

Trade in Mesoamerica was multifaceted: it was carried on over long and short distances; involved producers, professional merchants, and elites; embraced utilitarian goods and luxuries; and took place in marketplaces and royal palaces.

Long-distance trade was typically the domain of the full-time professional merchant. Lacking beasts of burden and a practical use of the wheel, the transport system of Mesoamerica relied on human backs and canoes, and few rivers were navigable. A man could carry up to 20 kilograms with a tumpline across his forehead or shoulders, and could travel approximately 24 kilometers in a day, depending on the difficulty of the terrain. Most trade conducted in this manner over long distances involved low-weight, low-bulk, and high-value commodities such as feathers, precious stones such as turquoise and jadeite, gold ornaments, shells, and decorated textiles. In the Formative period and among the Classic Maya, goods such as these were used by the aristocracy for social and ritual display; this trade was managed by the elites and its focus on elite consumption and control defines it as a “prestige goods economy.” During the more commercialized Postclassic period, Mesoamerican professional merchants served as both state agents and private entrepreneurs. In the Mayan area (present-day southern Mexico, Guatemala, and Belize) they appear to have been of elite social standing, while in central Mexico they emerge as a specialized, albeit ambitious, group of commoners. During the period of the Aztec Empire (1430–1521), such merchants belonged

to guild-like organizations and gained considerable political favor and economic wealth.

Much trade was conducted regionally and involved goods of medium weight, bulk, and value. Produced in specialized regions, these goods were typically carried and traded across ecological zones to areas where there existed a high demand for such goods and materials. The most common products were salt (especially from northern Yucatán), cacao (from coastal and southern lowland regions), rubber (also a lowland product), raw cotton (from coastal regions and inland areas below approximately 900 meters), and obsidian (from specific volcanic outcrops in mountainous areas). These were materials of nearly universal use in Mesoamerica: salt for diet, cacao as an elite and ritual beverage, rubber for the popular ball game and for use in religious ceremonies, cotton for clothing and other textiles, and obsidian as a multipurpose cutting tool and weapon. Some finished goods may also have fallen into this category; these include plain textiles woven of cotton or maguey (fibers from agave plants), paper, reed mats, and gourd bowls. A somewhat different type of commodity, fancy polychrome pottery, also falls into this category, although it was relatively heavy and probably carried a higher value than other goods carried in this manner. Transport of these raw and manufactured commodities was typically in the hands of professional regional merchants, although records from the Postclassic period also indicate that the actual producers sometimes carried their own goods over ecological zones for purposes of trade. The transport involved considerable effort, since nearly all of these goods traveled between lowlands and highlands.

A great deal of trade was carried on by individual producers, most of it over more restricted distances. This type of trade involved most foodstuffs, such as maize and beans, which were heavy, bulky, and relatively low in value; it was inefficient to incorporate such goods in long-distance trading enterprises. Other, similar goods included utilitarian pottery wares and wood products. Individual producers also took advantage of the marketplace setting to sell small lots of regular or seasonal surpluses, such as pottery,

baskets, herbs, fruits, turkeys, and prepared foods such as tortillas and tamales.

Markets

The most pervasive context for trading activities was the marketplace. Every city and community (except for the very smallest) had a marketplace and held a market either daily or on a periodic basis (usually every five or twenty days). It was typically the liveliest spot of the community, where individuals from all walks of life congregated to exchange goods and gossip. During the period of Aztec imperial dominance, the largest marketplace in Mesoamerica had developed at Tlatelolco, also a major residence for long-distance professional merchants. By 1519, Tlatelolco was geographically and politically attached to Tenochtitlán, the Aztec (Mexican) capital city. Reportedly, this market accommodated as many as 20,000–25,000 vendors and consumers daily, while every fifth day it served twice as many people. Being the grandest market in the land, virtually every type of product and commodity, from far and wide, was available there. Other marketplaces were less extensive, serving smaller populations, fewer elite, and more restricted areas. Still other marketplaces became known for their specialties: for instance, lakeside Texcoco was known for ceramics, cloth, and fine gourds; forested Coyoacán focused on wood products and carpenters; the Basin city of Acolman was famous for its dogs; and Azcapotzalco, in the western part of the Basin of Mexico, had a noted market for slaves.

These scenes of bustling economic and social activity were commonplace during the Postclassic, but probably developed earlier. Marketplaces are difficult to detect archaeologically, since markets were often held in an open plaza, and once market day was over, the plaza was swept clean and returned to its original function. Therefore, only vague and spotty information on them exists for Formative and Classic times. A great deal of information on markets and market activities exists for the Postclassic and early colonial periods, however, from historical documents that supplement the archaeological record.



During at least the Postclassic, markets served as the venue for exchanging the full range of commodities produced and manufactured in Mesoamerica. Professional long-distance merchants stopped frequently at marketplaces in their long and arduous treks to and from distant lands, trading local and exotic luxuries to their economic advantage. Regional merchants depended on the numerous marketplaces as they moved their specialized goods across ecological zones. Last but not least, individual producers relied on market days to maintain diversity in their material lives, whether for subsistence or an elevated standard of living. Any given marketplace, then, would see expensive and inexpensive goods, elite and commoner consumers, local and distant vendors and merchants, and familiar and exotic wares for sale.

The marketplace was not only a site for economic transactions, but also for the exchange of the most recent news and rumor. Indeed, under the Aztec Empire, some specialized professional merchants were sent by the emperor to travel from market to market, disguised as local traders; their purpose was to ferret out information on political and military conditions in the region.

The local city-state also benefited from a lively market, as taxes were typically levied on vendors. A different sort of external involvement can be seen at the Tlatelolco marketplace, where professional merchants oversaw the functioning of the market and sat there as judges on market-related crimes and disputes.

Media of Exchange

Trade was facilitated by the general use of specified media of exchange, at least by Postclassic times. The most common and lowest-value exchange media were cacao beans, which may have served as “small change” or to even out unequal values in barter exchanges in marketplaces. While the actual value of cacao beans in pre-Hispanic times is unknown (and probably fluctuated in any event), colonial values may well be fairly representative: two hundred cacao beans for a turkey cock, one hundred cacao beans for a turkey hen, thirty cacao beans for a small rabbit,

three cacao beans for a turkey egg, one cacao bean for a large tomato or a tamale. While relatively low in value, cacao beans were sufficiently valued to have been actively counterfeited.

Large plain cotton cloaks were another common form of money that were higher in value than cacao beans; depending on the quality of the beans and cloaks, values ranged from sixty to three hundred cacao beans for one cloak. Cloaks also served a variety of exchange functions: they could be used to ransom certain slaves, to obtain land, and to gain restitution for theft. A basic standard of living (probably for a commoner) was also expressed in terms of these cloaks, twenty of which could support an individual for one year. These cloaks therefore also served as a standard of value in the economic system.

Other recorded media of exchange were feather quills filled with gold dust in central Mexico, and copper bells, stone beads, and thin copper axes in the more southern reaches of Mesoamerica. Information on all of these forms of money applies to the highly commercialized Postclassic times; it is not clear how extensive such media of exchange may have been in earlier periods. Cacao beans continued as a medium of exchange well into Spanish colonial times, although the other money forms quickly faded away. Spanish coin was used side-by-side with cacao, gradually replacing it.

International Trading Centers

Another significant trading venue was the international trading center. Typically located beyond or at the periphery of major city-states, these centers attracted long-distance professional merchants from great distances. Here, the merchants would find a considerable diversity of trade goods and could carry on a high volume of high-value trade relatively unencumbered by political conditions. While they may have developed early in the prehistory of Mesoamerica, they became particularly significant during the commercialized Postclassic period. Such centers were found throughout Mesoamerica, in highland as well as lowland regions. Wherever their specific locale,

they typically were strategically situated between major polities or significant environmental zones, and were located along convenient trade routes—overland, riverine, or coastal. While on the surface it appears that these trading centers were specialized venues for high-level economic dealings of professional merchants, they were also hotbeds for more regional and locally based trading activities.

Professional Merchants as Private Entrepreneurs

Professional merchants undoubtedly enjoyed a long history in Mesoamerica. They are not specifically documented prior to the Postclassic; however, as early as the Formative period, elite goods such as shells and fine stones traveled long distances. While this trade may have operated by goods passing from hand to hand until they reached their ultimate destinations, their status-linked nature suggests a more centralized, even politically controlled and generated, method of trade. The Classic period witnessed a continuation of long-distance trade in luxuries destined for the elite (again, probably conducted by professional merchants or by the elites themselves) and also saw a growth in exchange of more broadly consumed goods, such as ceramics for cooking, storing, and eating; ground stone for grinding implements; and obsidian for tools and weapons. During the Postclassic, professional merchants attained unprecedented levels of wealth and political influence. In the Basin of Mexico during Aztec times, professional merchants were organized throughout the major cities into their own city wards, or *calpulli*. Resembling guilds, *calpulli* retained exclusive membership rights, a system of internal ranking, a set of specific laws and codes, the ability to manage their own trading ventures and the wealth derived from them, and an advantageous relationship with the state. Professional merchants served the state by carrying state goods on their trading expeditions; they took them as diplomatic gifts to unconquered rulers or used them in profitable exchange negotiations for the state. As mentioned earlier, some of these professional merchants also served the state as spies

in their far-ranging travels. As private entrepreneurs they became wealthy beyond their social standing; as state agents they were esteemed by their rulers but often despised in outlying regions. Indeed, a major motivation for Aztec conquests was the relatively frequent assault and murder of their professional merchants.

Significance of Mesoamerican Trade

Throughout the history of pre-Hispanic Mesoamerica, trade served a number of important functions. It provided a context for evening out ecological and seasonal variations, allowing for households throughout Mesoamerica to obtain a wide variety of necessary or desired goods from distant regions as well as from the local area. Trade was an adjunct to specialization, whereby a specialized producer could be assured of exchange outlets for obtaining other essential commodities. Far-flung trading networks provided exotic and expensive goods to elites throughout Mesoamerica in their efforts to visually enhance their high status. And, in an important general sense, trade served to integrate broad regions in relatively sustained and predictable exchanges of goods, information, and social relations.

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See also Andean States; Aztec Empire; Inca Empire; Trading Patterns, Ancient American

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Trading Patterns, Pacific

The Pacific Ocean once (and understandably) was perceived as a huge obstacle in the process of exchange—it accounts for one-third of the surface area of the Earth—but it has in fact fostered trade, first in spices, silver, and silks, since the sixteenth century.

The Pacific Ocean comprises over one-third of the surface area of the Earth, is larger than all earthly landmasses together, and equals all remaining oceans/seas combined. The Pacific is double the size of the Atlantic Ocean and contains more than twice the water. Given the Pacific Ocean's magnitude, it is unsurprising that observers traditionally conceptualize it as a colossal barrier to interchange, and regard meaningful and lasting trans-Pacific activity as recent (perhaps post-World War II) and unprecedented. Yet such conventional views are false: crucial trans-Pacific and intra-Pacific interactions have been unfolding since the sixteenth century. Improved navigational technology turned oceans into freeways rather than barriers to interchange. For example, unusually high wages in Gold-Rush San Francisco prompted its affluent residents to have their laundry done in Guangzhou (Canton), China, for a brief time. Control of ports (or at least access to them) has been crucial to Pacific history for centuries.

Spices and the Arrival of Europeans

Islamic traders were already established in Guangzhou, in Gujarat, India, and in Sumatra by the ninth, tenth, and thirteenth centuries, respectively. Melaka, Mindanao, and the Moluccas (the Spice Islands) were Islamic sultanates when Portuguese and Spanish

ships arrived in the sixteenth century. Moreover, three vast Islamic empires—the Ottomans (Turkey), the Safavids (Persia), and the Mughals (India)—served as connectors between Asian Pacific islands and European marketplaces. Venice was the key marketing power for Asian spices entering the Mediterranean basin prior to the sixteenth century.

The Portuguese sought Asian spices. In 1511 Albuquerque conquered Melaka—a strategic hub connecting trade networks of the South China Sea, the Indian Ocean, and the Spice Islands. From this base, the Portuguese subsequently established entrepôts along the coasts of China (Macao in 1557) and Japan (Nagasaki in 1570). Vast networks of Indian Ocean and Asian Pacific exchange predate the appearance of European powers. While Portuguese ships transported perhaps half of the pepper and spices that Europeans consumed during the first half of the sixteenth century, Arabic, Indian, and Malay merchants continued to play an important role in the Indian Ocean trade, shipping spices through the Red Sea, the Persian Gulf, and other traditional routes into the Mediterranean basin.

Spain's imperial presence in the Pacific followed Ferdinand Magellan's crossing of the Pacific in 1521, in search of an alternative route to the Moluccas. Although only one small Magellan ship (of several) finally returned to Spain, its 500,000 pesos in spices generated a moderate profit overall. Thus, Spaniards knew for certain that huge profits awaited future silver shipments from Mexico to the Philippines. Over four decades of frustration followed, however, because powerful westward trade winds and currents thwarted attempts to sail from the Asian side of the Pacific back to the Americas. Miguel Lopez

de Legazpi finally succeeded in 1565 by sailing a northerly route past Japan and then southward down the American coast back to Acapulco, a route subsequently followed by the Manila galleons for 250 years (and followed by ships today in search of fuel economy). Legazpi established Spain's first permanent settlement in the Philippines on the island of Cebu, but abandoned Cebu in favor of Luzon's great natural harbor in Manila Bay in 1571. Embracement of the Chinese junk trade via Manila Bay implied abandonment of the spice trade via Cebu, but the burgeoning silver-for-silk trade generated prodigious mercantile rewards.

Relations between China and the Philippines predate the sixteenth century. Filipino traders had reached Guangzhou by 982 CE. Chinese sources refer to a Philippine maritime raid of a coastal village in Fujian (southern China) in the twelfth century. Filipino ambassadors were received at the emperor Yung-lo's court in 1406 bearing "tribute." Commerce thrived as well among the archipelagoes and surrounding Southeast Asian countries (as well as Japan). Like the majority of the Philippines, "Maniland" was already religiously and culturally Islamic by the sixteenth century.

Batavia, on the island of Java, was established as the headquarters of the Dutch East India Company in 1619. From this strategic position in the Sunda Strait, the Dutch displaced the Portuguese and established dominance over the lucrative spice trade.

Silver and Cross-Pacific Linkages

Tectonic forces endowed mountains around the Pacific's edge—its volcanic "Ring of Fire"—with vast holdings of metals. Earthquakes and volcanic activity are characteristics of these mountain ranges, as well as of the islands and archipelagoes of the Pacific. Much economic and social coherence around the Pacific region stems ultimately from geological history, and nothing influenced trade relations around the Pacific Ocean more—from the mid-sixteenth century to the mid-nineteenth century—than the production and shipment of metals.

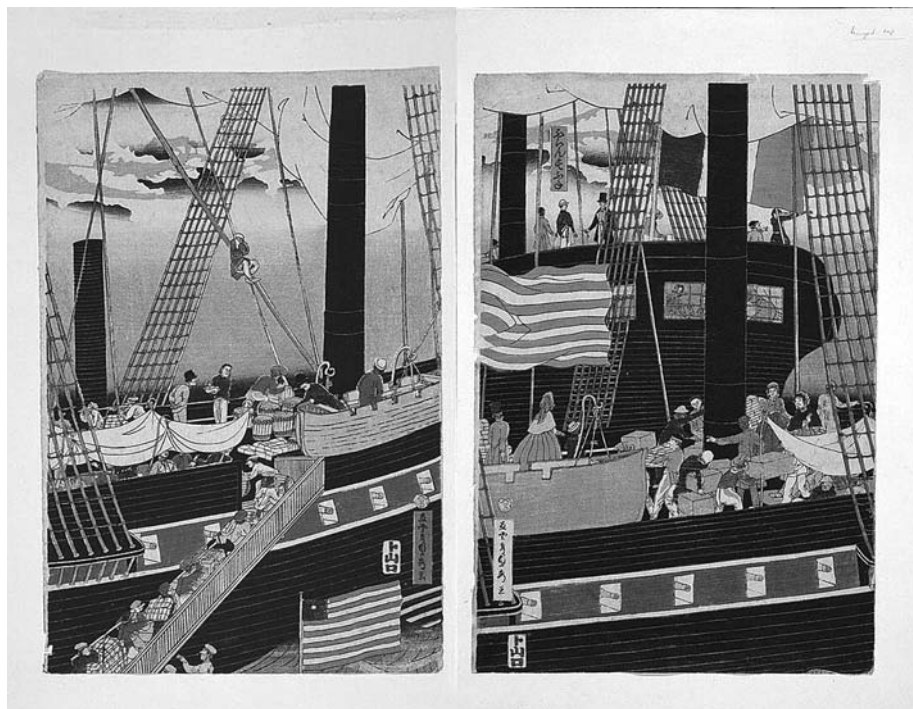
Continuous trade between Asia and the Americas did not exist prior to the founding of the city of Manila in 1571. The sudden eruption of substantial direct exchanges between America and China depended upon two industries: Spanish-American silver and Chinese silks. Manila was the linchpin that connected China and Mexico. From Acapulco, Chinese goods were in turn transshipped to Peru and elsewhere in the Americas (and even on to Spain). The first Filipino and Chinese immigrants arrived in America aboard these galleons.

The Manila galleons carried an annual average of 2 million pesos (i.e., fifty tons of silver) during the seventeenth century (voyages that continued until the last galleon was captured in 1815 during Mexico's War of Independence). Manila galleons carried as much silver over the Pacific as the combined shipments of the Portuguese *Estado da India*, the Dutch East India Company, and the English East India Company—major connectors between Asian and European markets.

Merchants of many ethnicities enjoyed high profits: Chinese silks exports rushed toward high silk prices in American markets, while American silver simultaneously rushed toward high silver prices in China. For instance, in 1630 the Portuguese shipped mainly Chinese silks worth 1,500,000 pesos (3,000,000 pesos worth in Mexico), contradicting the common claim that galleon trade declined during the seventeenth century.

Manila's population was diverse: Spaniards of *Intramuros* (the walled center of Manila) were surrounded by segregated populations of Chinese and Japanese, with groups of free and enslaved blacks living in the city. Jesuits organized sodalities for blacks and the local government expelled five hundred free blacks for vagrancy in 1638. Some Manila galleon slaves were sold upon arrival at Acapulco. Africans were sailors on Portuguese ships navigating between China and Nagasaki; they defended Macao against a Dutch fleet and were active in Goa and other Portuguese settlements.

At the main square in Mexico City, authorities established a "Parian" (Chinese neighborhood) where



Utagawa Sadahide, *Western Traders Loading Cargo in Yokohama* (1861). Pentaptych print. Two prints from a five-part series shows an American ship in the harbor with lots of action on the gangplank.

all kinds of products arriving via the Philippines were sold. Trade between Mexico and Peru reflected the vital Manila trade. When a 1634 prohibition blocked Mexican silks from Peruvian markets, Chinese finished silks rose to 90 percent or more of the value of goods traded between Mexico and Peru. Spanish officials traveling in Central America and Peru in the eighteenth century reported widespread sale of Chinese porcelain in Lima and open sale and usage of Chinese silks everywhere from Chile to Panama.

China and the Pacific

China occupied a central role in the Asian and Pacific economy. Large fleets of junks reached Africa and the Middle East during the early fifteenth century. Lack of subsequent European-style trade developments, however, has prompted scholars to blame Chinese state interference for China's failure to modernize during the early modern era. Historical facts do not coincide with this conventional hypothesis. The Chinese economy "silverized" during the sixteenth

century because its paper-money system collapsed, whereupon silver was adopted by merchants for monetary purposes. Subsequent changes in the taxation system reinforced the central role of silver in the Chinese economy. Importation of silver therefore formed the basis of an immense commercial expansion. Despite a lack of official Chinese sponsorship of foreign commerce along European lines, extremely successful Chinese commercial networks emerged throughout Asia during the early modern period nonetheless.

China was the primary demand-side force operating in the global silver market. Silver poured into China via all maritime and land-based trade routes simply because the white metal's price in China was double that of the rest of the world by the late sixteenth century. On the supply side, tremendously rich concentrations of silver were discovered in Japan, Peru, and Mexico beginning in the 1540s, and technological innovation further reduced mining costs. It was this combination—high silver prices in end-market China and cheap production costs in Japan and the Americas—that led to the greatest global mining

Ambition leads me not only farther than any other man has been before me, but as far as I think it possible for man to go. • **Captain James Cook (1728–1779)**

boom the world had ever seen. Acting as intermediaries between the Chinese marketplace and Japanese mines, the Portuguese engaged in highly profitable trade until a 1639 shogunal edict expelled them in favor of Dutch intermediaries (confined to Deshima, a minute islet within Nagasaki Bay). Profits from Japanese silver mines financed Japan's unification under the Tokugawa shogunate by 1600; similarly, American silver-mine profits financed resource-poor Spain's emergence as a premier European power. Both phenomena depended upon high silver prices in the Chinese marketplace. But a century of unprecedented silver imports eventually managed to glut even the giant Chinese marketplace; the price of silver fell and equalized throughout the world by 1640, ending a century-long "Japan and Peru Cycle of Silver" that began in the 1540s. Vanishing profits caused a worldwide trade crisis, and effects reverberated globally for centuries.

Aside from carrying vast volumes of silver and silks, the Manila galleons served as a vector through which American crops were introduced into Asia. New plants such as the sweet potato and peanut were particularly significant because they grew in colder, rocky, and hilly environments like those found in sparsely populated areas of China. Large regions to the north and west could now support relatively dense populations for the first time. Han China's population more than doubled during the eighteenth century and China's territorial size doubled as well, leading to drastic restructuring. Expansion of the Chinese economy implied dramatic increase in the domestic demand for silver one more time. As a consequence, the price of silver in China again rose above that of the rest of the world by 1700 (50 percent higher this time). Reminiscent of the 1540s–1640 silver boom, merchants worldwide once again bought silver where it was cheap and transported it to lucrative Chinese markets. American silver again flooded into China, causing China's silver price to sink to the world silver price level by the 1750s. This time, abnormally high silver-trade profits vanished in fifty years (1700–1750) rather than a century (1540s–1640). The bulk of the silver

entering China during this 1700–1750 cycle came from Mexican mines. Not only were the Mexican silver mines the richest in world history—prior to the Nevada discoveries in the 1860s—but the Mexican peso in particular dominated all silver-money rivals throughout the Pacific Islands, along the Asian coast, from Siberia to Bombay, and indeed throughout North America as well. In 1785 the U.S. Congress declared the Mexican peso (called the "dollar" in Anglo-Saxon countries) an ideal monetary unit for its new nation.

Early Integration of the Pacific

Notwithstanding the conquest of Guam (1662) and the Marianas in the last decades of the seventeenth century, the Manila galleons did not break the Pacific Islands' isolation from the continental Rim. Further integration of the Pacific region occurred between the mid-eighteenth century (end of the Mexican silver cycle) and the mid-nineteenth century (initiation of the "gold period"), when intensified exploration combined with new commercial opportunities. Although Dampier's voyage contributed Australia to the global map as early as 1669, voyages by Bougainville and Cook a century later added Tahiti, Samoa, eastern Australia, New Zealand, and Hawaii to the list of "new worlds" explored by Europeans. Only after Cook's eighteenth-century explorations were many insular Pacific societies meaningfully linked to the world economy. In 1788 a British fleet established a penal colony in Australia.

Although the impact of American plants like maize, potatoes, peanuts, and cassava (the "Magellan Exchange") on mainland Asian societies was immense, the 450 European ships that crossed the Pacific between 1521 and 1769 generated little ecological impact on many Pacific islands initially. Cook's voyages dramatically accelerated impacts on the islands. The first consequence of the European contact was a demographic catastrophe that involved a 90 to 95 percent population decline on many islands; population numbers stabilized



around 1880–1920, and only grew subsequently. Diseases, enslavement, and migration were factors in the decline. Labor migration contributed to the spread of germs around the Pacific. Introduction of new crops and alien species—such as grazing animals, mosquitoes, and rodents—altered island ecologies. Sheep were introduced in Australia and New Zealand for the textile industry. Thanks to the use of quinine (from trees in the Andes) for combating malaria, native or Asian wage laborers were used to develop island plantations that emerged around the Pacific.

Many perceive European voyages and settlements as the main unifying forces around the Pacific, but American and European merchants actually served as middlemen between Chinese markets and Pacific Island ecosystems, which suffered resource depletion on a grand scale. With the exception of whaling, extractive activities were directed to the Chinese market. Sandalwood, sealskins, beche-de-mer (sea cucumber), tortoiseshell, timber, and many other products were exchanged directly and indirectly (via Western manufacturers) for Chinese silks and tea. Sometimes ecological consequences were also indirect, such as when the forests of Fiji were destroyed to provide fuel for drying sea cucumbers for export. Nineteenth-century Hawaiian kings ordered forests torched in order to detect the distinct aroma of burning sandalwood, a product exported mainly to China. All kinds of special products from the Pacific entered the Chinese marketplace directly; or Pacific products could be sold elsewhere in exchange for silver (since China was still the world's largest market for the white metal). Societies isolated for millennia were suddenly linked to world markets with millions of people demanding products from their fragile ecosystems. Scarcity of previously gathered Pacific products after 1850 reduced focus on the Chinese marketplace. American colonists had imported Chinese products since 1700, and merchants from America's East Coast arrived in Guangzhou after the American Revolution. American, British, and Russian seal hunters scoured the America's Pacific coast between 1780

and 1850 in response to demand for furs destined mainly for Chinese, Russian, and European markets. Indeed, the northward spread of Spanish missions up California's coast was a response to southward expansions by non-Spanish fur traders, especially Russians. And by 1800 American whalers and seal hunters were active along the coasts of South America and Antarctica.

The Gold Period

The Pacific's "gold period" began in 1848 with the California gold rush and corresponded with expansion of the U.S., British, Dutch, and French influence on the Asian mainland. Railroad expansion connected interior regions with continental ports, while steamship technologies revolutionized intercontinental commerce. European steamships and powerful new guns were decisive in overthrowing the status quo in Asia. Commodore Perry imposed a commercial treaty on Japan's isolationist Tokugawa regime in 1854 and within a few decades Japan industrialized. Victories over China in 1894–1895, then Russia in 1904–1905 demonstrated Japan's emergence as an economic power, although Southeast Asia was virtually under the colonial rule of the British, Dutch, and French by 1900.

The Battle of Plassey, India, in 1757 altered Asian trade patterns in that the British gained control of Bengal's opium production. Although silver continued as China's principal import, British opium exports to China dominated in terms of profitability. Chinese opium imports rose more than twentyfold between 1729 and 1800. The Chinese emperor Qianlong restricted European merchants to the port of Guangzhou in 1759, where foreigners were allowed to deal only with Chinese firms (hongs) under strict governmental regulation. Chinese exports of silks, porcelain, and tea required import-payment via silver or opium (since there was Chinese demand for little else). Silks were produced elsewhere by this time, and Germany (1709) and Britain (1742) finally mastered production of porcelain. Tea was produced

in quantity exclusively in China, however, until the Dutch (Java) and British (Ceylon and India) developed successful tea plantations at the end of the nineteenth century.

Trade in opium was illegal in China. When Chinese authorities tried to stop it, wars with Britain (1839–1842), Britain and France (1856–1858), France (1884–1885), and Japan (1894–1895) resulted. The Treaty of Nanjing (1842) began a series of unequal treaties that regulated Chinese foreign relations until 1943. China's tributary system was dismantled, Hong Kong was placed under British sovereignty, Chinese ports were opened to commerce, and the opium trade became legal. Britain's trade surpluses with India contributed to Britain's economic strength and to the growth of the Atlantic economy. The British monetary system was based on gold for the major part of the nineteenth century and during some decades of the twentieth. The gold mines of Australia discovered in 1851, the ones in New Zealand in 1861, and exports from India to China provided substantial support for the pivotal role of the City of London in the world financial system.

British activities along coastal China during the first half of the nineteenth century correspond with American expansion in the Pacific beginning with the California gold rush (1848). California became a state in 1850, Oregon in 1859, and Alaska was purchased from Russia in 1867. In 1898, Hawaii was annexed and the Philippines were acquired following defeat of Spain. European powers soon divided China into spheres of influence. In response, United States formulated an Open Door Policy in 1900, which required open trade, territorial integrity, and independence for China. Competition for the Chinese marketplace remained central under such proclamations.

Implications

Often thought of as a “Spanish Lake” between the mid-sixteenth and mid-eighteenth centuries, the world's greatest ocean was exploited with

remarkable success by Iberians (as well as Dutch, Chinese, and other merchants) who controlled key ports providing access to major market areas. From the mid-eighteenth through much of the nineteenth century, numerous nations vied for control of sections of the Pacific. Gold rushes stimulated commercial connections from the mid-nineteenth century. Industrialization narrowed the range of contenders for Pacific supremacy. The Pacific became an “American Lake” after World War II, and American commerce and power remains a dominant force in the Pacific today. It is useful to view the rise of Asian economic powers during the second half of the twentieth century as a reemergence of a centuries-old pattern of response to forces largely emanating from the mainland Asia.

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See also Gold; Magellan, Ferdinand; Pacific, Settlement of; Silver

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Trading Patterns, Trans-Saharan

Although the Sahara is the largest hot-weather desert in the world, it is not entirely barren, and thus held economic attractions for the populated regions of Africa that surrounded it. Trans-Saharan trade in the global economy flourished in gold and slaves, and camel caravans were ubiquitous until railways and roads diverted most export to the oceans.

From about 800 CE to 1900 the Sahara served as one of the major highways of international trade. For the first seven hundred years of this era, Saharan camel caravans provided the only links between the world economy and major sources of gold and slaves in West and Central Africa. Even after European navigation to the Atlantic coast of Africa broke this monopoly, trans-Saharan trade continued to flourish and even increase, although its global significance shrank. Only in the twentieth century, when colonial railways and roads diverted almost all export commerce to the ocean, did the Saharan trade fall back into its earliest form as a purely local affair.

Early Saharan Trade

At some 5 million square kilometers, the Sahara forms the largest hot-weather desert in the world. It is, nevertheless, not an entirely barren place and held economic attractions very early on for communities in the more populated regions of Africa that surround it—the Mediterranean coast to the north, the Nile Valley to the east, and the western and central Sudanic grasslands to the south. (Note that for the purposes of this article *Sudan* refers to these zones

rather than to the eastern and Nilotic region containing the present-day nation of Sudan.) But the ancient trade in Saharan salt, copper, dates, and some slaves functioned only over short trajectories in and out of the desert, never across its entire north-south expanse. The major barrier was technological: horses, oxen, and donkeys, to say nothing of human porters, could not move efficiently across the great distances between oases, the only sources of water within the Sahara.

When camels were introduced into Egypt and North Africa around the first century BCE, the technological problem of desert transport was solved. Camels can travel for as many as ten days without water while also carrying heavy loads of trade goods as well as provisions for the other members of a Saharan caravan—people and often horses (a major import into the Sudan). Political and cultural problems, however, delayed for many centuries the utilization of this new transport system for regular trans-Saharan trade. When the Berber peoples of the northern Sahara first took up camels, they became more difficult for the Roman colonizers of the Mediterranean coast to control and thus made desert trade between Rome and the African interior more difficult. In the ensuing centuries Roman rule also suffered from internal revolts, invasions by Germanic Vandal traders from Spain, conquest by the Byzantine Empire, and finally, in the seventh century, conquest by Arab armies carrying the banner of Islam. The Arabs were themselves a camel-using desert people, and under their regime the Sahara finally became a route rather than an obstacle to international commerce.



The Catalan atlas, a fourteenth-century map of the world, shows main elements of trans-Saharan trade in its heyday in colorful, late medieval style.

True Trans-Saharan Trade

Even with Islamic rule in North Africa, trans-Saharan trade began somewhat precariously as the enterprise of a dissident Muslim sect, the Ibadis, who exiled themselves to the northern edge of the desert in the ninth and tenth centuries. For more orthodox Sunnis, commerce in the lands of pagan black Africans (*Sudan* is the Arabic word for “black”) was not entirely acceptable. This situation changed in the eleventh century when, under the impetus of the desert-based Almoravid Empire, the Berbers of the western Sahara converted to very strict Sunni Islam and the rulers of adjoining Sudanic states such as medieval Ghana also became Muslims. Indeed, the Sahara then became not only a commercial highway but also a route of Islamic pilgrimage and advanced religious education for devout Sudanis. Along with Muslims, Jewish merchants also played an important role in trans-Saharan trade, although very few of them actually crossed the desert. Instead they formed a chain of settlements linking the northern Sahara to both the African and European sides of the Mediterranean.

Gold

Along with horses, the goods taken by caravans into western and central Sudan included such items as cloth, glassware, weapons, ceramic and metal

housewares, paper, and books. As exports, these cargoes played little role in the international economy, since they were similar to commodities already circulating within the Mediterranean and the volume of items traded was not large enough to make much impact upon Mediterranean commerce or its production base. It was, however, highly significant that for such a low barter price (but at high risk for those who actually crossed the desert) the Mediterranean world could obtain what were then considered quite large amounts of gold (a little more than one ton per annum). Gold not only had value in the Muslim and Christian Mediterranean lands for coinage, jewelry, and storing wealth, but it was also needed to purchase luxury goods from India, Southeast Asia, and China, regions that had little interest in Middle Eastern or European exports.

Gold crossed the Sahara by western caravan routes whose southern termini were towns located in present-day Mauritania or along the northern bend of the Niger river. The actual sources of gold lay considerably to the south of these desert-edge entrepôts around the Senegal river, the southwestern Niger Valley, and the Volta River basin. Camel caravans could not travel into such climates, and Sudanic rulers even discouraged their exploration by North Africans, claiming that the inhabitants were exotic and dangerous savages. In reality there were few cultural differences between the gold-bearing zones and those just south

of the Sahara. However, commerce between them became the monopoly of Sudanic merchants who themselves became Muslims.

Slaves

The other major trans-Saharan export of this era, slaves, came mainly from central rather than western Sudan. The Islamic Middle East and adjoining Christian societies had a great need for slaves to perform household chores, carry out agricultural labor (although never on a scale comparable to European New World plantations), and to serve as military forces. Immediately after the Arab conquest of North Africa many Berbers were forced into slavery, and later a brisk trade in captives supplied the Mediterranean from the Caucasus, eastern Europe, and central Asia. However, sub-Saharan Africa soon became the largest supplier of such human commodities, not only on trans-Saharan routes but also along the Nile Valley and via the coasts of the Red Sea and Indian Ocean.

The total number of slaves who crossed the Sahara between 800 and 1900 is about 4 million. When the numbers transported to Islamic lands by other routes is added, the total comes close to the 11 to 12 million estimated for the Atlantic slave trade, mainly between 1650 and 1850. However, the Muslim trade was not only spread out over a much longer period, it also brought Africans into situations where they were much less segregated from the indigenous population. Almost all African slaves in the Muslim world converted to Islam, and very frequently they were assimilated into local society through either manumission or intermarriage. Descendants of black slaves form a large portion of the present-day North African population and are much less marked than in the New World as a separate social, cultural, or racial group.

Caravans

The caravans that brought slaves and trade goods across the desert, especially from north to south, were often very large, amounting to as many as five



This detail of the Catalan atlas shows a European ship, a camel, and Mansa Musa, the tenth emperor of the Mali Empire.

thousand camels and hundreds of people. They traveled mainly during the cooler seasons of the year, from October to March, and even then moved mainly at night to avoid the intense Saharan heat. Caravans usually assembled at entrepôt towns of the northern Sahara such as Sijilmasa in Morocco, Ouargla in Algeria, or Murzuq in Libya. The journey to Sudanic end points such as Timbuktu (Tombouctou) or Kano took as many as seventy days, traveling at a speed of 24 to 40 kilometers per day. Over the many centuries of the caravan trade, few if any technical improvements were made in this transport system, which was better adapted to conditions in the desert than the wheeled vehicles and instrument-aided navigation that changed land and sea transport in other regions during this time. Nonetheless, movement across such lengthy desert stretches always remained dangerous due to the uncontrollable menaces of sandstorms, attacks by brigands, and the possibility that oasis wells might have dried up or been poisoned since the last visit.

A major trans-Saharan caravan was not a single business enterprise but rather a temporary association of several North African merchants under the leadership of a paid guide. Although the camels were technically owned by the merchants, in effect they



From about 800 CE to about 1500, camel caravans traversing the Saharan desert were the only links between the world economy and major sources of gold and slaves in West and Central Africa.

were rented from desert communities, which also supplied the skilled labor to care for them. On arrival in the Sudan, the camels would be sold. When the time came for a return journey a new, usually much smaller, number of beasts was purchased.

Despite their limited scale and lack of control over their main transport capital, trans-Saharan merchants did make use of quite sophisticated commercial instruments. Thus much of their business was carried on by means of credit, recorded in written documents that accompanied caravans in lieu of currency or any goods that could not to be sold in local markets. As religious learning became more widespread in the Sahara and Sudan, merchants could also extend their range of partnerships beyond individuals with whom they had close personal ties, confident that agreements would be guaranteed by appeal to the extensive commercial stipulations of Islamic law.

The Impact of Atlantic Trade Routes

The European voyages of discovery of the fifteenth and sixteenth centuries opened up a new system of maritime traffic between Europe, Asia, and the Americas that reduced the global significance of all the world's long-distance caravan transport, including the Saharan routes. However, from the perspective of northern and Sudanic Africa, new markets on the Atlantic coast and a general expansion of international trade provided opportunities for economic growth. It is easy to understand why Sudanic societies and the neighboring gold-bearing regions would benefit from sending some of their exports south, but not so obvious why such commerce should also continue

across the desert, given the far greater efficiency of water over land transport in this preindustrial era. The answer lies in the natural protection afforded by the forest zone separating the Sudan from the Atlantic. Travel across that landscape was even more costly than travel in the Sahara, since pack or draft animals could not withstand the disease ecology there and trade goods thus required human portage.

One of the first commodities that Europeans sought on the West African coast was gold. By the fifteenth century the most productive source of this metal within the region did lie near the ocean, in present-day Ghana, which thus acquired its colonial name of "Gold Coast." Europeans managed to divert much of the gold trade away from the Sahara, provoking the sultan of Morocco to launch an invasion of the Sahara and, in 1591, to take over the Timbuktu entrepôt. The Moroccan effort and the still-expanding Sudanic merchant networks within the forest zone assured some continuation of trans-Saharan gold trade. But by the 1800s this commerce had become much reduced and irregular, often constituting no more than a few feather quills filled with gold dust, carried as supplements to other commodities.

In any case, the large amounts of bullion exported from the New World from the sixteenth century onward ended the major role of West African gold in the world economy. For Europeans, the most important export from this region was slaves, who were shipped from the entire Atlantic coast of the continent in huge numbers. However, the demand for labor and military manpower in the Islamic world also increased during the centuries after 1600. Even in its last three hundred years the trans-Saharan slave trade is not

A camel makes an elephant feel like a jet plane. • Jackie Kennedy (1929–1994)

nearly as well documented as its Atlantic counterpart, but as far as we can tell, it increased despite the competition. This complementarity may be explained by the general growth of African populations due to the nutritional impact of New World crops such as maize, cassava, and peanuts. Also, in contrast to the New World slave trade, which generally imported two males for every female slave, Islamic markets for slave labor somewhat favored women over men. European efforts to end the trans-Saharan slave trade provide us with some of our best information on its extent, but they did not become effective until shortly before 1900.

Innovation and Termination

During its last important era (c. 1700–1900), the trans-Saharan trade came to include large quantities of items that had previously formed only a very small percentage of caravan cargoes, such as the hides and skins of goats and cattle, ivory, and, for a brief but very flourishing period in the latter 1800s, ostrich feathers. During this time cities in the western and central Sudan developed their own handicraft industries, which provided Saharan populations with their characteristic blue cotton garments and also produced tanned “Moroccan” leather for export overseas.

This final flowering of trans-Saharan commerce depended upon increased world demand for various consumer goods and the intermediate commodities used in producing them (such as gum arabic, obtained from several species of acacia trees native to the Sudanic region and used in finishing cloth). The driving force of this expanding market was the industrializing economy of Europe and North America. Once Europeans, for reasons having little or nothing to do with trans-Saharan trade, took formal colonial possession of western and west central African territories, new industrial technologies broke through

the forest barrier that had protected desert routes. Railways and later roads now provided the Sudan with direct access to the Atlantic. Despite occasional French fantasies, no rail or road arteries were ever built across the Sahara, where camel caravans still carry salt from desert quarries to the lands of the south.

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See also Camels; Caravan; Gold; Slave Trades

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Transportation—Overview

Human beings keep inventing more and more powerful ways of moving themselves and other things across the Earth and, more recently, through the air and into outer space. Systems of transport defined the range and intensity of contact that local populations had with outsiders; those contacts in turn regulated the frequency with which important new things, skills, and ideas were disseminated.

Changing modes of transportation throughout the millennia allowed wanderers, traders, and missionaries to carry themselves—and innumerable different ideas and things—across the face of the Earth, moving ever further, faster, and more frequently. As transport expanded in range and carrying capacity, it accelerated historical change by bringing new ideas, new skills, and new goods to new places, and tightening the human web of communication that existed from the time language emerged and bands of fully human beings began to spread from the African savannas where they first arose.

Origins

To begin with, human muscles were the only means of transport our ancestors knew. By walking erect and relying solely on leg muscles for locomotion, they freed hands and arms for carrying babies and all sorts of other things. Eventually, human carrying capacity was much enlarged by using pouches tied to the waist, and by carrying heavier objects in slings stretched across the shoulders, using backpacks, and balancing jars on top of the head. But no one knows when or how these adjuncts to unaided human muscles

originated or how they spread. Nonetheless these simple forms of transport continue to exist. Women carrying jars of water on their heads can still be seen in places where pipes do not bring it into their homes, for example. And children carry books to school in backpacks in most modern cities.

A superior cooling system makes human bodies unusually efficient load carriers thanks to our sweat glands. As it evaporates, sweat dissipates body heat far faster than panting does, thus sustaining prolonged muscular effort even under a tropical sun. Vigorous persons can walk up to twenty miles a day even with loads of twenty to thirty pounds. Accordingly, for hundreds of thousands of years, foragers moved about in small bands, carrying everything they needed with them day after day. On festival occasions they met and danced with neighbors and sometimes encountered wandering strangers. Such contacts allowed exchange of rare and precious objects, like razor-sharp obsidian blades, across hundreds of miles. Superior tools and weapons, such as the bow and arrow, also spread very widely by the same sort of occasional contacts and collisions among small wandering bands.

As our ancestors spread across the Earth some bands left tropical warmth behind and had to learn to live in diverse climates. This too provoked invention—clothes for example. But as far as transport was concerned, the really important advance was learning to move across water. Sitting astride a floating log was perhaps the first sort of flotation. But when, where, and how human beings first learned to make and use burden-bearing rafts and boats is unknown. We do know that people got to Australia sometime between 60,000 and 40,000 years ago, and can only



Boats and ships throughout history have transported humans and their material goods. In this drawing from late-nineteenth-century China, two sailboats make their way on the Yangzi (Chang) River.

have done so by crossing about sixty miles of open sea. This required rafts or boats of some sort; and therefore counts as the dawn of human seafaring, even though contact with the Asian mainland was not subsequently maintained.

Movement Through Water

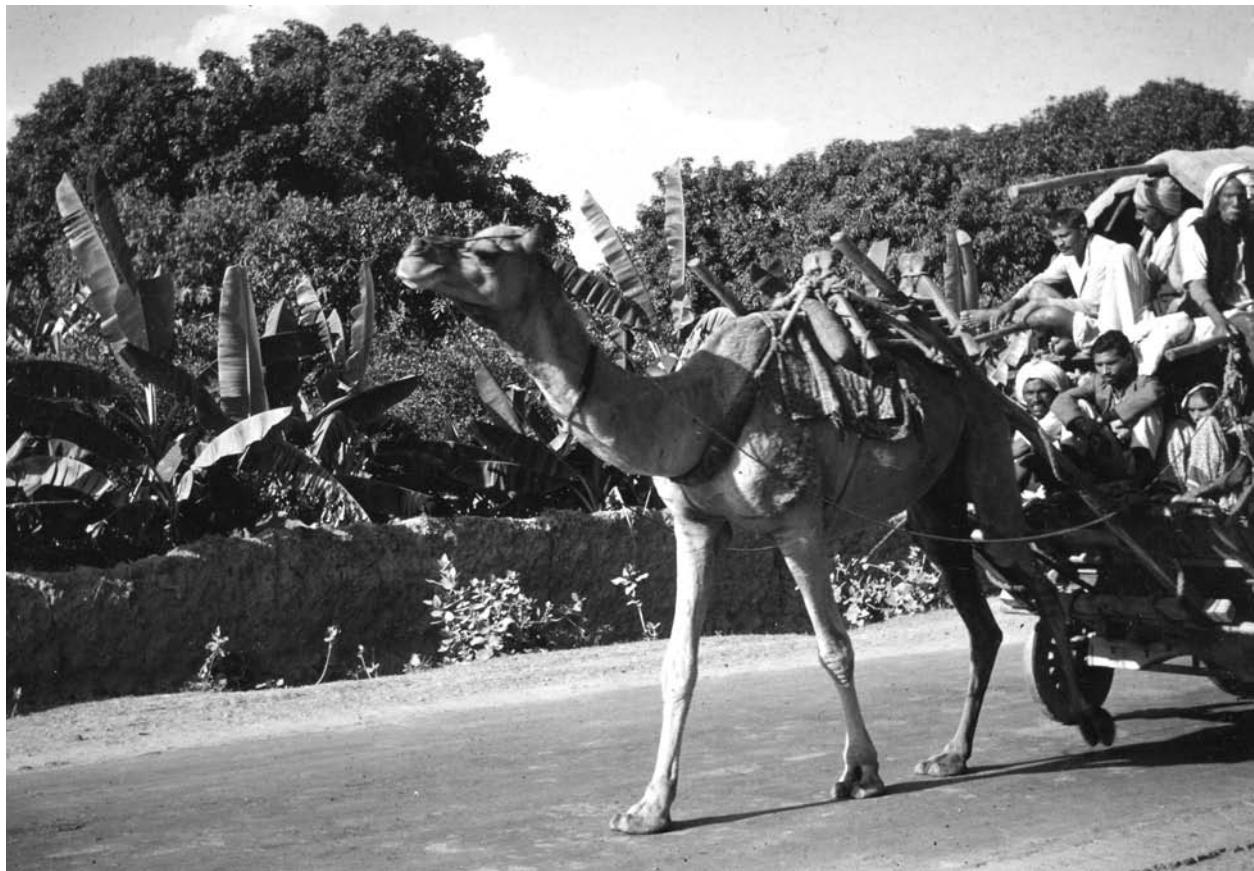
Fishing at sea from rafts and boats was of lasting importance and probably first flourished on the monsoon seas of Southeast Asia. Monsoon winds blow equably for nearly all of the year, reversing their direction each spring and autumn. That made sailing safer and easier than on stormier seas. Fishermen, of course, had to be able to get back to shore with their catch, preferably arriving at the harbor or beach they had departed from to rejoin women and children left behind. In other words, they had to be able to steer and move across or even against the wind and sea or river currents. Various combinations of keel, paddles, oars, and sails eventually made that possible, but all details are unknown.

Yet it is obvious that when controlled movement through water had been mastered, long journeys also became feasible up and down rivers, and by sailing within sight of land, hauling boats or rafts ashore when needing to rest. As a result, navigation by sea and along suitably slow rivers began to match and more than match overland transport, since rafts, dug-out canoes and small boats (sometimes made of animal skins stretched on a wooden frame) carried larger loads longer distances with far less muscular effort than moving cross-country required. But for a long time stormy coasts where high tides prevailed were too dangerous for such navigation. Accordingly, to begin with travel and fishing at sea flourished principally along monsoon coasts of the Indian Ocean, the southwest Pacific Ocean, and the numerous Southeast Asian islands in between.

Domesticated Animals as Transport

Starting about 11,000 years ago, in several different parts of the Earth, people settled down and began to live in agricultural villages. Producing the food they ate by prolonged muscular effort allowed human populations to become far denser than before. They also needed more transport. After all, foragers moved themselves to where their food grew naturally; while farmers had to carry enough food for a whole year (plus seed for the next season) from where it grew to a safe place for storage near their dwelling places. In addition, more and heavier things were worth having when people remained in the same place year round; and some of them—roof timbers, for example—often had to come from afar.

Enhanced need for transport was met when many (not all) food producers began to use the strength of domesticated animals to carry loads. Early farmers in western Asia were particularly lucky in having within their reach a variety of domesticable animals that were useful for transport: cattle, donkeys, horses, mules and camels, Water buffalo in India and Southeast Asia, yaks in Tibet, llamas and alpacas in Peru, and reindeer in the Arctic north were also locally important as beasts of burden, but fell far short of the



Hindu pilgrims in India travel on a two-tier camel bus in Mathura. Photo by Klaus Klostermaier.

capabilities of the animals of western Asia. Accordingly, they eventually spread very widely among other peoples, wherever climate allowed and sufficient fodder could be found.

Donkeys were easiest to manage. By 4500 BCE or before, caravans of donkeys began to traverse western Asia carrying specially valued goods on their backs for hundreds of miles. In the land of Sumer near the shore of the Persian Gulf this overland transport system intersected with rafts and boats moving along the Tigris and Euphrates rivers, and with the long-range coastal shipping of the Indian Ocean. By about 3500 BCE the mingling of peoples, skill and knowledge that this far-ranging transport network created led to the rise of the world's first cities and of what we call civilization.

Later on, horses and especially mules tended to displace donkey caravans in western Asia since they could carry larger loads. Elsewhere, other transport networks—sometimes relying solely on human portage, as in Mexico—allowed other cities and civilizations to arise. They signaled a fundamental departure

from older and simpler forms of human society. Being places where strangers perpetually came and went, and where rules of kinship and local custom could not cope with important everyday encounters, cities, and then states that embraced a plurality of cities, needed new kinds of authority and subordination to function smoothly; managing long-distance exchanges, safeguarding new forms of wealth, and keeping invisible spirits and gods friendly demanded special attention. To meet these needs, a few privileged city dwellers ceased to raise the food they consumed, finding ways to induce or compel farmers round about to hand over part of the harvest to them.

In Sumer and in most (but not all) other early civilizations, priests claiming to know how to please the gods by conducting sumptuous temple rituals were the earliest managers of urban society. Beginning about 3000 BCE, military leaders began to rival them since gathering and defending new forms of wealth required ever-greater effort. Everywhere priests and warriors sooner or later came together and jointly supervised a

transport system that brought large quantities of food and fiber into city storehouses, and used what they collected from the countryside to maintain themselves and to feed specialized artisans who manufactured a multiplicity of objects for the use of professional soldiers and for religious rituals. In Sumer, spinning and weaving wool and dispatching bales of cloth on donkey-back to exchange for items needed to keep soldiers, priests and gods happy—metal, timber, lapis lazuli, perfumes and much else—was especially significant since it kept the cities of Sumer in touch with diverse and distant hinterlands.

The Wheel

Sumerian rulers thus became the managers of a transport network that brought anything of unusual interest or usefulness to their attention from across many hundreds of miles. Wheels, capable of carrying heavier loads with far less effort than before, were among the items invented somewhere within that network, and duly appeared in Sumer where wheeled toys of clay show up a long time before archaeologists have found any traces of actual carts and wagons. At first, wheels were made of solid wood, fixed to an axle that turned underneath the body of the cart or wagon. About 1800 BCE fixed axles and spoked wheels were invented, concentrating friction in well-greased wheel hubs so that pulling heavy loads became far easier than before.

Spoked wheels and hubs made chariots decisive in war, while carrying large quantities of grain, wool, timber, and other heavy commodities on two- and four-wheeled carts and wagons supplied armies and cities much more easily than before. A pair of oxen hitched to a four-wheeled wagon by their horns could pull thousands of pounds across the dry and level landscapes that prevailed in the land of Sumer. But in hilly and wetter places, carts and wagons long remained of little use because they bogged down in mud and could not cross streams.

Other civilizations constructed other transport systems to supply their cities and sustain states and their rulers. Within the Old World, contact by land among

the principal civilizations depended on caravans using one or more of the animals of western Asia. Caravans attained more or less permanent trans-continental linkages after 101 BCE when the Chinese emperor Wudi sent an expedition westward to central Asia looking for a new breed of “blood sweating” horses to use in wars against steppe nomads. He succeeded in his quest, and in subsequent centuries contact across Asia was never broken off for long. Silk, metal, and other precious goods traveling overland between China, India, and western Asia were matched by the spread of ideas, especially the missionary religions, Buddhism, Christianity, and Islam that fitted the human needs of city living. Infectious diseases also spread far and wide along caravan routes, leaving survivors with antibodies in their bloodstreams that were effective against an expanding array of lethal infections.

Caravans had their limitations however, since even a camel, the strongest caravan animal, could only carry about four hundred pounds. Making rough terrain suitable for wheeled vehicles in order to carry heavier loads required building smooth, firm roadways, and bridging streams. That required prolonged and costly effort. Nevertheless, the Assyrian Empire (935–612 BCE) pioneered large-scale road construction. It did so to allow marching soldiers to repel invaders and suppress revolts more quickly. But armies needed supplies from the rear, so merchants used military roads from the start, and long-range carrying capacity by wheeled transport correspondingly increased wherever roads existed.

Later empires, both in China and Europe, also put much effort into building roads. Roman roads are especially well known. They eventually linked the city of Rome with all the provinces except insular Britain, while within Britain local roads linked the productive south with the north, where a garrison defended a wall intended to keep barbarians out. Yet sea commerce across the Mediterranean was far more important for Roman society than anything transported by road. Ships circulated articles of common consumption—grain, wine, salt, cloth, pottery, and much else—among the coastal cities. The Roman roads fed that sea commerce by extending its reach

Mass transportation is doomed to failure in North America because a person's car is the only place where he can be alone and think. • **Marshall McLuhan (1911–1980)**

inland, and also linked up along the northern border with river shipping on the Rhine and Danube Rivers and with the Nile in the south.

Roads during the ancient Chinese dynastic period were less important than those of Rome largely because a network of rivers and canals assured the Chinese government of capacious and cheap internal transport. Empire (935–612 BCE) canals in the Huang (Yellow) River and Yangzi (Chang) basins were initially built for irrigation purposes; but once in place the government could collect taxes in kind from farmers many hundreds of miles from the capital, carrying everything in barges. Sometimes barges simply drifted or sailed down stream, and sometimes gangs of porters had to haul them upstream, pulling on ropes from the banks. That extended navigation far inland; and since such barges carried large quantities long distances very cheaply, they knitted the most densely inhabited regions of China into a single whole much more tightly than anywhere else in the world. Beginning about 1000 CE China accordingly pioneered the construction of a market economy, lubricated by paper money, which embraced ordinary peasants and common taxpayers.

Continental Variations

Elsewhere in the world, the balance between shipping and overland transport varied with topography, climate, and the array of domesticated animals available. In the Americas it is possible that some early immigrants from Asia came by sea, beginning about 20,000 years ago. At any rate, Native Americans were familiar with canoes and rafts long before Norsemen got to Newfoundland, and canoe navigation along the Amazon, Mississippi and lesser rivers was long established when Europeans showed up on the scene to record the fact. The Hopewell and Mississippian peoples of North America, for example, used materials and a few specially manufactured goods that came from hundreds of miles away. Metallic copper from Lake Superior and tobacco pipes were among the objects they carried up and down the rivers of North America. Overland transport among Amerindians

depended on human portage, except in the high Andes of South America where llamas and alpacas supplemented human muscles.

In South America successive empires also constructed an extensive road system in the mountainous terrain of the high Andes that was quite as impressive as that of the Roman Empire. Coastal navigation on the Pacific, in which light balsa rafts played a part, also connected Peru with Mexico in a slender and almost unrecorded fashion; while canoes traveled widely among the islands of the Caribbean as well.

Parts of North Africa shared the caravans and shipping of western Asia; but further south, where tsetse flies made it impossible for horses and cattle to survive, human portage remained the primary mode of overland transport until roads and trucks took over in recent times. Native Australians also relied on human portage entirely. Overall, major improvements in transport continued to concentrate in Eurasia and along its fringes where the overwhelming majority of humankind were already linked by an ever-intensifying web of transport and communication.

Within Eurasia, a striking change came to overland transport when domesticated camels became more common after about 200 CE. These animals were hard to breed successfully; but when the arts of camel management spread from South Arabia, and when a somewhat larger, related species, the two-humped Bactrian camel had been domesticated in central Asia, caravans became far more efficient than before. First of all, camels carried heavier loads than horses and mules. They could also fuel their muscles by grazing on scattered, thorny vegetation in desert landscapes and go for several days without water. Consequently, crossing deserts became possible as never before. All of a sudden, the Sahara in northern Africa became passable; so did deserts in Central and western Asia.

The effect was rather like what happened later when Europeans began sailing across the world's oceans. New peoples and separate civilizations within the Old World, became far more accessible to one another and



exchanges of diseases, skills, and ideas attained new range and rapidity. The most conspicuous result of camel transport was the remarkable speed with which the faith of Islam spread from Arabia across western Asia and began to penetrate India, East Africa, central Asia and, before long, eastern Europe as well. Initial Muslim victories depended on cohesion sustained by their religious faith, but superior logistical support from camel caravans also contributed mightily.

Using camels for overland haulage was cheaper than maintaining roads for wheeled vehicles, so in the Muslim heartlands of western Asia existing roads were allowed to decay and city layouts changed since narrow passageways sufficed for camels. Wheeled transport continued to exist in fringe areas—Europe, China, India and the steppes. But for centuries cheap overland transport on camelback gave Islamic peoples an advantage, especially after they perfected legal systems that allowed camel caravans to move safely through settled regions.

Obviously, desert foraging at night only worked in uninhabited places. Letting camels loose to feed on growing crops was bad business for farmers and merchants alike. Instead, Muslim governments built caravanseries where men and beasts could stay overnight and allowed charitable landowners to escape taxation by dedicating selected estates to supplying free provender for travelers. In effect, free desert forage was thus ingeniously reproduced in agricultural landscapes, reconciling the needs of traveling merchants and their animals with the interests of peasants and landowners. Free food and shelter along the way meant that out-of-pocket costs for caravan transport became surprisingly slender so camels could compete on some routes with ships using free energy from the wind.

Since Muslims shared advances made in ship design until after about 1300, their combination of cheap transport by land and sea was unmatched elsewhere. Muslim traders accordingly became the most successful in the world, operating along the coasts of China and Mediterranean Europe, while penetrating the Eurasian steppes and much of sub-Saharan Africa.

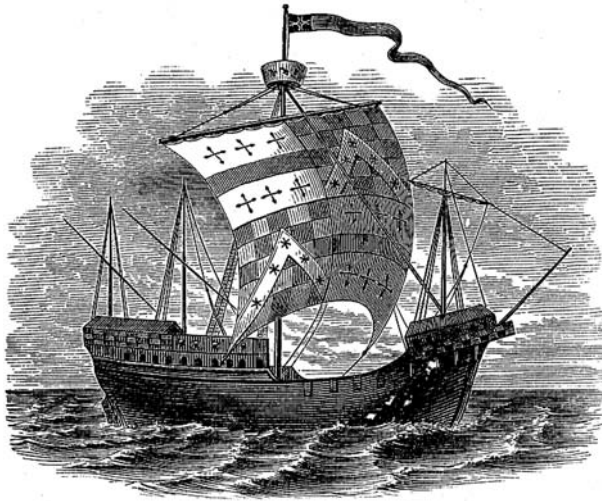
Sailing the Seas

Yet eventually advances in shipbuilding and navigation made sailing on stormy and tidal waters of the northerly Pacific and Atlantic oceans feasible. Thereupon all-weather ships inaugurated long distance transport networks that eventually carried luxuries and goods of common consumption around the whole Earth. Yet it took a long while for all the prerequisites for safe and reliable all-weather shipping to come together. And since wooden boats seldom leave archaeological traces, knowing when and where shipbuilding practices changed is largely guess work.

One breakthrough was the invention of pontoon outriggers to stabilize dugout canoes. These outriggers allowed canoes to carry larger sails and move far faster through rougher seas. Probably as a result, about 500 CE sailors from Borneo crossed the Indian Ocean and settled the island of Madagascar off the East African coast for the first time. Before then, other sailors had moved into the Pacific, and occupied islands as distant as the Solomons. Such lengthy voyages are attested by linguistic affinities between the so-called Malagasy language of Madagascar and languages of Borneo in the East Indies; and by the array of Austronesian languages that range across islands of the Southwest Pacific.

Some centuries later, speakers of Polynesian languages began to cross far greater Pacific distances, reaching Hawaii, Easter Island, New Zealand and some tiny atolls in-between. Exact dates of their arrival are unsure but it seems clear that New Zealand was the last to be settled, perhaps only about 1300 CE. The Polynesian dispersal clearly did depend on sailing canoes equipped with outriggers, and their voyages constitute a surprising accomplishment since finding isolated islands in the immensity of the Pacific was hit and miss. As a result, people on most of the Polynesian islands failed to maintain contact with the outside world until European seamen suddenly intruded on them after 1522.

Austronesian and Polynesian sailing across the southern oceans was matched by increasingly successful ventures across the stormy seas of the



A sailing ship in the style used by fifteenth-century European explorers.

north. Light boats made of animal skins floated buoyantly even on top of big waves; and a keen eye to the weather allowed sailors using such vessels to come and go short distances more or less safely on the northern reaches of the Pacific, Atlantic and Arctic oceans. Inuits, for example, spread around the Arctic shoreline from somewhere in Asia, moving by kayak and dog sled; and learned to harpoon whales from larger skin boats about 800 CE. By that same time, coracles made of cattle skins had carried a few Irish monks to Iceland across the North Atlantic.

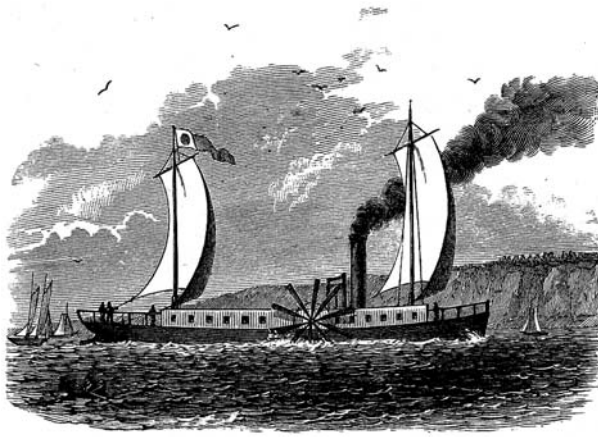
But just as navigation across really long ocean distances in the southern seas required outrigger pontoons and larger sails, so the stormy northern seas could only be regularly crossed by building larger ships that cut through the waves rather than riding lightly on top of them. In the North Atlantic, Viking ships of the ninth to eleventh centuries were a halfway step towards safe navigation. Built of overlapping planks nailed to a heavy rib and keel frame, and rendered waterproof by careful caulking, they were propelled either by oars or, when the wind was favorable, by a square sail. They dodged storms by going ashore or taking refuge in harbors along the Atlantic and Mediterranean coastlines of Europe and rowed up and down the rivers of Russia and western Europe as well. Sometimes they went raiding and destroying, sometimes they traded or set themselves up as rulers, and sometimes they pioneered

settlements of almost uninhabited landscape as in Iceland, Greenland, and, for a short while, even in Newfoundland. Viking boats were strongly built to cut through big waves, but since they needed large crews for rowing against the wind, they had limited cargo capacity and their open hulls allowed seawater to splash over the sides, soaking crew and cargo alike.

Really satisfactory all-weather ships needed closed decks, and ways to steer and sail upwind and against the tide if necessary. Such ships were eventually constructed in China and in Atlantic Europe, using quite different designs. Chinese ships were flat-bottomed vessels with hulls divided into separate water-tight compartments. Instead of keels, they had center boards that could be raised and lowered through a slit in the bottom, and were steered by stern-post rudders and by using multiple masts and sails. By the fourteenth century, the largest Chinese seagoing vessels were huge, expensive and efficient. Admiral Zheng He, for example, led a series of voyages to the Indian Ocean between 1405 and 1433, the first of which comprised sixty-two ships and carried no fewer than 27,800 men.

By that same date, sea-going European ships improved on Viking designs by being decked over, with double planked hulls nailed, inside and out, to a rib and keel skeleton as before. They dispensed with rowing by using multiple masts and sails, some triangular (originating probably in the Indian ocean) for tacking into the wind, some square for sailing before it. Such a combination of masts and sails, together with stern-post rudders (probably coming from China), made it possible to come and go almost at will despite the variable winds and strong tides that beset Europe's Atlantic coastlines. Indeed once sailors were capable of traversing those stormy seas, other oceans of the Earth, except the frozen Arctic, were comparatively easy since the reversible monsoons of Asia were matched by trade winds north and south of the equator that blow year round from a single but opposite direction.

Deciphering the pattern of ocean winds and currents was a matter of trial and error over generations,



Robert Fulton's first steamboat on the Hudson River, 1807.

as ships became capable of longer and longer voyages. Arab, Indian, Polynesian, Malay, Chinese, Japanese, European and other seamen all did so within their different, and sometimes overlapping ranges of operation. By 1492 such knowledge had accumulated among seamen so that Columbus, for example, knew exactly how to go south to the Azores, then sail west before the northeast trade winds and return by sailing north to the zone of prevailing westerlies beyond Cape Hatteras. That was why his voyage was so swiftly and regularly repeated, and why European seamen so suddenly began to traverse all the world's oceans within a mere thirty years after 1492.

Methods for measuring latitude north and south by sighting the sun or north star allowed ships to steer accurately towards a known coastline, and increasingly accurate local maps and charts made getting into and out of distant ports much safer. Magnetic compasses, coming from China initially, also allowed ships to maintain a steady direction under clouded skies where sun and stars could not be seen. But until the eighteenth century sailors could not measure east-west longitude. Finding small islands and exact time of arrival on familiar coasts across ocean distances therefore remained hit and miss until marine chronometers, able to keep time for weeks and months on end, made longitude at sea accurately measurable after 1762.

Nonetheless, European capabilities of ocean voyaging transformed human affairs rather quickly long before finding small islands became easy to do. The Chinese government had withdrawn from overseas

ventures after 1433 and disbanded its sea-going fleet so as to concentrate its resources instead on guarding China's land frontier against the Mongols. This left European seamen without serious competition on a global scale, since light-built shipping of the southern seas could not endure northern storms. The stout construction of North Atlantic ships also withstood the recoil of newly invented heavy cannon, and this gave European ships another advantage over more lightly built vessels. Cannon-carrying European ships made older ramming and boarding tactics of naval warfare suddenly obsolete since they could sink approaching enemies at a distance, and could even threaten local rulers ashore with punishing bombardment. Wherever such vessels appeared therefore local rulers had to accommodate them, allowing Europeans to come ashore for trade and sometimes paying them tribute.

Overall effects were especially catastrophic in the Americas and among other previously isolated populations. That was largely because unfamiliar lethal diseases brought by European seamen wreaked havoc on such populations, totally lacking, as they were, in acquired resistances to all the newly arrived infections. Drastic depopulation ensued, allowing newcomers from Europe, together with large numbers of slaves imported from Africa to transform the culture and character of American populations. Similar destruction and replacement took place in Australia, New Zealand and Oceania some centuries later.

The peoples of Eurasia and most of Africa were already disease-experienced, thanks to long-standing transport connections overland and by sea. Nonetheless, Eurasia and Africa were profoundly affected too by the onset of global seafaring. To put it in a nutshell: as coastal contacts became more and more significant for trade, for war and for exchanges of skill and ideas, the Eurasian continent was in effect turned inside out. Previously, China, India and the Muslim heartlands of western Asia had to concentrate attention on their land frontiers. Cavalry tactics, dating back to about 750 BCE, gave steppe nomads superior mobility with the result that adjacent farming populations suffered frequent raids and occasional



A bus station in central São Paulo, Brazil (pop. 20 million). An improved bus system is underway in the region to relieve a burdened public transportation infrastructure.

conquests across the next two millennia. Defending, negotiating, and competing against nomad states and armies was correspondingly critical for farmers of the Eurasian fringe lands. The Chinese government's decision to withdraw from the Indian Ocean in 1433 demonstrated that concern, only to open China to harassment from the sea when Portuguese ships showed up along the South China coast in 1513 and swiftly elbowed their way ashore at Macao by the 1540s.

India, Java and other Southeast Asian lands also allowed Europeans to set up fortified trading forts; and French, Dutch and English trading companies soon transformed themselves into local rulers. Ensuing armed struggles made the Dutch supreme in Indonesia and the English in India by 1763. Penetration of the Muslim heartlands was slower but after Napoleón's invasion of Egypt in 1798–1799, the Ottoman Empire and other Muslim states found it impossible to keep Europeans from demanding and getting trade and other privileges. East Asians held out until first the Chinese (1839) and then the Japanese (1854) saw their best efforts to keep Europeans at arm's length crumble under the threat of naval guns. Thereafter, efforts to transform old ways and somehow catch up with European power by appropriating at least some European skills

and ideas prevailed throughout the non-European world.

By that time, however, European intruders had acquired new advantages by using newly invented steamships and railroads to transcend older limits. Steam engines, fired by burning coal in the nineteenth century, and oil-burning internal combustion motors in the twentieth century provided far greater energy for transport, carrying greater loads much faster and far more predictably.

For ocean distances, practicable steamships dated from 1819 when a steam-assisted sailing ship first crossed the Atlantic. Rapid development ensued, featuring a sudden increase in size after 1858 (when iron construction replaced wooden hulls), and a subsequent race to speed up Atlantic crossings that reduced them to less than a week by the 1930s.

For river transport, shallow-draft flat-bottomed steamboats with paddle wheels amidships flourished mightily for half a century after 1807, when Robert Fulton made his successful run up the Hudson River. Steamboats, however, suffered eclipse in the United States after the 1860s, since railroads proved faster and more convenient. Nevertheless, they remained of critical importance on African rivers and in parts of Asia where railroads were not built until roads and trucks supplanted them after about 1930.

The Advent of Rail Travel

For overland transport, steam powered railroads followed close behind oceanic steamships. The first commercial steam railroad, 25 miles long, opened in England in 1825; but building longer railroads was costly and took time. Railroads therefore began to come into their own only in the 1860s. The first transcontinental railway opened in 1869 when the Union Pacific Railroad in the United States was completed. Thereafter European investors financed railroad building wherever strategic or commercial advantages suggested. The opening of the Trans-Siberian Railroad in 1903, connecting St. Petersburg on the Baltic with Vladivostok on the Pacific, was the longest railroad ever built and still helps to hold the Russian state together.

In western Europe itself, railroads gave easy access to inland coalfields, accelerating industrial development enormously. Railroads also played a prominent part in European wars as early as 1859, climaxing during World War I (1914–1918) when railroad schedules for mobilization locked initial war plans into place, and subsequently supplied all the war fronts for years on end.

The impact of railroads was especially great in large countries like the United States, Russia, Canada, India, and Argentina, binding them together internally more closely than before while also entangling them in worldwide markets. China as always remained different, for old-fashioned barge transport on internal waterways continued to function slowly but cheaply; and for more than a century political instability inhibited large-scale railroad construction.

For the world as a whole, steam ships and railroads together created a far faster and more capacious transport system than before. Millions of persons emigrated from crowded lands in the Old World to settle in the Americas, Australia, New Zealand, and South Africa. Vast quantities of grain and other foods, together with minerals and other raw materials, and innumerable manufactured goods began to circulate throughout the world. Simultaneously, European intruders took advantage of steamboats

and railroads to penetrate China and Africa as never before. Japan, however, built its own railroads and steam ships. Everywhere else the new modes of transport were owned or managed by Europeans or persons of European descent until well into the twentieth century.

Until 1945 or so, Europeans retained this privileged position and, by making some accommodation to the United States after 1865, managed world affairs pretty much to suit themselves. Near monopoly of mechanical transport and communication sustained this lop-sided arrangement for a while, but it remained inherently unstable. One such instability arose from rivalries among the chief European states, climaxing in two world wars, 1914–1918 and 1939–1945. Just as important was the way the propagation of the new transport (and communication) nets among Asian, African, and American populations allowed local peoples to mobilize their discontents and prepare to assert control over their own societies again. As a result, soon after World War II European colonial empires disintegrated everywhere.

New Modes of Transport in the Twentieth Century

More decentralized and flexible forms of overland transport powered by internal combustion motors sustained this political transformation. Cars and trucks first became important for the transport of goods and persons during World War I. Trucks commonly carried loads door to door, diminishing transfer costs. In addition, individuals and small companies could compete with larger fleets of trucks on more or less even terms. Roads still had to be built and maintained by public authorities and remained costly. But roads were considerably cheaper to build than railroads. Hence for hauls of less than three or four hundred miles, the convenience and flexibility of trucking was almost as superior to railroad transport as railroads had been to river steamboats eighty years before.

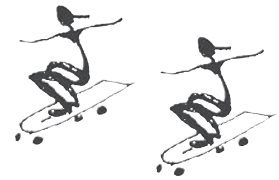
Almost simultaneously, airplanes began to affect transport. Airplanes took off with the Wright brothers' flights in 1903, but World War II was what



China's most popular means of transport. With imported cars clogging the roads, and narrow *hutong* alleyways to traverse, the Chinese depend on their bicycles.

made them important for transport, a generation after cars and trucks had come of age during World War I. Transcontinental flights were pioneered in the 1930s, but Allied armed forces first made large-scale air transport global between 1941 and 1945. Planes became faster and larger in the following decades and air transport expanded accordingly. By the 1950s, variously subsidized national airlines combined to make tourist and business travel by air normal. Air delivery of mail and important packages displaced older means of transport for long distances; but airplanes seldom carried heavy objects or bulk commodities. Their high speed came at a cost that made air transport a semi-luxury.

All the same, in Arctic lands and some other barren and remote regions, light airplanes became the



only way to come and go, while long-distance flights, following great circle routes, crisscrossed the globe, weaving a new pattern that made passage across high northern latitudes important as never before. Another side effect of flight was the establishment of uniform weather reporting, and use of English for air traffic control at airports everywhere—including even the Soviet Union during the Cold War.

Rockets were yet another form of transport emerging from World War II, but their loads remained far more restricted. Explosive warheads were the most threatening, but have never been used in practice. The most significant rocket flights launched various satellites and sensors into orbit around the Earth, or, in other cases, escaped Earth's gravity to explore the solar system and fringes of the universe beyond. Such sensors have expanded information about the Earth, moon, planets and stars enormously since 1957 when the Russians first launched *Sputnik* into orbit. Americans countered with the feat of sending men to the moon in 1969 and returning them safely. But the future of space travel remains uncertain. Being extremely costly, it will not likely affect everyday life in the way older changes in methods of transport have done throughout the past. But disaster from nuclear warheads delivered by rockets still remains a threat to the future of humankind.

Human beings have invented more and more powerful ways of moving themselves and other things across the face of the Earth and, more recently, through the air and into outer space. Successive systems of transport defined the range and intensity of contact local populations had with outsiders; and those contacts in turn regulated the frequency with which important new things, skills, and ideas caused people to abandon familiar ways and try something new. Accordingly, as transport and accompanying communication intensified, the pace of social change accelerated, distressing most of the people affected.

This is the awkward state of human society today. But as always the future remains unknowable. Nonetheless, transport will continue to affect how

people live, altering everyday experience by bringing novelties from afar for us to accept, reject, or modify just as our predecessors have always had to do.

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See also Automobile; Aviation; Camels; Caravan; History, Maritime; Horses; Interregional Trading Networks; Navigation; Railroad; Roads; Sailing Ships; Technology—Overview

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Travel Guides

For centuries travelers around the world have set out on journeys for a number of reasons—the love of adventure, spiritual pilgrimage, or to seek fame and fortune. Travelers recorded accounts of what they saw, heard, and experienced for both current and future wayfarers to consult. Thus, travel guides are valuable sources for studying global history.

The travel and tourism industries, analyzed globally, generate billions of dollars annually. The national economies of some countries rely heavily on tourists who visit for either work or recreation. Travel also affects other industries. The financial stability of the transportation system, comprised largely of airplanes, ships, and rail and road networks, is dependent upon travelers' willingness to journey beyond the confines of their home. The hospitality and restaurant industries profit from travelers' business. Modern travel guides, such as *Fodor's*, *Lonely Planet*, *Rough Guide*, and *Routard*, are lucrative for their publishers. New editions of travel books appear annually, focusing on tourist destinations around the globe. These new editions are read by novice and veteran travelers alike, eager to see the newest recommendations of restaurants, lodgings, and sights.

Yet, travel guides have a much longer history. For centuries travelers across the globe have embarked on journeys for a variety of motives. Such motives could include economic gain, spiritual solace, or merely the love of adventure. Travelers have recorded their sights and thoughts for both current and future wayfarers to consult. Thus, travel guides function as extremely valuable sources for studying global history.

Greek and Roman Travelers

Because the Roman Empire was physically extensive—about 4,800 kilometers from east to west—a system of well-designed and engineered roads and bridges was necessary for its successful administration. The Latin adage *omnes viae Romam ducunt* (all roads lead to Rome) attested to the safe, well-maintained network of roads that could permit a traveler to journey from the farthest regions of the empire to its heart.

Additionally, Rome was a cosmopolitan empire, with more than 50 million inhabitants, all of whom spoke various languages, worshipped many local and imperial deities, and engaged in a plurality of customs. The eastern provinces of the empire, where commerce and civilization flourished long before the Romans appeared, had a historic cultural and cosmopolitan legacy, ensuring its popularity as a travel destination during antiquity.

Greek epic poetry, such as Homer's *The Iliad* and *The Odyssey*, circa 800 BCE, conveyed the sense of excitement, but also danger, of travel. One of the earliest travel narratives is that of the Greek historian Herodotus. In his *Histories*, written around 440 BCE, Herodotus recorded his personal observations of his extensive travels in the Mediterranean basin, visiting places such as Egypt, the Black Sea, Scythia, Mesopotamia, Babylon, Cyrene, North Africa, and Anatolia (in modern Turkey). Ancient Greek writers who probably traveled to India included Ctesias (c. 398 BCE) and Megasthenes (c. 303 BCE).

Natural History (c. 77 CE) by the Roman writer Pliny was another travel account that influenced later

As the traveler who has once been from home is wiser than he who has never left his own doorstep, so a knowledge of one other culture should sharpen our ability to scrutinize more steadily, to appreciate more lovingly, our own. • Margaret Mead (1901–1978)

Europeans' perspectives concerning the world outside of Europe. Like Herodotus, Pliny recorded his firsthand observations of his travels in the world around him. But some parts of his work, such as his discussion on the “monstrous” races of the world outside of Europe, clearly had a basis in myth, bias, and a fear of the unknown.

East / West Connections

Although Pliny's account is not generally favorable toward non-Romans, his depiction of monstrous races nonetheless sparked Europeans' imaginations. Moreover, the sight of luxury goods—including Chinese silk, southeast Asian spices, Indian cotton textiles and pearls, and central Asian horses and jade, which traversed the central Asian Silk Roads—whetted Europeans' appetite for “exotic” items. The Romans, in turn, offered Asian markets various products, including glassware, jewelry, art, bronze, olive oil, wine, and gold and silver bullion.

Merchants and diplomats who traversed the branches of the Silk Roads recorded their observations. For instance, the detailed travel accounts of the diplomatic mission of Zhang Qian (d. 113 BCE), recorded in Sima Qian's *Shiji* (Records of the Grand Historian, c. 100 BCE), provide extensive information about the peoples and lands of central Asia, Persia (modern Iran), and northern India. This connection between East and West was not permanent, however. The collapse of the Han dynasty (206 BCE–220 CE), compounded with near-contemporary third-century crises of the Roman Empire, disrupted trade along the Silk Roads.

An Early Medieval Pilgrimage Travel Guide—The *Codex*

Religion also motivated travelers. The pilgrimage was a form of travel in which a person, as a form of devotion or penance, walked from his or her home to a shrine. Located at the shrine were relics—bits of clothes and/or body parts of saints, to whom the travelers could pray for intercession.

One of the most popular pilgrimage routes for medieval Christians led to the shrine of Santiago de Compostela, located in Galicia, the northwestern corner of the Iberian Peninsula. Surpassed in importance only by Jerusalem and Rome, the cathedral at the end of the 800-kilometer route housed the relics of Saint James, one of the twelve apostles. Pilgrims from all parts of Europe followed the route through the mountainous northern coast of Spain to Galicia. Because of the popularity of the route, the cleric Aimeric Picaud, between 1130 and 1140 CE, edited the *Liber Sancti Jacobi* (The Book of Saint James), also called the “*Codex Calixtinus*.” The fifth book of the *Codex* was essentially a pilgrim's guide and described to pilgrims the terrain and conditions of the land, pointed out major sights along the route, and warned them of hazards that could waylay the unfortunate pilgrim.

Medieval Travelers—Marco Polo and Ibn Battuta

Possibly the most famous travel narrative and guide of the Middle Ages was by the Venetian merchant and diplomat Marco Polo (1254–1324 CE). *The Travels of Marco Polo*, also known as the *Description of the World*, was a wildly popular account of his travels and travails. It was massive in its geographic focus, detailing the lands from Japan to Zanzibar. As a youth, Marco Polo had traveled from Venice with his father and uncle, who had made a prior journey to China, to the East to establish a new outlet for European exports. He spent about twenty years living and traveling in the East in the service of the founder of the Mongol dynasty, Khubilai Khan (d. 1294 CE), and traveled to China, Burma (modern Myanmar), India, central Asia, and Byzantium (modern Istanbul, Turkey). He undertook a three-year maritime return journey, returning to Venice in 1295 CE. Captured at the Battle of Curzola on 6 September 1298, Marco Polo was imprisoned in Genoa and there met Rustichello da Pisa, an author of romances, who eventually published Marco Polo's account. But Rustichello certainly fabricated parts of the text to create a gripping narrative; the presence of bandits, pirates, and wild animals points to the



hazards of travel. The luxury and common goods that pepper Polo's story point to the commercial nature, and rewards, of an enterprising journey.

A medieval narrative that can compare with Marco Polo's is the fourteenth-century *rihla* (travel narrative) of the Moroccan Abu 'Abdullah ibn Battuta (d. 1369 CE), *A Gift of the Observers Concerning the Curiosities of the Cities and Marvels Encountered in Travels*. From 1325 to 1349, Ibn Battuta traveled extensively and related his observations and experiences during his hajj (religious pilgrimage to Mecca in Saudi Arabia) and his subsequent travels within the dar al-Islam (Islamic world), from North Africa and the Arabian Peninsula to Delhi, Ceylon (modern Sri Lanka), Bengal, China, and Mali.

Early Modern Travelers

Travel writings did not cease with the "closing of the ecumene"—the arrival of Europeans in the Americas with the first trans-Atlantic voyages of the Genoese sailor Christopher Columbus (1492–1493). Columbus owned a highly glossed account of Marco Polo's travels, attesting to the influence that travel guides had upon exploration. From the fifteenth through the seventeenth century Europeans traversed the globe in increasing numbers, and with the development of the printing press, the volume of travel narratives exploded. The Englishman Richard Hakluyt (d. 1616), in addition to writing travel narratives, published accounts of travel and exploration to spur his countrymen to undertake additional journeys. In 1686 the French Huguenot Jean Chardin (1643–1713) published the first part of his narrative about his travel through the Safavid Persian Empire, *The Travels of Sir John into Persia and the East Indies*. In it he gave information about contemporary Persian customs, education, and mannerisms to an increasingly literate society.

The Eighteenth-Century "Grand Tour"

During the eighteenth century, to be young, wealthy, and of noble descent meant that one could embark

upon the "Grand Tour," an excursion that could last from months to years and during which one could learn about European politics, art, and culture. The tour became central in contributing to the education of young British aristocratic men. They especially favored Italian destinations, including Turin, Venice, Florence, and above all Rome because of its grandeur. The letters of William Beckford (1760–1844), published in 1783, comprise one of the most famous travelogues of the Grand Tour, romantically entitled *Dreams, Waking Thoughts and Incidents, in a Series of Letters, from Various Parts of Europe*. The latter half of the eighteenth century brought an increase in political stability for Europe as well as rapid technological advancement spurred by the Industrial Revolution, which made cheaper, safer travel easier. Nineteenth-century English travel literature, written by explorers, missionaries, and diplomats, was extremely popular among the literate classes, served British imperialist interests, and depicted the often-tragic encounters between indigenous and European peoples.

Perspective

The continuing historical analysis of the immense body of rich and unique primary sources that make up travel literature will provide answers to questions concerning history, anthropology, and ethnography (study of culture). Further studies of travelers' guides, many of which still await scholarly analysis, undoubtedly will offer increasingly nuanced understandings of the economic, political, social, and cultural interactions engendered by travel.

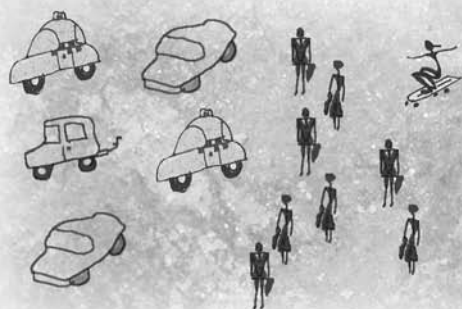
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See also Ibn Battuta; Pilgrimage; Polo, Marco; Tourism

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Treaty of Versailles

Negotiations at the Paris Peace Conference established the terms of post-World War I peace between the Allies and Germany, and culminated in the Treaty of Versailles signed on 28 June 1919. The process and the terms were highly controversial, and ultimately the League of Nations it established was ineffectual. The ensuing dissatisfaction, malaise, and revolt would eventually lead to World War II.

The Treaty of Versailles was the first and most important of the treaties that ended World War I. Signed at the Palace of Versailles outside Paris on 28 June 1919, the treaty was the product of the Paris Peace Conference. In essence the treaty established the terms of peace between the victorious “Allied and Associated Powers” (principally the United States, the British Empire, France, Italy, and Japan) and Germany.

The Paris Peace Conference itself opened on 18 January 1919. The key participants included U.S. president Woodrow Wilson, French prime minister Georges Clemenceau, British prime minister David Lloyd George, and Italian prime minister Vittorio Orlando. The victorious powers required almost four months to agree on the terms of peace. In addition, the conference determined the shape of the new League of Nations and the International Labor Organization. Only in late April, when a draft treaty was at last agreed upon, were the Germans invited to Versailles. Count Ulrich von Brockdorff-Rantzau, a career diplomat, led the German peace delegation representing the new Weimar Republic.

Quite apart from the terms of the treaty, the process of peace making at Versailles was intensely

controversial. Participants gave little thought to the consolidation of Germany’s new democracy. The treaty was handed to the Germans, as a virtual fait accompli, at a ceremony at the Trianon Palace Hotel on 7 May 1919. Clemenceau warned that no round-table negotiations would be contemplated. On 29 May the German delegation submitted a formidable list of counterproposals, complaining that the terms were scarcely reconcilable with either the spirit or the letter of President Wilson’s liberal speeches of 1918. In response, however, the victorious powers offered few amendments. On 16 June Clemenceau demanded a German signature to the treaty within five days (later extended to seven days) and threatened to resume the war if Germany failed to sign. Therefore, the German government was under immense pressure. In particular, the continuation of the economic blockade throughout the armistice period worsened a serious food crisis inside Germany that weakened the government’s bargaining position. The socialist-led government of Philipp Scheidemann resigned rather than sign the treaty as it stood. But a new socialist-led coalition government, under Otto Bauer, bowed to the inevitable and sent emissaries to sign.

Territorial Terms

The principal territorial terms of the treaty imposed significant transfers of territory from the former German Empire to its neighbors. Alsace-Lorraine was returned to France (restoring the border of 1815–1870). In the East a territory of 43,000 square kilometers, forming the greater part of the provinces of Posen and West Prussia, was ceded to Poland. This

territory, often referred to as the “Polish Corridor,” separated East Prussia from the rest of Germany. The city of Danzig, at the north of the Polish Corridor, was made a “free city” under the administration of the League of Nations. Memel in East Prussia was also ceded and eventually incorporated into Lithuania. In the west small border territories around Eupen and Malmédy were ceded to Belgium. Postwar plebiscites (votes) were also imposed in order to settle new territorial boundaries in a number of disputed zones: in Schleswig (resulting in the transfer of one zone in north Schleswig to neutral Denmark in 1922), in East Prussia (resulting in Germany’s retention of territory around Allenstein and Marienwerder in 1920), and in Upper Silesia (resulting in the division of the province between Germany and Poland in 1922). In addition to these territorial changes, the Rhineland, including three key bridgeheads beyond the Rhine River, was subjected to military occupation for fifteen years by Allied and Associated troops. The Saar River basin was transferred to the administration of the League of Nations for fifteen years (to be followed by a plebiscite), during which time the coal mines of the area were to be placed under French ownership. The greatest transfers of territory, however, took place in colonial possessions. Germany was deprived of its entire colonial empire. Under a complex system of League of Nations mandates, the former German colonies, containing almost 13 million people, passed to the administration of the victorious powers.

The military terms of the treaty achieved Germany’s effective disarmament. The army was reduced, by stages, to a maximum of 100,000 men, on the basis of voluntary enlistment. The Rhineland was demilitarized with respect to German arms and fortifications. The navy was reduced to a tiny fraction of its former size, and Germany was not permitted to possess any battleships of the dreadnought class, nor any submarines. Germany was not permitted to retain any air force. The German government offered little resistance to these provisions but insisted that disarmament should be applied to all nations.

Reparations

Germany especially resented the economic and financial provisions of the treaty. This resentment arose from the controversy surrounding reparations. During the war President Wilson, although rejecting the prospect of any punitive indemnity, had conceded the justice of reparations. Other victorious powers, and Britain in particular, hoped to achieve an indemnity within an expanded claim for reparations. At Paris, much to the chagrin of his own advisers, Wilson surrendered to pressure from Britain and France in favor of significant economic penalties against Germany. In an effort to appease popular expectations in Britain and France for a vast indemnity, negotiators drafted the notorious Article 231. This article asserted Germany’s responsibility for “causing all the damage” that the victorious powers had suffered “as a consequence of the war imposed upon them by the aggression of Germany and her Allies” (Sharp 1991, 87). Article 231 was soon interpreted inside Germany as an assertion of Germany’s sole responsibility or “guilt” for causing the war. It was alleged by German critics that this assertion of exclusive German war guilt underpinned all the economic clauses of the treaty. A huge indemnity was clearly in excess of the “compensation . . . for all damage done to the civilian population” (Schwabe 1985, 85), which Germany had accepted in diplomatic exchanges preceding the armistice (the Lansing Note of 5 November 1918). In the treaty Germany was obliged to accept an unspecified total of reparations. This total was likely to be massive because it had to cover a much-expanded list of legitimate damages drawn up by the Allies, including pensions to Allied servicemen. The treaty named no final total to be paid by Germany, but rather the Reparations Commission was established and charged with reporting a final total by May 1921.

The treaty’s consequences were of tremendous significance. In Germany the liberals and democratic socialists were smeared as “November Criminals” who had betrayed Germany by launching a revolution to



achieve democracy and peace on 9 November 1918. The revolution, it was alleged, had disabled Germany and ensured her defeat. In the eyes of rigid nationalists, democracy in Germany symbolized national humiliation. The victorious powers also did much soul searching. Critics argued that the victorious powers had undermined their own moral authority. The most influential criticism was by the British economist John Maynard Keynes. He had left the Paris Peace Conference in protest in June 1919 and published his passionate denunciation of the treaty, *The Economic Consequences of the Peace*, in December. In the United States, Wilson's failure to carry his own vision of a peace of reconciliation marked the treaty as a defeat for all those people promoting liberal internationalism. Disappointed liberals disavowed Wilson and the treaty. This disavowal contributed to Wilson's eventual failure to persuade the U.S. Senate to support either the treaty or U.S. entry into the League of Nations, despite a longer-running political campaign in 1919–1920. The U.S. decision not to enter the new league did much to debilitate the league during the 1920s and 1930s.

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See also Interwar Years (1918–1939); League of Nations; World War I

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Trees

Trees are vastly older than the human species, and the study of trees is itself a vast subject. With its focus on human/tree interaction through the ages, this article considers trees as objects of human veneration, as sources of food or obstacles to agriculture, and as wildlife whose “behavior” is affected by human actions.

Trees evolved some 360 million years ago, long before the humans whose cultures venerated them throughout history for spiritual or aesthetic reasons. Human interactions, however, from the earliest hunter-gatherers in the forests of the Paleolithic, have posed threats to forests and woodlands. Today the most serious involves the “mixing up” of diseases and pests from one part of the world to another.

Trees before Humans

Trees are wildlife. They have existed for very much longer than people. Over 360 million years ago they evolved their own diverse agendas in life before they ever knew human contact. There are now tens of thousands of species of trees, each doing its own thing. All trees form partnerships with fungi, and many with ants and pollinating insects and birds. Different species grow from the tropics to the fringes of the arctic. Some grow in forests, some in savannas (grassland with scattered trees). Some are eaten by animals, some are distasteful or poisonous; animals evolved in turn to depend on trees in a multitude of ways, from the super-elephants that could break down and devour a big tree to the primates (forerunners of humanity) and birds that live on tree fruits and seeds. Some trees will burn and sustain forest

fires (many trees depend on fire for their continued existence or propagation); others are incombustible. Some grow from seed, others from root sprouts.

In the last two million years, climatic changes of the ice ages, which rendered much of the world’s land area incapable of growing trees, disrupted this story of gradual change and adaptation. Trees found themselves having to make do with environments into which accidents of history thrust them.

Trees before Farmers

Next appear the hominids (other species of mankind) followed by the human species itself. In Africa, their land of origin, people probably dwelt in savannas, but over tens of thousands of years they came to inhabit both forests and the treeless landscapes of cold or dry climates. Humanity at this stage—small numbers of hunter-gatherers—would have interacted with trees in four ways:

1. Tree fruits and other products presumably formed part of the human diet; thus Mesolithic people took advantage of the nuts in the vast extent of hazel woodland in Britain.
2. People developed tools for felling small trees, which provided firewood and the material for wooden artifacts. (The name Stone Age is misleading because the stone tools that have survived were probably far less numerous than the wooden objects that have not been preserved.) As yet, the quantities involved would have been insignificant in comparison with the growth-rate of trees.
3. Wherever savanna or forest happened to be flammable, people used fire in land management,

manipulating the vegetation in favor of those animals and plants that they preferred.

4. Early humanity was probably responsible for exterminating the super-elephants and other living bulldozers, which survive in an attenuated form in Africa. In turn this would favor the growth of trees.

Arguably, the last two examples represent the greatest effects that the human species has had (until now) on the world's vegetation. Whether Paleolithic and Mesolithic people interacted with trees in cultural and spiritual ways, and whether this made any difference to the trees themselves, it is impossible to say.

Trees before Metals

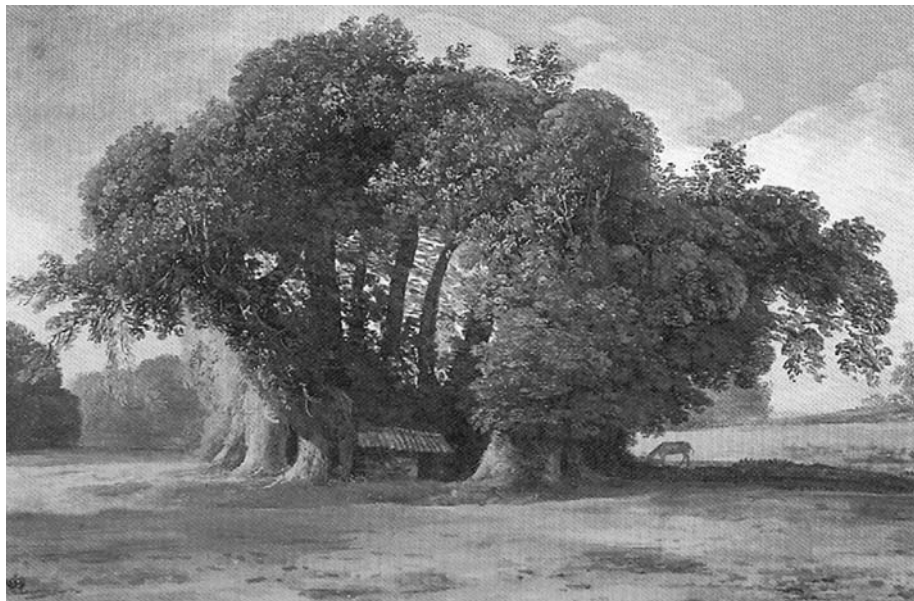
Further interactions came within the last 10,000 years. After the last ice age, trees returned to northern countries like Britain; traditionally they are thought to have generated a continuous "primeval forest," which in practice may have been more savanna-like, with areas of grassland. Then people acquired the Neolithic arts of farming, keeping livestock and growing crops, building permanent houses, and indulging

in pottery, temples, graveyards, and all the trappings of settled civilization. These were invented separately in various parts of the world and spread slowly almost throughout the globe, except in Australia.

In temperate climates trees are the farmer's enemy, because arable crops will not grow in shade. Common domestic animals require open grassland. They live in forests only in small numbers: they eat the low vegetation and when that is gone they starve. Hence farming began in savanna or grassland, since cultivation of forested lands required a great investment of effort in digging up trees and making fields. This is documented with European settlement in America; presumably it happened also in northern Europe in Neolithic times, but without the metal tools and labor-saving devices available to settlers in historic times.

In the tropics, matters would have been somewhat different because some tropical crops grow in shade and some of the trees themselves have edible fruit. So forests were not necessarily destroyed but sometimes converted to orchards and cultural savanna.

At this stage if not earlier, people made the momentous discovery that some trees sprout from the stump or roots when cut down, and the resulting



Jean-Pierre Houël, *Castagno dei cento cavalli* [The Chestnut Tree of One Hundred Horses] (1782). Gouache. Located 8 kilometers from Mt. Etna's crater, this is the oldest known chestnut tree in the world. According to legend it sheltered a queen of Aragon and her company of a hundred knights when caught in a thunderstorm during a trip to the mountain.

If you reveal your secrets to the wind, you should not blame the wind for revealing them to the trees. • **Kahlil Gibran (1883–1931)**

poles are more useful than the original tree-trunk. Thus woodland management originated, of which the first certain evidence comes from the Neolithic of the Somerset Levels in England, some five thousand years ago. People could (with difficulty) fell forest giants, but big trees of most species have only one use before the invention of power tools—making dugout boats. The human population, although increased from hunter-gatherer times, was still too few to have more than a local effect merely by cutting down trees.

Thus began the characteristic ways in which settled people influence forests:

1. Digging up trees in order to use the land for farming.
2. Cutting down trees in order to use the timber or wood, either for carpentry or as firewood (including fuel for making pottery).
3. Managing the remaining woodland in order to produce a permanent supply of trees small enough for one or two men to handle.
4. Exterminating or reducing many of the wild herbivorous animals.
5. Replacing wild beasts with domestic livestock, often in large enough numbers to hold back the regrowth of felled trees.
6. Moving tree species around the world, for example the cultivated apple, brought to Britain by the Romans from its native Kazakhstan.

From small beginnings in the Neolithic these spread around the globe. It has been claimed that even in prehistory the reduction in forests was sufficient to have a significant effect on the carbon dioxide content of the atmosphere. However, the land area involved seems too small to account for the known carbon dioxide anomaly—unless, perchance, the equation needs to include the efforts of Australian Aborigines and American indigenous populations in preventing forests from overrunning the vast areas of savanna in those continents.

A less familiar use of trees is pollarding or shredding, that is, cropping the branches to provide leaves on which to feed livestock. This began in the Neolithic,

as cattle and sheep were introduced into forested regions that lacked grassland. It still continues in parts of the world where the growing season for grass is brief. Trees so treated are often very long-lived and grow into characteristic shapes.

Trees before Intercontinental Travel

In later prehistory uses of trees multiplied, especially in those cultures that invented metals. Bronze and iron made it easier to cut down trees and also greatly increased the need for fuel to smelt and work metals. The Romans had an abundance of fuel-using activities—baths, brickmaking, glassmaking, as well as domestic heating and making throwaway pots. Increasing population as well as developing technology multiplied the demands on the woods. Only locally, however, was mere human labor yet sufficient to cut down trees faster than they could grow again. It was possible to transport and work great trees for exceptional purposes, such as the roof timbers of Solomon's Temple in Jerusalem, but this was a rare achievement: in most cultures trees small enough to handle were the stuff of everyday uses.

By late prehistory humanity had come to affect virtually all the world's mainland forests and savannas, at least by interfering with the relation between trees and herbivorous animals and (where applicable) by altering the frequency of fire. Islands such as those of the Mediterranean, which already had native mammals, were probably not much affected by human settlement; but particularly devastating was the later effect of introducing goats and pigs to oceanic islands like St. Helena, where the vegetation was not adapted to any sort of land animal. The last large areas without human contact were Madagascar and New Zealand, reached by humanity around 2,000 and 800 years ago. The world's very last "virgin forests," unaffected by humanity, were probably on some remote island in the eighteenth century.

Agriculture gradually spread from its homeland in the sparsely tree'd regions of southwestern Asia into the much more wooded and less congenial regions of Europe. Even now, little is known of how, still less



why, forests were converted into farmland. Although arable farming in Italy was well developed from the Neolithic onward, even in imperial Roman times the great city of Rome transported most of its food supply from North Africa, leaving Italy to supply most of its timber and fuel.

England followed an apparently unusual pattern with its high density of population. By the Iron Age (the last few centuries BCE) most of the wildwood had given way to farmland or moorland, and the pattern of the modern countryside was already developing. Domesday Book, a survey of 13,418 English settlements commissioned by William the Conqueror in 1085), gives uniquely detailed statistics of a landscape in which only 15 percent of the area was woodland, less than France has now. This was reduced still further, to only about 6 percent by 1349, when the Black Death put an end to increasing population.

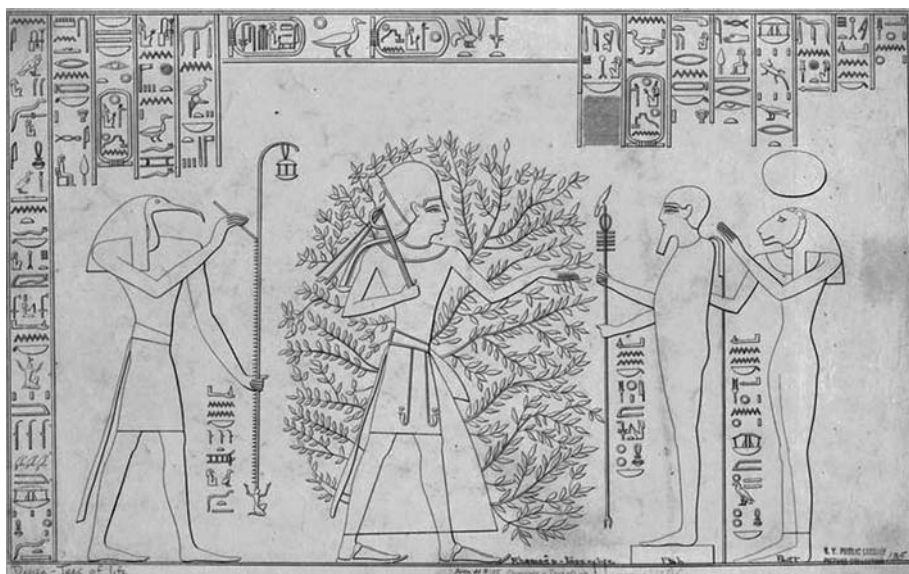
Woodland conservation probably originated from the need to maintain a continuous supply of smallish trees, but gained a further impetus as woods acquired scarcity value (i.e., the less of a commodity in existence, the more it is worth). In England many woods mentioned in medieval documents are still there today; they are recognizable by their distinctive names and shapes, by banks and ditches protecting

the boundaries, the massive bases of coppice stools (trees that have been felled and have grown again and again), and special plants that do not spread into recent woodland.

Trees also grew in hedges and other non-woodland situations to supply timber and underwood. Orchard culture developed from Roman times onward in Europe and independently in other continents.

International trade in timber—both precious timbers like Cretan cypress and ordinary timber—became significant in the Middle Ages. England, the Netherlands, and Spain drew increasing quantities of pine and oak from the Baltic: not merely because they had insufficient woodland of their own, but because the exporting countries had developed equipment and skills for processing trees.

Destruction of forests to create farmland and pasture was not a one-way process. Trees grow very easily provided they are left alone. Whenever land was abandoned through pestilence or slave-trading or because people discovered an easier way to make a living, woods returned or savanna turned into forest. Thus in England many of the great wooded areas of the Middle Ages contain remains of farms, settlements, and monuments of prehistory or Roman times.



Ramses and the Tree of Life, a nineteenth-century illustration, depicts an Egyptian mural painted circa 1330 BCE. New York Public Library.

Cultural and Spiritual Qualities of Trees

Ethnographers have described a vast diversity of relations between people and trees other than the physically utilitarian, ranging from the overtly spiritual (a tree as the home of a god) to the purely aesthetic (a tree providing a “splash of color” in a formal garden).

Veneration and love of trees are characteristic of a very wide range of separate human cultures, but largely lack a time-dimension unless there are written records. The exact part played by the trees is often ill defined, since travelers who were half-informed about (or hostile to) another culture were often the ones to record information about it. Whether trees played any part in the ancient designs of Stonehenge or Angkor Wat is difficult to say unless remains of the trees themselves survive. Archaeologists are seldom perceptive in detecting and recording surviving trees among the ruins of ancient sites.

Individual trees have been widely venerated as the home of minor gods, as with the sacred trees in the ancient city of Rome, or the innumerable sacred trees (of many species) in the Shinto religion of ancient and modern Japan. Conversely, all the trees of a particular species, or big trees in general, may be venerated. Many religions have sacred groves surrounding temples and shrines, or in which rites and ceremonies are enacted. Particular species may play a part in celebrations, like laurel in the triumphs of ancient Rome, holly at Christmas, and palms (or some northern substitute for palms) on the Christian Palm Sunday.

Monotheistic religions celebrate specific sacred trees, at least unofficially. Jews, Muslims, and Christians venerated “Abraham’s Oak,” at Hebron in Palestine. England has its ancient churchyard yews, some dating from the early centuries of Christianity. In Wales, ancient yews are associated with the saintly hermits of the first millennium CE.

Trees in parks and gardens—other than fruit trees—are a feature of many cultures. The sacred groves of the ancient Greeks, like those of Buddhist temples and Shinto shrines in modern Japan, could range from natural woodland to formal gardens. The

ancient Romans set up secular parks and planted trees in them, preserving as well the existing trees. How far this applies to other monumental cultures that have no written records is difficult to say.

Urban trees vary enormously. Most towns and cities of the Middle Ages were small and closely packed, seldom with room for many trees, apart from trees on sacred sites embedded in the city or on flood plains. With more diffuse fashions in town planning from the eighteenth century onward, urban trees became a normal feature, to the point that many European and American cities now have more trees than the surrounding countryside.

Appreciation of ancient and distinctive individual trees is widespread in human cultures, but is not universal. In England, ancient trees were preserved as giving an air of respectable antiquity to a new country-house park: this veneration ebbed in the mid-twentieth century but has since revived with renewed interest in “veteran trees.” Notable ancient trees occur in the Mediterranean, especially olives and chestnuts. In Japan, ancient trees are venerated as memorials to past emperors, are preserved even when dead, and are imitated in miniature in the craft of bonsai. Most ancient trees are monuments to cultural activities such as pollarding or orchard culture.

Trees also have medicinal and magical uses in many cultures, although not to a greater extent than other plants. Well-known examples are quinine bark as a treatment for malaria, or the British naturalist Gilbert White’s account of the “shrew-ash,” a tree used for treating the ailment of cattle supposedly caused by shrews running over them.

Trees in the Age of Machinery

The seventeenth to twentieth centuries saw further technological development. Many inventions had begun in a small way in the Middle Ages, but now were employed on a much larger scale and taken to woods in distant parts of the globe.

Discovery and colonization let loose European-style agriculture on other continents. Destruction of forest and savanna to make farmland, which in



Europe had taken thousands of years, was compressed into decades in America and Australia. Even well into the twentieth century much of this was still done by multitudes of axe men and oxen, followed by special “stump-jump” machinery for cultivation.

Woods increased in other countries, especially where the ground was too infertile or too steep for mechanized farming. In eastern North America in the nineteenth century and in the Mediterranean in the twentieth, huge areas have reverted to forest.

Shipbuilding had previously had a local influence on woodland. But as ships got bigger and more numerous, went to distant continents and spent long periods rotting in tropical waters, and as European navies indulged in arms races, timber shipbuilding increased until for a short period (1800–1860) it was a major influence on European woodland and even affected tropical forests.

In the nineteenth century international trade turned intercontinental as North American pines and tropical hardwoods were widely used in Europe. People developed technologies for felling and converting big trees. Sawmills, another medieval invention, became more widespread and bigger until (with the help of railways) a use was at last found for rain-forest giants. In what was presented as a triumph of technology, the giant trees of the Pacific coast of the United States, of southwestern Australia, and of the more accessible parts of the tropics were converted into railway sleepers, fence posts, and paving blocks.

Forestry plantations—or areas of trees for timber—were invented in medieval Germany and independently in Japan. From then on it became possible (in theory) to grow trees for specific uses—assuming that those uses would still exist by the time the trees had grown. There have been several attempts at planting trees on a huge scale in dry countries, in the belief that this would restrict the spread of deserts. In the nineteenth century plantations became the staple of modern forestry; German or French forestry ideals and practices were imposed on countries like India and later Britain, marginalizing local practices and skills. By the late twentieth century native forests were being destroyed and replaced by plantations,

in countries like Chile and Tasmania, on a scale that gives rise to great concern among conservationists. There is a risk that natural forests will become confined to steep slopes, nature reserves, and other areas beyond the reach of machinery.

Ancient management practices were neglected. In England competition from the increasing use of coal, transported by railways to rural areas, led to woods being abandoned as sources of fuel. Japan, like England, took to plundering other countries’ wildwood for timber supplies while neglecting its own woods.

Forests and savannas are threatened by the effects of humanity on mixing up all the world’s animals and plants. A famous example is the frivolous introduction of the grey squirrel from North America to Britain, where it has multiplied to an extent which threatens the very existence of some indigenous trees; it has also reduced the native red squirrel to near-extinction.

This applies to plants also. Why is it so easy to destroy tropical rainforest? Felling the marketable trees might not matter much: the redwood forests of Pacific America have grown again (although they have probably not recovered all the plant and animal life of the original forest). When trees are felled now, however, the site is often taken over by one of the giant “elephant-grasses” from another part of the tropics; these interfere directly with the regrowth of the trees, and also are very flammable, introducing fire to forests that previously did not have it and are not adapted to it.

Climate change has some effect. Tropical forest trees are growing faster than before, possibly in response to increased carbon dioxide in the air. Trees confined to mountaintops, as with some tropical cloud-forests and the “sky islands” of the southwestern United States, are threatened because they have nowhere to go in the face of warming climate. But the most significant effect of global warming is probably where trees have been introduced into places where they do not withstand increasingly hot summers, as with some beech and spruce plantations in England.

In the late twentieth century big game increased in many parts of the world to the point where plant and bird life, and even the existence of woods is

threatened. England now has more deer than for over a thousand years, and more species of deer than ever before: deer eating woodland have become the top conservation problem. The same happens in much of North America, partly because hunters demand artificially huge numbers of deer to shoot, and even in Japan.

Probably the greatest threat to the world's trees and woods is the effect of twentieth-century humanity in mixing up all the world's pests and diseases. In the state of Ohio, in less than a hundred years, chestnut, most elms, many oaks, flowering dogwood, and fir have been removed, each by its accidentally introduced European or Asian fungus parasite. This leaves ash as the commonest remaining tree; the United States has spent millions of dollars in a vain attempt to keep out an Asian insect that destroys it. Such a story can be repeated in many other countries. At this rate, how much will be left in another hundred years?

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See also Agricultural Societies; Biological Exchanges; Deforestation; Diseases—Plant; Nature; Timber

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Tropical Gardening

Tropical gardeners of Southeast Asia domesticated a great many plants as early as 8500 BCE—such as rice, cane sugar, citrus fruit, bananas, coconuts, and yams—some of which still play a significant part in feeding humankind in far-flung parts of the Earth. Tropical gardeners survive today, like hunters and gatherers, only in a few refuges where they have not been invaded and conquered.

Tropical gardening of the kind that is still practiced in the interior of New Guinea is probably very old. When outsiders discovered New Guinea gardens (and a society of gardeners) in the 1930s, each agricultural village was independent, and each family lived on food their members raised on small plots of land. Population was dense enough to occupy almost all suitable soils, and warfare between rival communities was common. Crops were various: mainly roots that could be reproduced by replanting the top of a growing plant whenever it was pulled from the ground to provide the next meal. As long as part of the root was still attached, the top could then regrow a new root and in a few months provide the gardeners with yet another meal. New Guinea gardeners also grow many other kinds of plants to supplement starchy roots like yams and taro, both of which were poisonous when fresh and had to be boiled in water to dissolve the acrid chemicals that protected them from insects—but not from humans.

A few tropical gardeners also survive in remote mountainous areas of the southeastern Asian mainland, and once existed throughout south China as well, where rice was one among the many different crops they harvested as early as 8500 BCE. But the

gardeners of southern China proved incapable of resisting encroachment from the north by Chinese armies and settlers who learned how to raise rice and made it the staple food of historic China by about 500 BCE, even though millet and wheat, upon which Chinese society had depended earlier, continues to prevail in the northwestern-most Chinese provinces.

From what we now know about tropical gardeners in contemporary New Guinea and in ancient China it is reasonable to suppose that this kind of gardening originated along the coasts of the monsoon seas soon after humans first learned to fish on rafts and in boats and then made permanent settlements along the shoreline where safe harbor could be found. Hunters and gatherers undoubtedly knew a lot about plants from the very beginning of human history, and women left behind by early fishermen had every inducement to transplant useful plants to the places where they had settled down, thus becoming the first gardeners. Fruit and nuts from trees (coconuts, citrus, bananas, plantains, and sugar cane), as well as roots (and grasses like rice)—all probably came under human management in these gardens. Since we know that humans crossed at least 96.5 kilometers (60 miles) of open water to reach Australia sometime between 60,000 and 40,000 years ago, fisherman on rafts and/or boats, complete with paddles and sails, would have also traveled on the adjacent monsoon seas that long ago. Those seas were especially hospitable to early sailors, since the monsoon winds blow equably in opposite directions for part of each year and make even lengthy coastal voyages comparatively safe.

But direct evidence is lacking for what probably was by far the oldest form of agriculture, and there is scant hope that archaeologists will ever be able to

find traces of boats, tropical gardens, or any other elements of early coastal settlements because, beginning about 16,000 years ago, Ice Age glaciers began to melt, whereupon sea levels rose and submerged the coastlines of the Earth. Whatever slight traces coastal tropical gardeners in Southeast Asia may have left are therefore now deep under water. To be sure, inland lakes and streams might have attracted similar settlements, but so far archaeologists have found only very slender traces of tropical gardening far away in south China where fishing and sea going played no part.

Wherever such communities existed, they were always vulnerable to civilized encroachment. When each family raised its own food and did not have to store large quantities of harvested grain, everyone lived more or less like everyone else. In such communities priests could not persuade ordinary people to give part of their harvest to the gods in order to assure divine protection from disaster, and specialized fighting men could not demand a share for themselves in return for protection against raiders from afar. But grain farmers were liable to both these forms of blackmail, and thereby inaugurated what we call civilization, with an array of specialized traders, artisans, soldiers, and priests—and before long tax collectors, standing armies, and hereditary rulers. Such complex societies easily overwhelmed independent and equal villagers whenever they encountered them. So tropical gardeners survive today, like hunters and gatherers, only in a few refuges where civilized peoples have not chosen to invade and conquer them.

Yet in their time tropical gardeners of Southeast Asia domesticated a great many plants, some of which still play a significant part in feeding civilized

humankind in far-flung parts of the Earth—rice first and foremost, but cane sugar, citrus fruit, bananas, and coconuts, as well yams and other roots. Such domestication constitutes tropical gardening's ongoing contribution to humankind as a whole.

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See also Agricultural Societies; Domestication, Plant and Animal

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Túpac Amaru

(c. 1742–1781)

PERUVIAN REVOLUTIONARY

Although the massive rebellion he led in 1780 against Spanish colonial authority was ultimately suppressed, the Peruvian revolutionary Túpac Amaru, a descendant of the ruler in power during the conquest of the Inca capital at Cuzco in 1533, has become an iconic figure in the struggle for indigenous rights in Peru.

In 1780 Túpac Amaru (José Gabriel Condorcanqui), an indigenous ethnic lord or *kuraka* in the region near Cuzco in the Peruvian highlands, led the largest and most serious rebellion in South America against Spanish colonial authority in the period between the sixteenth-century wars of encounter and conquest and the early nineteenth-century movements toward independence. Centered in a rural region near the old Inca capital of Cuzco, especially in the provinces of Canas y Canchis (Tinta) and Quispicanchis, where Túpac Amaru and much of his family lived, this rebellion quickly engulfed the southern highland region of the Viceroyalty of Peru from Cuzco to Lake Titicaca and beyond. Other uprisings in what is now Bolivia (at that time the Viceroyalty of Río de la Plata) have become associated historically with the Túpac Amaru rebellion even though at least one of them began before the Cuzco movement. In the region between Sucre and Potosí, several members of the Katari family led local villagers in a movement that challenged the colonial order at both the village and governmental level. To the north, near La Paz, Julián Apasa, who looked to the leaders of the other two rebellions to form his *nom de guerre*—Túpac Katari—fought on his own and with the forces of the Túpac Amaru rebellion to break Spanish control in that region.

Túpac Amaru's father died when he was young, and his uncles and the local priest raised him. He also studied at the Jesuit school for indigenous nobility in Cuzco. He ran a business of transporting goods throughout the southern Andes and he also had interests in mines. He got along well with most priests and with the bishop of Cuzco. His relationship with local Spanish officials was much more stormy, but it too varied from individual to individual. Túpac Amaru—actually Túpac Amaru II—was descended from Manco Inca, the Inca ruler who rose in rebellion against the Spaniards shortly after their taking of Cuzco in the 1530s and who established a neo-Inca state in Vilcabamba. Also among his ancestors was Túpac Amaru I, Manco's son and the last leader of the Vilcabamba resistance.

Túpac Amaru II pressed the Spanish courts to be recognized as heir to the Inca throne. Two factors worked to feed belief in the return of the Inca to power: the works of Garcilaso de la Vega glorified the rule of the Inca, and the myth of Inkarrí spread. According to the Inkarrí myth, the body of the Inca ruler was regenerating from his buried head (the first Túpac Amaru had been beheaded by the Spanish after surrendering), and when the process was complete he would reemerge to reestablish the more just rule and social order that had existed before the arrival of the Europeans.

Colonial Oppression

At the time Túpac Amaru was voicing his claims, Andean indigenous society was suffering from the changes the Spanish crown was making in the colonial structure. In the eighteenth century, Spain, like

If no man could become rich in Peru, no man could become poor. • William Prescott (1726–1795)

other European powers, tightened its control over its colonial possessions. In the Spanish realm this meant, among other changes, making a determined effort to restructure the colonies so they would be more lucrative for the mother country. In the Andes there was an effort to increase the efficiency in collecting tribute and sales taxes were not only increased but also imposed on some items produced by indigenous people that had previously been exempt. In addition, some items that previously had not been taxed became subject to increasing taxation and customs houses were established to ensure collection of these duties. This disrupted trading and exchange in the southern highlands, as did the creation of the Viceroyalty of Río de la Plata, which took over control of much of the region that later rebelled.

At the same time, local Spanish authorities known as *corregidores* pressed the indigenous population ever harder after the informal forced sale of goods was legalized. *Corregidores* often abused their colonial right to force the sale of goods by doubling or even tripling the established quotas. This practice aroused the ire of many indigenous people, some of whom began to balk at such excessive economic coercion.

Parallel to these changes, the indigenous population was finally starting to grow after the terrible decline caused largely by the epidemics of Old World diseases that devastated the New World well into the eighteenth century in the Andes. Thus, just as the colonial government was increasing its demands, the indigenous peoples were seeing their per capita resource base shrink as villages once again were teeming with people. This conjunction of international, regional, and local circumstances increased tensions and created a climate in which a rebellion might gain hold.

Rebellion and Aftermath

The combination of messianic hopes, deep discontent over the current political situation, and the presence of a leader created a conjuncture in which rebellion erupted. Spreading like wildfire over the southern highlands of Peru and Bolivia, the rebellions of the

early 1780s shook colonial society to its foundations and led to some 100,000 deaths. Túpac Amaru was captured when the rebellion was just a few months old and he and much of his family were executed in a most brutal manner in the plaza of Cuzco while other family members were exiled. Despite the suppression of the rebellions they led, however, Túpac Amaru, Túpac Katari, and the Katari family had all given direction and voice to many of the exploited peoples of the Andes, who under increasing pressure risked everything to end their exploitation and establish a more just rule under a system that would be culturally meaningful to them. In the short run the rebellion put a fear into the dominant society that increased the distance between the races in Peru. Over the longer haul the image of Túpac Amaru as a harbinger or symbol of social justice has emerged. The left-leaning military government of Velasco used his image and rhetoric from the rebellion to promote social change in the late 1960s, the dream of Inkarrí lives on, and the Túpac Amaru revolutionary movement of recent times obviously chose him as their symbol because of what he means in the minds of many ordinary Peruvians today.

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See also Andean States; Spanish Empire

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Turkic Empire

The Tüürks created a vast empire in Eurasia that dominated the nomadic steppe zone and adjoining lands of sedentary civilization, from Manchuria to the Black Sea, during the mid-sixth to mid-eighth centuries. It was the first of the great, trans-Eurasian empires and was surpassed in size only by the Mongol Empire of the thirteenth century, which in many respects was built on Türk traditions of governance.

The name “Türk” was a political designation adopted by other Turkic-speaking peoples during the period of the Türk Empire from the mid-sixth to the mid-eighth centuries. The Tüürks’ neighbors (who were the geographers and historians of the Muslim world) used it to denote the Turkic-speaking peoples with whom they came into contact from the latter half of the seventh century onward. Most of these peoples had been part of the Türk state. The term “Türk” survives today as the ethnonym of the dominant ethnic grouping of the modern Turkish state and has been used as an ethnic designation for other Turkic peoples.

Origins

Türk origins remain obscure. Their language, first recorded in a series of inscriptions in the Orkhon river region, the center of their state in present-day Mongolia, belongs to the Altaic language family, which consists of Turkic, Mongolic, Manchu-Tungus, and possibly Korean and Japanese. There has been much debate over whether these language groupings are related genetically or have converged due to long periods of contact and borrowing. There can be little doubt that the Tüürks emerged from Mongolia and southern

Siberia, the westernmost region of the Altaic peoples, who were largely in Manchuria. The Tüürks’ immediate neighbors to the west and northwest were Iranians (in western Mongolia) and the Uralic peoples of Siberia.

The Tüürks, under this name, emerged onto the stage of history only in the mid-sixth century. Various Turkic-speaking peoples had earlier been part of the Xiongnu (Asian Hun) Empire (c. 209 BCE–mid-second century CE), of still undetermined ethnic origins. Some Turkic groupings migrated or were pushed westward to the steppes of present-day Kazakhstan and the Volga–Black Sea region as a result of warfare between the Xiongnu and the Chinese. The migrants were incorporated into the polity of the European Huns, whose relationship with the Xiongnu remains the subject of much debate. These early migrations initiated a movement by Turkic peoples from the Chinese borderlands to the western steppes that continued for more than a millennium. Later empires in Mongolia, such as the Rouran (Asian Avars, early fourth century CE–552 CE), drove other Turkic groupings westward into the Black Sea steppes by around 463. None of these peoples called themselves Tüürks.

The Orkhon inscriptions tell us nothing of Türk origins. Contemporary Chinese accounts, which state that they derived from “mixed Xiongnu,” record a variety of ethnogenic tales reflecting, in all likelihood, the diverse origins of the core peoples that constituted the tribal union the Chinese called “Tujue.” The name *Türk* does not appear until the Chinese accounts relate the foundation of their state in the mid-sixth century. The Chinese sources also note their ruling clan (or tribe) as the Ashina and place some of the latter’s early (fifth-century) history in the Gansu-Xinjiang region of northwestern China, areas that were then

populated by Tokharian and Iranian peoples. The name “Ashina” appears to derive from an Iranian or Tokharian term and is noted in an inscription written in Sogdian (the principal language of the Silk Roads) dating to 582, the earliest inscription known thus far from the Türk Empire. Here, the Ashinas are paired with the Türks, perhaps indicating that they were still two distinct entities at this time. The Orkhon inscriptions subsequently make note of the *Kök Türk* (in Turkic, *kök* means “sky, sky-blue”) which may refer to this earlier distinction. The color blue was associated with the direction east in Inner and East Asia. Hence, *Kök Türk* may also mean “Eastern Türks” or even “Heavenly Türks” (as it has sometimes been rendered). None of the names of the early Türk *qaghans* is of Turkic origin (*qaghan* is the Inner Asian title for “emperor” first noted in the third century CE).

Formation of the Türk Empire

The Türks came to prominence as the older states around them were crumbling. The Tuoba Wei dynasty (386–534 CE), a semi-Sinicized dynasty of Altaic origins that had controlled much of northern China, had divided into two warring rival states: the Eastern Wei (534–550), which was replaced by the Qi (550–557), and the Western Wei (535–557), which was replaced by the Northern Zhou (557–581). In Mongolia, the Rouran (or Avars) were increasingly caught up in internal dynastic strife and periodic revolts of vassal peoples. Among the latter were the Türk-Ashina, peoples who engaged in metalworking for their Rouran overlords. The Rouran *qaghan* Anagui (520–552) made an alliance with the Eastern Wei. The Western Wei retaliated in 545 by opening communications to Bumīn, the Türk-Ashina leader. When Bumīn was refused a Rouran royal bride as reward for his role in suppressing a revolt of the eastern Tiele (a large union of Turkic and Mongolic tribes that extended from northern Mongolia to the Pontic steppes in present-day Ukraine) in 551, the Western Wei sent off a princess to him, thereby cementing their ties. Bumīn destroyed the Rouran in 552 and took over their empire. A program of conquest immediately followed.

While Bumīn (who died shortly after this) and his sons Golo (d. 553) and Muqan (or Mughan; reigned 553–572) consolidated their control in Mongolia, his brother Ishtemi (reigned 552–c. 576) extended Türk power to the western steppes and the Crimea, laying the foundations of the western Türk Empire. Following old steppe principles of governance, the Türk Empire was divided in two for administrative purposes. The supreme *qaghan* resided in the East; his counterpart in the West had slightly less power. Their subjects now included the Sogdians who were the principal merchants of the Silk Roads, various other Iranian sedentary and nomadic peoples of Central Asia, and a number of Turkic tribes that had earlier migrated westward.

Allied with the Sasanid Empire of Iran, Ishtemi crushed the Hephthalite state (in modern Afghanistan), which derived from a mix of Asian Avar and Hunnic elements, around 557. At about this same time, a people calling themselves Avars, who had fled the Türk conquest, made their appearance in the Pontic steppes and opened diplomatic relations with Byzantium. The Türks under Ishtemi soon appeared, and the Avars, accompanied by some subject tribes, retreated to Pannonia (modern Hungary). Türk power now extended from Manchuria to the Crimea. The Avars remained safely ensconced in Pannonia until their state was destroyed by the Franks of Charlemagne at the end of the eighth century. They frequently raided Byzantine holdings in the Balkans, often in conjunction with the Slavs, substantial groupings of which began to settle in the region, giving rise to the Southern Slavic peoples of today.

The Türks, having conflicting trade and political goals with Iran, broke with the Sasanids and established relations with Constantinople in 568. Byzantium, having recently established its own silk industry and no longer as dependent on the Silk Roads and Iran for this luxury good, was nonetheless anxious to have allies against Iran. The Türks were seeking an outlet for the silk that they were getting from China. The resulting Byzantine-Türk alliance did not work smoothly, the Türks often berating Constantinople for having dealings with their “runaway slaves,” the Avars.

The First Qaghanate: East (552–630 CE) and West (557–659 CE)

The Türks were able to exploit the political fragmentation of northern China, whose competing dynasties were only too willing to buy the Türks off with silk and trading privileges. The zenith of Türk power was reached during the reign of Taspar (or Tatpar, reigned 572–581), Muqan's younger brother. Thereafter, China, reunited under the Sui dynasty (581–618), regained the military upper hand. This coincided with increasing strife among the ruling Ashina. The Sui skillfully exploited these internecine disputes and encouraged revolts by subject peoples of the Türks. In the west, Tardu (d. c. 603), Ishtemi's son, trying to exploit the rivalries of his eastern cousins, made a bid for supreme power. Although his army was badly defeated around Herat by the Sasanid general Bahrâm Chôbîn of Iran in 589, Tardu recovered and by the late 590s was on the verge of realizing his ambitions. The Sui, however, instigated a massive revolt of the subject tribes, in particular the Tiele union, and Tardu disappeared from view. When the Sui overextended themselves with military ventures against Koguryo (in Korea), the Türks briefly revived. The Sui were swept from power by the Tang dynasty (618–907), themselves of probable Altaic origin and long familiar with the northern frontier zone. The Tang, like the Sui, capitalized on Ashina internal bickering and in 630 brought the eastern Türks, exhausted also by natural disasters, under their control. They were settled within China's borders and the Ashina and clan nobles were taken into the ranks of the Chinese military service.

Tardu's successors in the west fared better for a time. In the 620s the Byzantine Emperor Heraclius (reigned 610–641) used Türk forces under the western *quaghan*, Tong Yabghu Qaghan (618–630), to defeat the Sasanids in 628. Tong Yabghu, however, was assassinated by an uncle, and the western Türks divided into two rival factions, the Dulu and Nushibi, together termed the On Oq ("Ten Arrows"). They succumbed in 659 to Tang armies that ventured deep into Central Asia. The more westerly groupings of the Türks formed the Khazar state (c. 650–c. 965), which encompassed



This miniature painting with calligraphy depicts Turkic troops in battle and was once owned by Abdülaziz, Sultan of the Türks, 1830–1876. New York Public Library.

the Volga-Ukrainian steppes, the North Caucasus, and elements of the Eastern Slavs and Finno-Ugric peoples. The Khazars were the main obstacle to Arab advance beyond the North Caucasus.

The Second Qaghanate: East (682–742 CE) and West (c. 700–c. 766 CE)

Although the Tang preserved the eastern Türks, planning to use them as part of their border defense system against other nomads, the Türks proved to be recalcitrant subjects. The eastern Ashina Qutlugh (682–691), with a small band, rallied the Türks and reestablished the qaghanate in 682, taking the throne name Ilterish. He and his brother and successor, Qapaghan Qaghan (reigned 691–716), ably assisted by their chief counselor, the Chinese-educated Tonyuquq, reestablished their hold over the Inner

Asian nomadic and forest peoples. In the words of the Orkhon inscriptions, they “made the poor rich and the few many” (Tekin 1988, 12). This was achieved through continual warfare, memorialized in the Orkhon inscriptions, against their frequently rebellious subject tribes, a policy that his successor, Bilge Qaghan (reigned 716–734), aided by his brother Köl Tegin (d. 731), was forced to continue due to ongoing resistance to Türk rule. Bilge Qaghan was poisoned, most probably by someone within his entourage. Thereafter, the familiar pattern of dynastic bickering led to the destruction of the eastern Türk Qaghanate in 742 by a coalition of subject tribes who were overthrown in turn by the Uygurs, another Turkic-speaking Central Asian people.

Meanwhile, the western Türks (under eastern Türk domination by 699) faced a growing threat from the Arabs. What had begun as Muslim raids in the late seventh century became a more systematic program of conquest under Qutaybah ibn Muslim (d. 714), a general in the service of the Arab Umayyad dynasty (661–750). Moreover, China and Tibet (now a major player in Central Asian affairs) were active in the region. Internecine Arab strife allowed the western Türks to maneuver between China, Tibet, and the Arabs. The On Oq union, however, continued to face problems of political instability. The Turkic Qarluqs, a vassal subconfederation of the eastern Ashina, fled to the western Türk lands around 745. When the Arabs and the Chinese clashed on the Talas River (751, in Kazakhstan), the Qarluq defection to the Arabs proved decisive. But China’s Tang dynasty soon was caught up with domestic rebellions (the An Lushan Rebellion in 755) and the Arabs, who were seeking to consolidate their hold over Sogdia and Khwarazm, withdrew from the steppe. By 766 the Qarluqs had made themselves masters of the western Türk steppes.

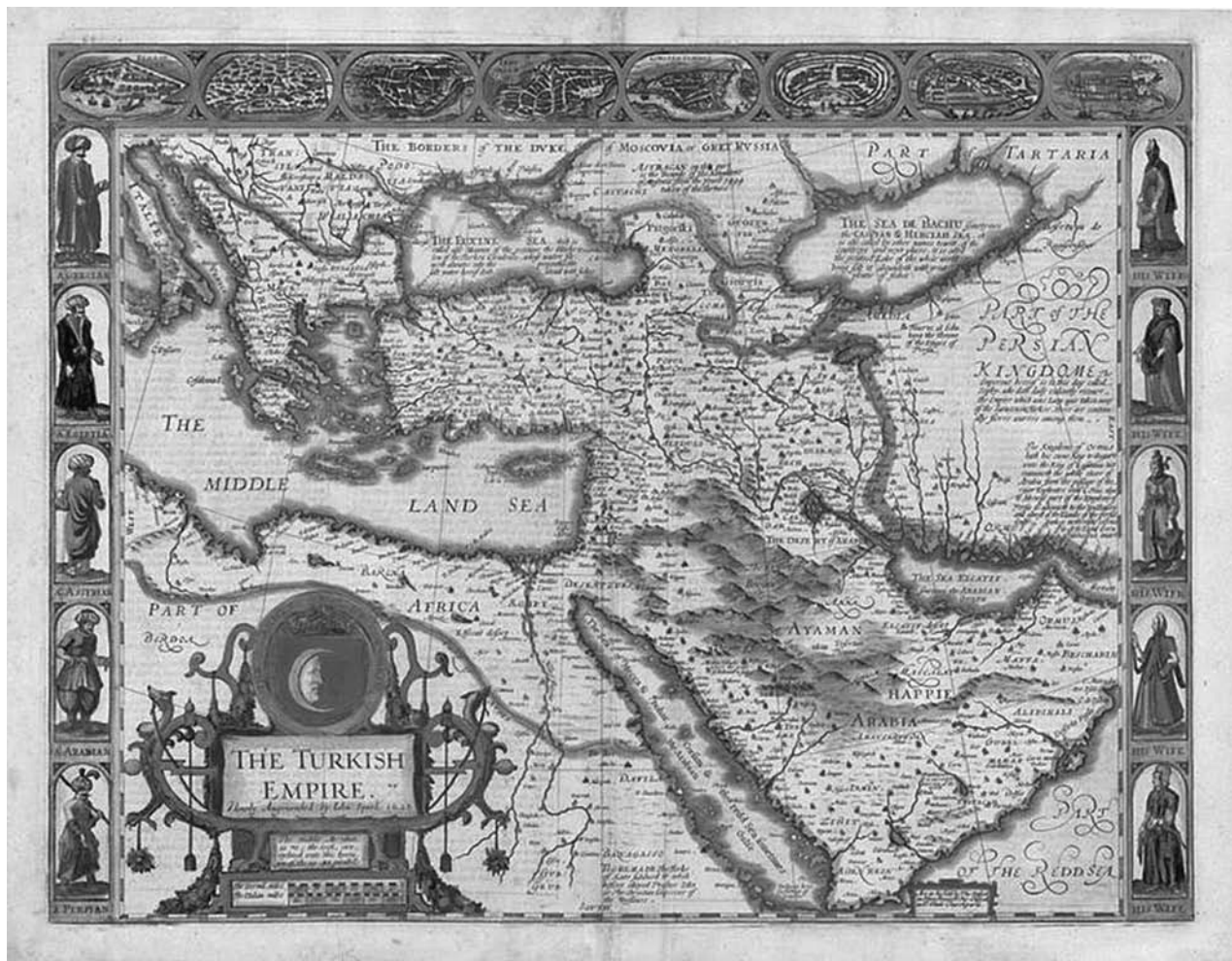
Governance, Religion, and Society in the Turkic Empire

The Turkic Empire followed the steppe imperial traditions first clearly articulated by the Xiongnu. The Rouran were probably the immediate source for many of the titles associated with high office. Most of these

titles were of foreign origin (Iranian, Tokharian, Indian, Chinese). Typical of the steppe tradition, the Türks adhered to the notion of the collective sovereignty of the ruling clan over the whole of the empire. Any member of the Ashina could claim rule. An attempt to work out an orderly system of lateral succession (from brother to brother and thence to their sons) proved unworkable. Conflict often preceded, accompanied, and followed the elevation of a new *qaghan*. Qaghanal investiture involved elaborate rites, including the ritual strangulation with a silk cord of the new *qaghan*, who in a shaman-like trance, then stated the length of his reign. The *qaghan* was often described as heaven-like or God-like, indicating an ideology that stressed his sacral as well as temporal power. Upon his death, the *qaghan* “returned to the gods” (Moriyasu and Ochir 1999, 124). Nonetheless, the failure to work out an orderly and conflict-free system of succession proved fatal to the empire.

The Türks worshipped Tengri, a supreme celestial deity also worshipped by the Mongols, and they were also practitioners of shamanism. There are scattered references to Umay, a goddess of fertility, as well as to holy mountains, forests, and other refuges. Earth, water, and fire were also worshipped, and ancestor worship was practiced. Some of the early *qaghans* were also attracted to Buddhism. This and other religions came to the Türks through the Sogdians, who also brought them writing systems based on the Aramaic-Syriac alphabets. One or more of these alphabets were probably the source of the runic scripts that spread across Turkic Eurasia. The Orkhon inscriptions, carved by Chinese artisans, were written in one of the variants of this runic script.

The Türks brought under their rule a wide range of Turkic and other Altaic peoples, Iranians, and Uralic and Paleo-Siberian peoples. The steppe peoples practiced pastoral nomadism, and the Türks continued to live in felt tents and consume a diet that was high in dairy products (including fermented mare’s milk) and meat. For other goods they relied on trade or raiding the neighboring sedentary states, especially China. They were vitally interested in trade, and with their Sogdian vassals they played a major role in the unification of the Silk Roads, one of the major arteries of East–West



Map of the Turkish Empire, by John Speed. 1626. This highly decorative map shows eight city views in a banner across the top and ten costumed figures on the left and right sides.

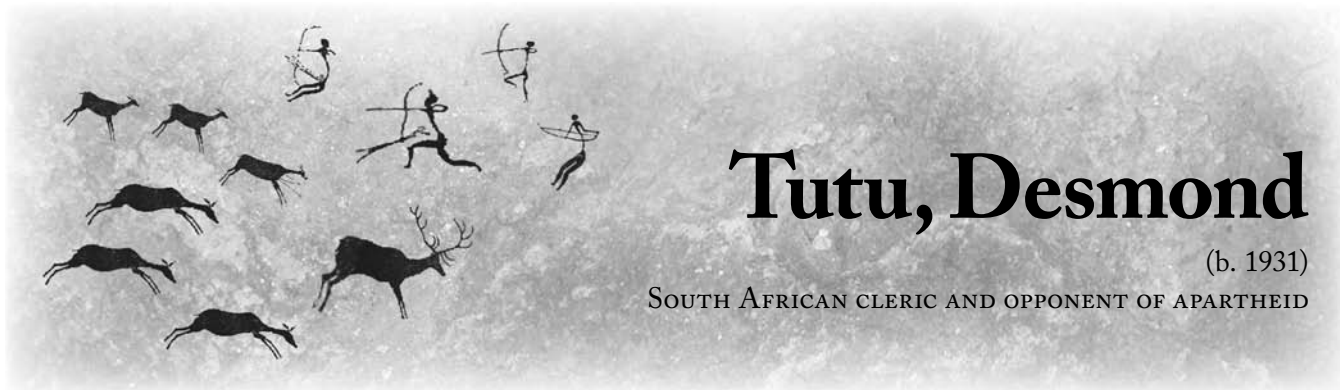
commerce in the medieval world. Their empire also set the pattern for subsequent steppe empires.

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See also Silk Roads; Steppe Confederations

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Tutu, Desmond

(b. 1931)

SOUTH AFRICAN CLERIC AND OPPONENT OF APARTHEID

Because he is one of the world's most passionate nonviolent activists against apartheid in South Africa, Desmond Mpilo Tutu's name is synonymous with the struggle against that racist movement. He has served the Anglican Church in a number of roles culminating in archbishop, and continues to make international appearances on behalf of racial equality.

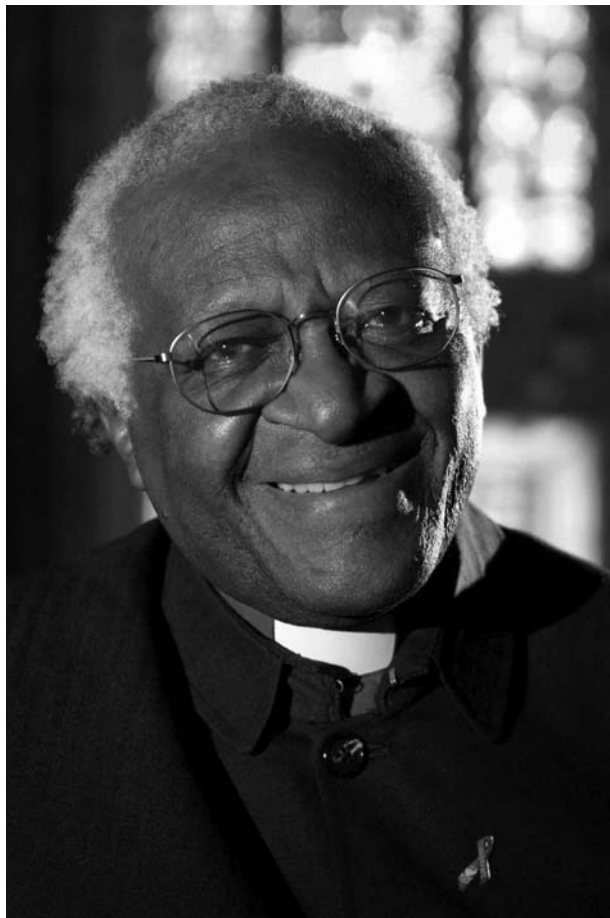
Desmond Mpilo Tutu, a leading opponent of South Africa's racist apartheid system, became chair of the South African Truth and Reconciliation Commission after the fall of the apartheid regime. He has received numerous honorary degrees and awards, including the 1984 Nobel Peace Prize. An Anglican priest, Tutu also served the church as a chaplain, curate, theologian, dean, bishop, and archbishop, and as general secretary of the South African Council of Churches.

Desmond Mpilo Tutu was born in Klerksdorp, Transvaal, South Africa. After receiving his high school diploma in 1950, he earned his teacher's diploma from Pretoria Bantu Normal College in 1953 and his BA from the University of South Africa in 1954. He then taught high school for four years, during which time he met and married his wife Leah, with whom he had three daughters and a son. As Tutu began his teaching career, everyday life for the majority black population in South Africa was drastically changing for the worse. In 1948 a white minority government implemented the comprehensive system of racial segregation, disenfranchisement, land alienation, and oppression known as apartheid. Under apartheid, white student education was well funded and of a high quality, while blacks were forced to

attend inferior schools, study restricted curriculums, and had limited access to higher education and job opportunities. Tutu quit teaching in 1958 to protest this unjust educational system.

An early influence in Tutu's life was the Anglican bishop Trevor Huddleston, an early and tireless opponent of apartheid who inspired Tutu to enter the ministry. Ordained an Anglican priest in 1961, Tutu then traveled to London, where he earned bachelor of divinity honors and master of theology degrees. Returning to South Africa in 1966, Tutu taught theology at black universities before becoming associate director of the World Council of Churches, based in London, in 1972. In 1975 he became the first black African named Dean of St. Mary's Cathedral in Johannesburg. He held this position for only a year, however, before becoming bishop of Lesotho, where he served until 1978. He then became the first black African to be installed as general secretary of the South African Council of Churches (SACC).

In 1976 black students in townships across South Africa, most notably in Soweto near Johannesburg, erupted in protest against new apartheid laws that severely affected the already inferior black educational system. Tutu's position as SACC general secretary and his ability to speak publicly at a time when most black South African leaders were in jail or otherwise silenced offered him a unique platform from which to criticize the apartheid system. He soon became an internationally respected figure as he exposed apartheid's evils. When he called for economic sanctions against South Africa, the apartheid government withdrew his passport, but had to restore it again in 1982 under international pressure.



Archbishop Desmond Tutu. Photo by Benny Gool.

Tutu's peaceful but insistent campaign against racial injustice in South Africa earned him the Nobel Peace Prize in 1984. The Nobel Committee's announcement cited "Tutu's role as a unifying leader figure in the campaign to resolve the problem of apartheid in South Africa. The means by which this campaign is conducted is of vital importance for the whole of the continent of Africa and for the cause of peace in the world" (Nobel Foundation 2004).

Tutu left his post as SACC General Secretary in 1985 and became a leader in the United Democratic Front, a multiracial mass movement that sought to overturn the apartheid system peacefully. The movement realized its goal in 1994 when Nelson Mandela (b. 1918), a leader of South Africa's main black political party, the African National Congress, became the

first democratically elected President of South Africa. The following year Mandela appointed Tutu chair of the Truth and Reconciliation Commission, an unprecedented effort by South Africans to come to terms with their recent, dark past. The Commission focused on political crimes and human rights violations committed between 1960 and 1994, offering immunity to those who confessed their guilt. The Commission's report, issued in 1998, documented more information about political crimes and victims than any similar endeavor in world history. Although the Commission's work was highly controversial, Tutu maintained throughout the hearings a deep spirit of forgiveness and understanding rather than revenge. Tutu has often referred to the African concept of *ubuntu*, which includes the ideals of human brotherhood, mutual responsibility, and compassion.

Following his work with the Truth and Reconciliation Commission, Tutu went to Atlanta, Georgia, in 1998 to teach at Emory University. In 2000 he returned to South Africa, where he continues, as always, to fight for political, economic, and social justice for all the world's peoples. Like Gandhi, Martin Luther King Jr., and the fourteenth Dalai Lama, Tutu is a courageous practitioner of nonviolent activism against injustice and oppression. His thirty-year nonviolent campaign against apartheid, and the compassion and strength he displayed in healing wounds and uniting peoples during the Truth and Reconciliation Commission hearings, have given him a unique place in world history.

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See also Apartheid

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Stability and peace in our land will not come from the barrel of a gun, because peace without justice is an impossibility. • **Desmond Tutu (b. 1931)**

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Ugarit

Archaeological finds from the ancient cosmopolitan trading center of Ugarit, which flourished on the Syrian coast from about 2000 to 1200 BCE, reveal much about the city's language, culture, government, and economy—as well as aspects of life in the larger Mediterranean world. One of history's unresolved mysteries surrounds the virtual abandonment of this strategically vital site after 1190 BCE.

Ugarit is the name of an ancient urban center located on the Syrian coast. The contemporary Arabic name for the site is Ras Shamra (Fennel Cape). It was a cosmopolitan center of trade during the Middle Bronze II and Late Bronze periods (2000–1550 BCE and 1550–1200 BCE, respectively), with an ethnically diverse population. Since 1929 many texts written in Hurrian, Akkadian, Sumerian, and Ugaritic (the native language of the city's inhabitants), have been discovered within its environs. Significant archeological discoveries have also been made at Minet el-Beida (west of the city on the coast), believed to be its port, and at Ras Ibn Hani, located some 4.5 kilometers to the south. The archeological record indicates that Ugarit was first occupied in the seventh millennium BCE and enjoyed its cultural zenith from the fourteenth through the thirteenth centuries BCE, from the time of the reign of Niqmaddu II (reigned c. 1350–1315 BCE) through the reign of Ammurapi (reigned c. 1215–1190/1185 BCE). During this time, the city was the center of a kingdom whose territorial expanse—at its height—was roughly 5,425 square kilometers. Extant evidence suggests that the city was destroyed around 1190 BCE by an invading force from the eastern Mediterranean region. Ugaritic

documents identify the invaders as the “Shikila people,” part of the larger group of “sea peoples” known to have attacked the Egyptian and Hittite kingdoms during the same period. After its destruction, the site was occupied only sparingly during the fifth to fourth centuries BCE and the first century BCE. One of history's unresolved mysteries surrounds the virtual abandonment of this strategically vital site after the twelfth century BCE.

At its cultural high point, the population of Ugarit and its surrounding kingdom reached thirty-one thousand to thirty-three thousand persons; about six thousand to eight thousand of them lived in the city proper, with another twenty-five thousand occupying a vast array of rural villages surrounding it. It was one of several independent coastal Levantine (referring to the eastern Mediterranean) city-states that flourished during the Middle Bronze II and Late Bronze Periods. The city's location on a land bridge of strategic importance to these kingdoms, several of which had colonies and imperial holdings throughout the Near East, had a profound impact on its history. During this time the city enjoyed a high degree of prosperity due in large part to favorable climactic conditions and its leaders' ability to negotiate political arrangements with the city's powerful neighbors. Such important arrangements included the establishment of détente with Egypt, the formation of a protective alliance with the Amurru kingdom located to its immediate south, and eventual accession to vassalage under the Hittite Empire located to its north.

The city's native language, Ugaritic, has affinities with Hebrew and other Canaanite dialects and is part of the Afroasiatic phylum. It is written in an alphabetic cuneiform script consisting of thirty signs.

Ugaritic writing is almost strictly consonantal. Vowels are indicated very sparingly. Future study of this language and its script is likely to shed additional light on the development of writing systems in Phoenicia and Greece. It also promises to help us better understand the history of literacy in early and late antiquity. The corpus of Ugaritic literature consists of a rich and varied assortment of genres. The major edited collection of these texts (KTU) has identified literary and religious texts, letters, legal texts, economic texts, scribal exercises, and inscriptions on objects, as well as some texts that are unclassified and others that are illegible or fragmentary.

Ugarit was historically a prosperous and politically stable city governed by a single dynasty. Although less than half of the site has been fully excavated, evidence of intricate urban planning, with particular attention to public works, including city walls, streets, water works, and sewage facilities, has been found. Intensive agriculture and international trade via land and sea fueled the city's economy. Cereals, grapes, and olives were grown. Stone was quarried, timber was harvested, and both cattle and sheep were raised. Given its proximity to the coast, fishing may well have been one of its mainstays. Industrial activities within the city and at its port included the manufacture of purple dye, textiles, pottery, household utensils, luxury items (metal and precious stones), and weapons. Slavery was also permissible.

Ugarit's monarch shared power with a prefect, queen, and nobles. Members of the royal family also exercised some influence in the determination of affairs of state. Its society was stratified, though not in a rigid manner. Vertical and horizontal movement was possible. Although it was a patriarchal society, women were afforded a number of rights and privileges. They could inherit family property, if so designated by the appropriate male head of household (i.e., a father or husband), designate heirs, initiate proceedings for divorce and adoption, purchase and dispense of property, and retain control of the possessions brought into a marital arrangement in the event of dissolution.

The populace was separated into two large classes. The first consisted of "men of the king." These were craft specialists, warriors, and members of other elite groups retained by the monarch for service to the crown. The second was made up of the members of the general populace, whose affairs were governed by familial norms and local customs enforced at the community level by councils of elders. The Ugaritic social hierarchy was extraordinarily complex and contained an array of military, scribal, and administrative classes.

Extended family units consisting of parents, children, and other relatives appear to have been the norm. Furthermore, one's family consisted of members both living and deceased. Thus, proper exercise of familial obligations included veneration of one's ancestors. Along with the worship of familial deities, ancestor veneration appears to have been an essential feature of Ugaritic religious life. Ugaritic theology was polytheistic. In excess of a hundred gods are mentioned in various pantheon lists and other sources. Chief among these are El and Asherah (the divine regent and his spouse), Baal (the storm god and coregent), Anat (warrior, member of the divine royal household, and sister of Baal), Yamm (the deified ocean and major rival of Baal for cosmic coregency), and Mot (the god that embodies the forces of death and dissolution in all of their cosmic and earthly manifestations). Two large temples and a rich assortment of ritual texts have been excavated that provide evidence of a complex religious hierarchy with several levels of functionaries including administrators, priests, and other officials.

Ugaritic expressive culture was also highly developed. The achievements of the city's artists in the areas of music, architecture, sculpture, and folklore are noteworthy.

In sum, data from Ugarit tell us a great deal about life in ancient Syria. Its material artifacts, texts, and history are also of particular interest to philologists, anthropologists, and other scholars of antiquity because of the light that its language, lore, and culture shed on developments in the larger Mediterranean



world as well as in Anatolia, Syria-Palestine, Mesopotamia, and Egypt.

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See also Script Decipherment

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‘Umar ibn al-Khattab

(c. 586–644 CE)

SECOND MUSLIM CALIPH

After the Prophet Muhammad, ‘Umar ibn al-Khattab was one of the most influential rulers during Islam’s formative years. He was responsible for the first codification of Islamic law, for devising the Islamic calendar, and for many of Islam’s more proscriptive ordinances and attitudes.

One of the ten Companions of the Prophet to whom Muhammad promised paradise, ‘Umar ibn al-Khattab ruled from 634 CE to 644 CE as the second of the four Rashidun (Arabic: “rightly guided”), or universally acknowledged, caliphs. (‘Umar’s daughter was Hafsa, one of Muhammad’s wives.) After Muhammad, ‘Umar is one of the principle personalities of Islam, having presided over a crucial era in Islam’s political and doctrinal formation, playing a role analogous in many ways to that of Saint Paul in Christianity.

An early convert to Islam, ‘Umar took part in the Hijra of 622 CE that marked the flight of Muhammad from Mecca and the establishment of the first Muslim community at Medina. Becoming caliph following the death of Abu Bakr, (c. 573–634 CE; reigned 632–634 CE) and assuming the title of commander of the faithful, he governed the Arabs during their most dramatic period of military expansion, which included the conquests of southern Iraq (from 635 CE), Palestine (638 CE), Syria (637 CE), western Iran (from 641 CE), Egypt (642 CE) and Libya (643 CE). Among the many important administrative developments credited to his reign are the first codification of Islamic law, the devising of the Islamic calendar, and the establishment of the Islamic magistrate that registered the Muslims of Medina and Arab soldiers, among whom

the booty from the conquests and the tribute they generated was to be formally shared. Allotments were based on one’s tribal pedigree and the length of one’s family’s association with Islam. As much a system of control as reward, it was intended to maintain the cohesiveness and distinctiveness of Arab identity in the face of geographic dispersal, a tendency manifest also in ‘Umar’s policy of establishing Arab-only garrison towns in conquered areas to prevent religious and cultural contamination by the conquered peoples.

He is most famous among non-Muslims for the so-called Pact of ‘Umar, which is held to mark the first formal elaboration of the protection extended in principle to all conquered peoples who were adherents of revealed religions. The designation “People of the Book” originally applied only to Christians and Jews, but was soon extended to include Zoroastrians, eventually Buddhists, and in some cases members of other religions in accord with the necessities of governance. The origin of the pact is said to be negotiations that ‘Umar carried out with the people of Jerusalem sometime between 636 CE and 638 CE, around the time of their surrender. The Islamic conception of the city as a holy site was coalescing at this time. ‘Umar is said to have entered messiah-like on a donkey; he eschewed an offer to pray in the Church of the Holy Sepulchre on the grounds that Muslims would later demand it be destroyed to make way for a mosque. Indeed, the spot nearby where he is said to have prayed is the site of the present Mosque of ‘Umar.

By allowing non-Muslims wide liberties and permitting them to continue to administer the conquered lands, ‘Umar confronted two serious challenges to instability resulting from the incredible pace of the conquests and the paucity of Arab military forces:

The death of a thousand worshipers is easier to bear than the death of a scholar who has knowledge of what Allah has permitted and forbidden. • 'Umar ibn al-Khattab (c. 586–644 CE)

namely, the potential for popular unrest and rebellion and the necessity to maintain the economic viability of the new territories. Although the various rough surrender agreements were undoubtedly negotiated ad hoc by local commanders, ninth-century and later Islamic jurists conceived of an elaborate and standardized pact, which they then attributed back to 'Umar himself. In a less tolerant vein, 'Umar originated the policy that the Arabian Peninsula itself should be inhabited solely by Muslims, and Christians and Jews were expelled. His attitude to gender role was also famously inflexible and many of the more restrictive Islamic traditions in this regard can be traced to his influence.

'Umar was choleric and uncompromising, his formidable character and famous ill-temper stifling opposition. In the finest Machiavellian style, he played off potentially dissenting elements among the Companions of the Prophet and the tribal leaders, depending as much as he could on officials and lieutenants of his own making, all the while supporting the power of the Meccan elite, particularly the future caliphal family, the Umayyads.

On 3 November 644 CE 'Umar was murdered by a Christian slave belonging to the governor of Basra (in southern Iraq), who was apparently distraught at having failed to negotiate fiscal concessions from the caliph. After his death, the Meccan elite continued to dominate the caliphate, electing another of their group, 'Uthman ibn 'Affan, as successor—a fact

that would exacerbate divisions in Islam between the Syrian-Meccan faction and the Iraqi faction, which tended to support the claims of 'Ali (c. 600–661 CE), the fourth caliph.

'Umar is intensely revered and romanticized, particularly by Sunni Muslims. Famous for the strength of his convictions and unwavering rigor, he is considered by many to be the originator of many of Islam's more proscriptive ordinances and attitudes.

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See also Islam; Islamic Law; Islamic World

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United Nations

At the end of World War II in 1945, the United Nations was established with the aim of preventing further devastating wars. It is a member-based international organization open to all legitimate sovereign states in the international community. While it has a broad and expanding mandate that changes with the times, maintaining international peace and security remains a central aim.

The United Nations (U.N.) is both an international organization and a transnational association of countries. Its primary mission is to maintain world peace and security and promote social development and human rights. The U.N. was officially established by fifty-one nations on 24 October 1945 in response to the catastrophes of the two world wars, and met for the first time in Westminster Central Hall in January 1946.

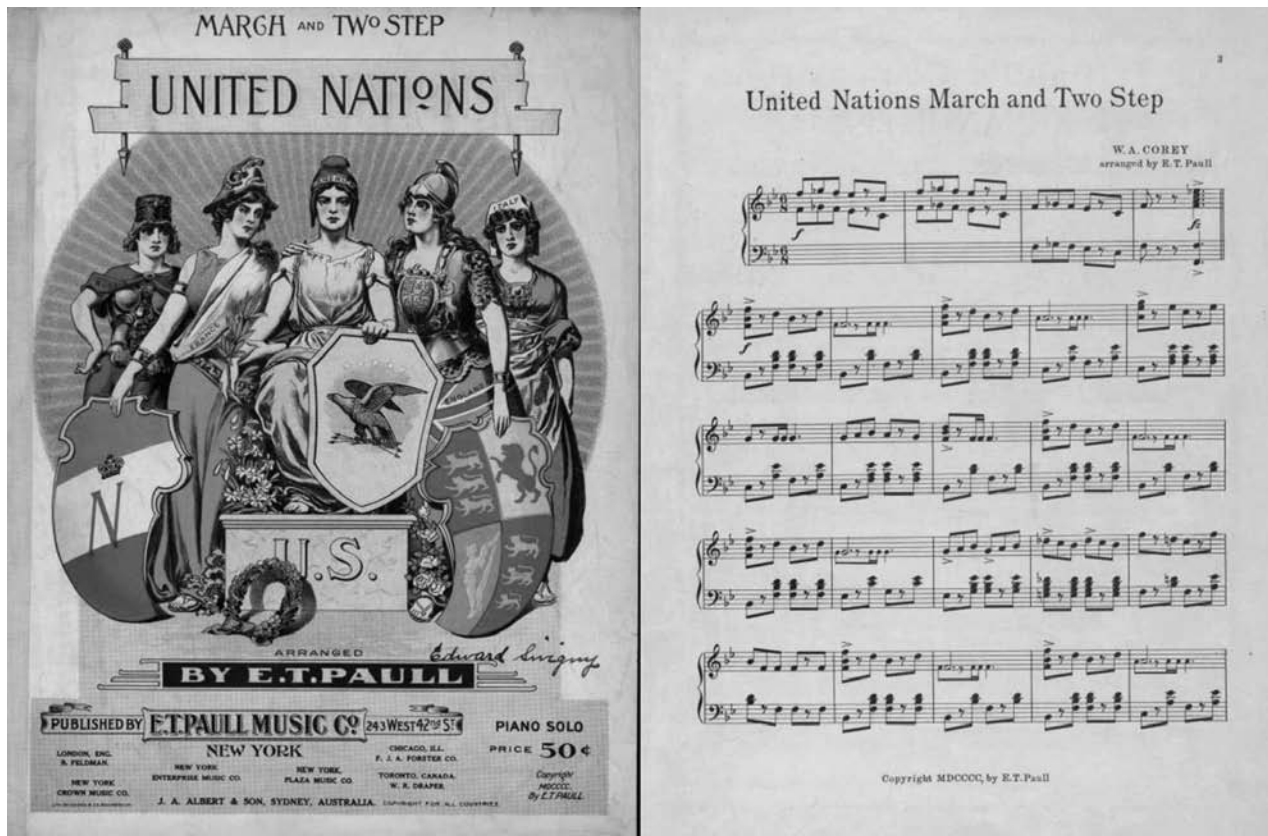
The U.N., which emerged from years of intense debate tainted by the failure of the League of Nations during the interwar period, was founded on many of the conclusions reached at the 1944 Dumbarton Oaks conference in Washington, D.C., which was attended by representatives of China, the Soviet Union, the United Kingdom, and the United States. The U.N. promised to end the dominance of feuding empires and imperialism—the results of which were the social and economic devastation of the two world wars—and to order the world based on statehood, national sovereignty, and the stability believed to be associated with such a model. The U.N. Charter did not define the concept of the state as the Peace of Westphalia (based on the Treaties of Osnabrück and Münster of 1648) and the Congress of Vienna (1815) had, but it

granted general recognition of the concept to those outside western Europe, an action unprecedented in world politics.

The U.N. cannot simply be called an international organization; it comprises a conglomeration of institutions, nations' domestic priorities, and individual personalities. The U.N. operates under six principal organs: the General Assembly, Security Council, Economic and Social Council, Trusteeship Council (effectively suspended in 1994), International Court of Justice, and Secretariat. These organs oversee twenty-one distinct programs, institutes, and entities. Nothing puts the magnitude of the U.N.'s work in perspective better than the numbers: it has forty thousand employees from all member countries and a budget of \$4.2 billion, excluding peacekeeping operations.

Center of Politics

To accommodate the voices of all member countries but maintain a small body that acts in times of crises, the General Assembly and the Security Council were created in 1945 and remain at the center of U.N. politics. As of mid-2010, 192 nations—all member countries—are represented in the General Assembly, which acts primarily as a deliberative body funneling research and recommendations to other organs of the U.N. The five permanent Security Council members—China, France, the Russian Federation, the United Kingdom, and the United States (i.e., those nations responsible for the defeat of Germany, Italy, and Japan in World War II)—and ten rotating members decide on plans of collective action involving all member countries, with the use of force if necessary, as outlined in Chapter VII of the U.N. Charter.



Illustrated sheet music cover (c. 1900) for “United Nations March and Two Step” depicts five women warriors identified as Russia, France, America, England, and Italy. New York Public Library.

The five permanent members have the controversial veto power to block any proposal brought before the council by casting a negative vote.

While the United States and the former Soviet Union battled for political ground in the Security Council during the Cold War, the General Assembly underwent a rapid transformation because of the influx of new decolonized members during the 1960s and 1970s, with the membership trebling to reach 154 by the end of the 1970s. Previously marginalized issues were given unparalleled legitimacy on the world stage. Concrete results of this paradigm shift include the Universal Declaration of Human Rights in 1948, the establishment of the U.N. High Commissioner for Refugees in 1951, the Freedom from Hunger campaign begun in 1960, the decrease of child mortality rates around the world by 50 percent during the last forty years, and the legal recognition of commercial sea boundaries for all countries in 1994. The promotion of the needs of developing countries during the last half-century—the institutionalized

effect of the U.N.’s global design—is no accident. This agenda is most evident in the eight U.N. Millennium Development Goals, which include achieving poverty, education, health, gender equity, and sustainability targets by 2015.

The U.N. has a mixed record on achieving what the League of Nations never could: the ability to use force to preserve international stability. Whether force is justified, implemented quickly enough, and agreed upon democratically informs much of the criticism and praise given to the U.N. Its successful roles in easing armed conflict in the Congo (1960), El Salvador (1995), and the former Yugoslavia (1999) have been praised, whereas its failures in halting the Soviet invasion of Hungary in 1956 and the more recent Cambodian (1979) and Rwandan (1994) genocides have threatened its credibility. Moreover, we cannot ignore the role that individual national interests play in the cohesion of U.N. member countries. For example, U.S. domestic politics have yielded many unilateral decisions, namely the decision not to initially sign



The United Nations headquarters in New York in 1956, five years after its official opening. John D. Rockefeller donated the \$8.5 million needed to purchase the site, located along the East River. Library of Congress.

the Kyoto Protocol on climate change or to ratify the Convention on the Elimination of All Forms of Discrimination against Women. Most recently the unilateral U.S. interventions in Iraq and Afghanistan have again posed some serious questions about the U.N.'s role and credibility. The U.N.'s ability to work in the interest of all member countries has been routinely challenged.

Reform Needed

U.N. reform is needed in order to evaluate seriously the following questions. How can the imbalance of power between the Security Council, composed of the so-called Great Powers, and the General Assembly be remedied? Should the Security Council be expanded to include powers such as Germany and Japan and rising powers such as India and Brazil? At what point during a civil conflict should nonviolence mean stability and result in the exit of U.N. peacekeepers? Should the U.N. have its own military force and end its reliance on contributor countries for armed

needs? How should national sovereignty be redefined in light of the crimes against humanity committed by a range of governments and the differing international reactions that these regimes received from the international community? How can arms control be made more effective for industrialized and developing countries alike? How should the U.N. work with other transnational associations such as the North Atlantic Treaty Organization (NATO)? Can the U.N. effectively implement results-based budgeting? How will the U.N. fix its infamous bureaucratic backlog and systematic managerial problems? And how is the U.N. best funded in order to allow it to pursue its expanding mandate?

The U.N. continues to be an undeniable force in world affairs. Even when acting in the national interest, the fact that superpowers seek U.N. backing for their actions, as seen in the determination of the administration of U.S. president George W. Bush (served 2001–2009) to receive U.N. sanction for the 2003 Iraq War, demonstrates the continued relevance and legitimacy of the organization. To be



sure, the U.N.'s inability to act in the majority interests of member countries against this war also threatens how future crises will be handled. The ongoing situation in Darfur, Sudan, called "the next Rwanda" by some critics, has proven to be yet another test of the U.N.'s ability to act as an international body working, in the words of its charter, "to save succeeding generations from the scourge of war."

The U.N. has successfully managed to avoid another major international conflict such as a world war, but in respect to its primary aims and objectives, the U.N.'s scorecard for much of its sixty-four years of history reveals a mix of successes and failures. Perhaps the best test of the ongoing significance and importance of the U.N.'s role in maintaining international peace and security is to admit that if it did not exist, something very similar would have to be created from the ground up.

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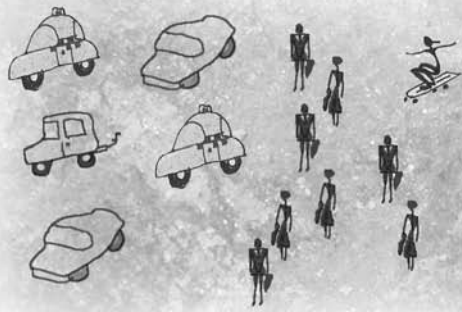
See also International Organizations; League of Nations; North Atlantic Treaty Association (NATO); Peacemaking in the Modern World

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United States of America

The history of the United States is usually taught and written about as if the nation was self-contained, not part of any larger history than itself. Yet history operates across space as well as through time, and the history of the Americas, including the United States, shares world history from its very beginnings.

Because the United States is continental in scale and without threatening neighbors, its history is usually focused inward. The most famous continental interpretation of U.S. history is the frontier thesis of Frederick Jackson Turner, popularized as a story of generations of Europeans moving west. The vision of the United States in Turner's elegant essay of 1893 is deeply embedded in American mythology. Yet Turner was making the point that this westward movement across the continent was coming to an end; the frontier experience would no longer shape American life and values.

Turner offered his larger reflections on modern history and historical method two years earlier when he explained that "we cannot select a stretch of land and say we will limit our study to this land; for local history can only be understood in the light of the history of the world" (quoted in Bender 2006, 12). He was prompted to make this point in the 1890s because global trade and modern means of communications and transportation meant that all nations were, in his phrase, "inextricably connected." A hundred years later, in the 1990s, when talk about "globalization" and the "Internet" became pervasive, the same idea dawned upon historians: perhaps American history should be thought about and taught in terms of its global connections and the history it shares with the rest of the planet.



The world map made in 1459 by Fra Mauro for the King of Portugal shows the ocean encircling the Afro-Eurasia landmass, the known world before the voyages of Columbus.

In fact, the modern history of the Americas and global history commence at the same time. Both are the result of the same rapid sequence of events, from the voyages of Christopher Columbus, Vasco da Gama (who established a sea route from Europe to India), and the expedition captained by Ferdinand Magellan that circumnavigated the globe between 1519 and 1521. Within a quarter of a century of the first recorded Atlantic transit, the planet had been encircled by oceanic voyages. The great achievement of this "age of discovery" was not only the discovery of America but, more importantly, what could fairly be called the discovery of the "oceanic world."



Martin Waldseemüller's 1507 world map was the first to christen the lands of the New World "America," and the first to depict clearly a separate Western Hemisphere with the Pacific as a separate ocean.

This notion requires some explanation. Before the voyage of Columbus maps had shown the ocean as the outer limit of the world, ringing the Afro-Eurasian landmass that was the known world. The Americas were unknown to the peoples of that world, as the Afro-Eurasian world was unknown to the first peoples of the Western Hemisphere. Jews, Christians, and Muslims shared the Old Testament account of the origins of that world. God had pulled back the ocean to make land for the beginning of the human family, Adam and Eve.

The place that Columbus found and began to explore was first labeled "America" by the German mapmaker Martin Waldseemüller in 1507; his map first showed the hemisphere as separate from Asia. The name, which Waldseemüller wrote over what is today's northern Brazil, came from Amerigo Vespucci, a Florentine who had explored the mouth of the Amazon River in 1499. He called the hemisphere *Mundus Novus* or "new world." Educated in the classics, he recognized that the ancients had known nothing of what he saw. But it was new in a different way as well. The ancient Greeks knew that you could sail west from Iberia (Spain) to Asia, except that the ocean was in the way. The discovery that the ocean was not in the way,

that it was in fact the connector of all the continents, transformed understanding of the planet. It extended the world to include the oceans as well as the land of the planet, making history global. Rather quickly the new globality entered the literary imagination. A Spanish scholar and writer in 1540 wrote a fantastic account of a journey to the moon, which included a view of the Earth as a globe, prefiguring by centuries the photographic image of the moon made by U.S. astronauts in 1969. The cities, empires, and nations that would develop from the seventeenth century on would be part of global history; their histories could not be wholly separated from that larger history.

The peoples of the world, including the adventurers who established the first settlements in British North America, were worldlier than we usually assume them to have been. Captain John Smith, who rescued from disaster the Jamestown settlement in Virginia, England's first continental settlement in 1607, is an example. He had seen a good part of the world before he joined the Jamestown project, perhaps somewhat by accident. The usual colonial narrative seems to suggest that his life "abroad" consisted of his few months in Virginia. In fact, that brief experience was embedded in a longer train of experiences in Europe,



Portrait of Captain John Smith from his map of New England. Smith credited his successful intervention in the Jamestown colony to his prior experiences in foreign travel and war.

Central Asia, and Africa that were remarkable but not unique for European adventurers. Smith, who in his teens had gone to the European continent to fight the Catholics, afterward on his return to England met an aristocrat from the former Byzantine Empire. He mentored Smith, making the son of a yeoman into a gentleman. At the age of twenty, he went forth to see the world and to “trie his fortune against the Turks” of the Ottoman Empire, who had recently conquered parts of the Habsburg Empire (Kupperman 2007, 53). He joined the Austrian and Hungarian resistance to the Ottoman armies, learning the art of war, including a command that resulted in the capture of a Hungarian town that had been held by the Ottomans.

His next military adventure, in the service of a Hungarian prince, dragged on in a stalemate, neither side able to mount an effective attack. The Turkish

commander proposed that one Christian soldier compete with him one on one to decide the battle. Smith was selected; he beheaded the leader and two subsequent challengers. The Hungarian prince honored him with a Hungarian coat of arms that displayed three heads. In a subsequent battle he was injured, but villagers rescued him and nursed him to health. Then, however, they then sold him into slavery. The noble who bought Smith gave him to his mistress, who became fond of him. To protect him, she sent him to her brother, an Ottoman military officer stationed in the Black Sea region. The officer turned out to be a cruel master, and Smith rebelled, killing the officer. He then fled to North Africa, where he met the king of Morocco, who was at that time in correspondence with Queen Elizabeth of England proposing a joint colonization project in the Americas. Smith might have gotten the idea of an American adventure there. At any event, he returned to England and joined the Jamestown project. Does all of this travel and fighting make any difference for American history? Smith thought it had. “Warres in Europe, Asia, and Africa taught me to subdue wilde salvages in Virginia and New England, in America.” (Barbour 1986, 269)

In examining the question of America in the world, this essay does not address the foreign relations of the United States. That is another topic. Here the aim is to show the participation of the United States in world history as part of the common history of the world. It makes the point that the history of the United States is, as Turner suggested, a local example of a larger history that may be global in extent. So the question is whether these larger histories help explain the development of the United States. In fact, major events of American history—and many others besides—cannot be adequately explained other than in part by locating them in world history. For examples, the American Revolution, the Civil War, and Progressivism and the beginnings of the modern welfare state will serve here.

The American Revolution

We usually think of the American Revolution as a very specific and local event: resistance by the thirteen



The marriage of Pocahontas, engraving after a painting by Henry Brueckner (c. 1855). Romanticized accounts of Pocahontas's life often overlook her role as a vital link between Native Americans and the British. Library of Congress.

colonies in the face of unwelcome changes in British colonial policies in North America. It was in fact an episode in the “Great War” between England and France. This war lasted episodically for 126 years, from 1689 to 1815, and after 1753 it was a global war, fought on every continent.

The competition between England and France was costly to royal finances. Governments had to show the taxpayers at home that new taxes were worth it, or they had to find other sources of funds, most obviously from the colonies themselves. Historians refer to the financial and governance squeeze as a “military-fiscal crisis.” The British victory in the Seven Years’ War (1756–1763) was so spectacular that it greatly enlarged the empire, at the expense of the French, who lost Canada and trading centers in Africa and Asia. To meet the costs of the war and to secure the new territories, the British crown and Parliament turned to the colonies for new revenue. This decision led to the sequence of infamous (in America) taxes that triggered the resistance that developed into a successful war for independence. But the high cost of empire and imperial wars affected the Portuguese and Spanish empires as well. And they turned to similar strategies. The fiscal crises both faced, as well as new Enlightenment ideas of rational administration, inspired novel imperial policies that promised more revenue.

Any changes in the rules of the game, however, can unsettle established customs and hierarchies of status and power. That happened in all of the empires. Established elites felt that they were being marginalized, that traditional forms of power formerly available to them were being diminished or taken away entirely. They also felt that they were suddenly being treated as second class, when they thought themselves as equal in rights to those in the home country. There were tensions and forms of resistance throughout the Americas, and in the British case expansions of imperial power in India (by way of the East India Company) produced military conflict in the Bengal region of India. There were major eighteenth-century colonial revolts in Colombia and Argentina, and the Portuguese were confronted with a number of smaller plots and rebellions. The rebellion in Peru and the La Plata region of Spanish America in 1782 that was led by Túpac Amaru, descendant of the last Inca king, almost brought down the empire in today’s Peru, Bolivia, Uruguay, and Argentina.

The Thirteen Colonies would not have succeeded in their rebellion without the financial aid, diplomatic support, and military assistance of France. Why did an absolutist monarchy support the American republicans? Because the French had lost badly in the Seven Years’ War, they wanted revenge on Britain. Even the

The British general Cornwallis surrenders to French troops (pictured left) and American troops (seen right), at the Battle of Yorktown in 1781. The American Revolution would not have succeeded without French support.



Marquis de Lafayette, who later became a great friend of the Americans, declared that his initial motive for joining the American cause was simply to battle Britain. It was to damage England rather than to help the Americans that France gave its support.

To understand the American Revolution within the context of the long war between France and England that did not end until 1815 is to revise the chronology as well as the geography of the age of revolution. After the Treaty of Paris (1783), which recognized the independence of the United States, the new nation could not fully exercise control over its territory. Britain still had forts in the Ohio Valley, for example. Nor could the Americans protect their sailors from “impressment,” a form of kidnapping of American sailors by the British for service on their ships. Before the United States could fully exercise its independence, the Great War had to end as it did in 1815, with the defeat of Napoleón by the British.

The intense partisanship in the politics of 1790s and creation of political parties, something not anticipated by the founders or provided for in the Constitution, were also a result of foreign issues, particularly a deep division of opinion about the French Revolution and the wars that followed it. But the first American party system, as political scientists call it, and the passionate political conflict associated with it, dissolved in 1815, when the Great War ended. Historians call

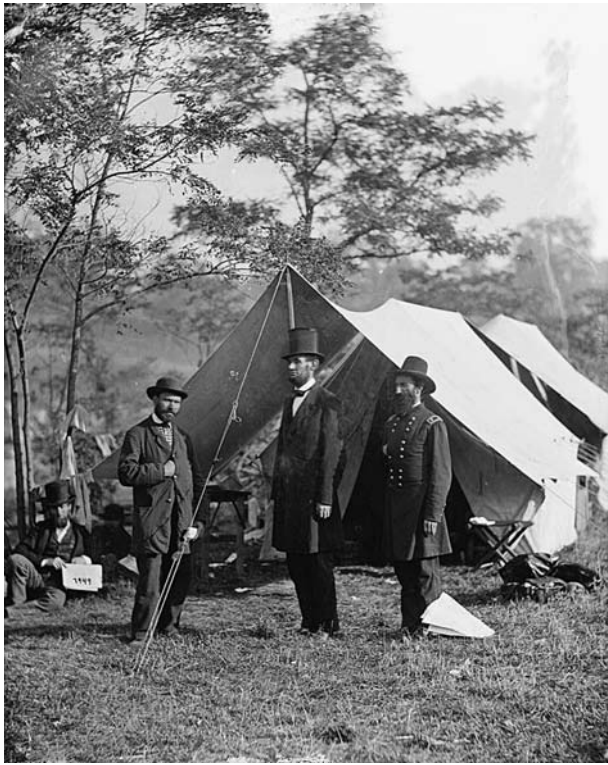
this postparty period the “era of good feelings,” but this change was not the product of a sudden desire to be nice in Washington; rather it was a result of the end of the international irritant.

This wider view also opens the way for understanding the importance for American history of the third great eighteenth-century revolution: the extraordinarily wealthy French slave colony of Saint Domingue, or as it was called after independence, Haiti. Federalists and Jeffersonians divided over whether to aid and support Toussaint Louverture, the former slave who led the revolution. John Adams was supportive, with matériel as well as foodstuffs, while Jefferson embargoed the second republic in the Americas, a black republic. This largest slave revolt in history shook planters throughout the Americas, including Jefferson, who was in a panic. Ironically, it also gave him his greatest accomplishment as president. The loss of Haiti prompted Napoleón to sell Louisiana.

The Civil War

The American Civil War is the moral core of American history. Yet it also invites a global framing as part of the nineteenth-century invention of the modern nation-state and the turn against unfree labor—conditions under which people must work against

I am a firm believer in the people. If given the truth, they can be depended upon to meet any national crises. The great point is to bring them the real facts. • **Abraham Lincoln (1809–1865)**



Allan Pinkerton, President Lincoln, and Major General John A. McClernand at Antietam, fall 1862. European liberal ideas about national homogeneity had long influenced Lincoln's antislavery position.
Photo by Alexander Gardner.

their will, including slavery, debt bondage, serfdom, or prison labor—in the Atlantic world. The immediate transnational context was the European revolutions of 1848. Abraham Lincoln, who had been elected to the U.S. House of Representatives in 1846, admired the European liberals who were seeking to transform monarchies into parliamentary nation-states. These liberals, as well as Lincoln and the Republican Party, linked nation and freedom, with the nation a vehicle for achieving greater freedom.

Lincoln also absorbed their redefinition of the meaning of national territory, particularly the demand for homogeneity within national borders. In central Europe homogeneity meant linguistic or ethnic homogeneity, but that was not the meaning for Lincoln. He had strongly opposed the anti-immigrant Know Nothing Party of the 1850s; for him homogeneity meant the nation would be all free or all slave. That was the

underlying logic and conclusion of the famous “House Divided” speech he delivered in 1858. Of course, the nation had been divided from the beginning. It was a political problem to be compromised, as it was in the 3/5 clause of the Constitution and in subsequent compromises, such as the Missouri Compromise that established a line equally dividing slave and free territories. The new Atlantic-wide understanding of the nation-state made such compromise impossible. The passion of Lincoln and those who supported the Republican Party in 1860 cannot be understood without awareness of this new understanding of the nation that was circulating around the globe.

The United States was also experiencing a federative crisis, arguing over the relation of national and local power. The Republicans were strong nationalizers, while southern politicians embraced decentralization that would allow individual states to protect their “peculiar institution.” This struggle between centralization and decentralization was a global phenomenon, and wars were fought in Europe (Germany and Italy) and Latin America, particularly in Argentina, but also Brazil and Chile. The issue was resolved without war in Japan, with the Meiji Restoration, and in Siam, today’s Thailand, where a modern state structure was established under the leadership of the monarch. Although the nationalist revolution in Hungary against the Habsburg Empire failed in 1848, Hungary achieved self rule in domestic matters in 1867, under what became the Austro-Hungarian “Dual Monarchy.” There were also efforts to strengthen the Russian and Ottoman empires, making them more like modern European states. Equally important, emancipation, or freedom, was part of the process of nation making in the middle of the nineteenth century. While the United States freed four million slaves, another forty million serfs were emancipated in the Habsburg, Russian, and other empires.

Not only did Americans feel themselves part of the liberal movements of 1848, a point made repeatedly by Lincoln—and by common soldiers as well—but the great European liberals, from John Stuart Mill in England to Giuseppe Garibaldi in Italy to Louis Kossuth in Hungary, also understood the American Civil



This World War I propaganda poster, designed to appeal to the United States' large immigrant population, was printed in many different languages. Library of Congress.

War to be a crucial episode in the history of liberal reform well beyond the United States.

Progressive Reform and the Welfare State

American progressivism was part of a broad transformation of laissez faire liberalism into what was called variously the new liberalism, economic liberalism, or social liberalism. Its beginnings in the United States were in the 1890s and it culminated in the American welfare state in the 1930s established by Franklin D. Roosevelt's New Deal. This movement was part of a global response to massive urbanization and industrialization under conditions of unregulated capitalism. A global menu of reform ideas was available to all industrializing nations. Many of the key ideas originated in the economics



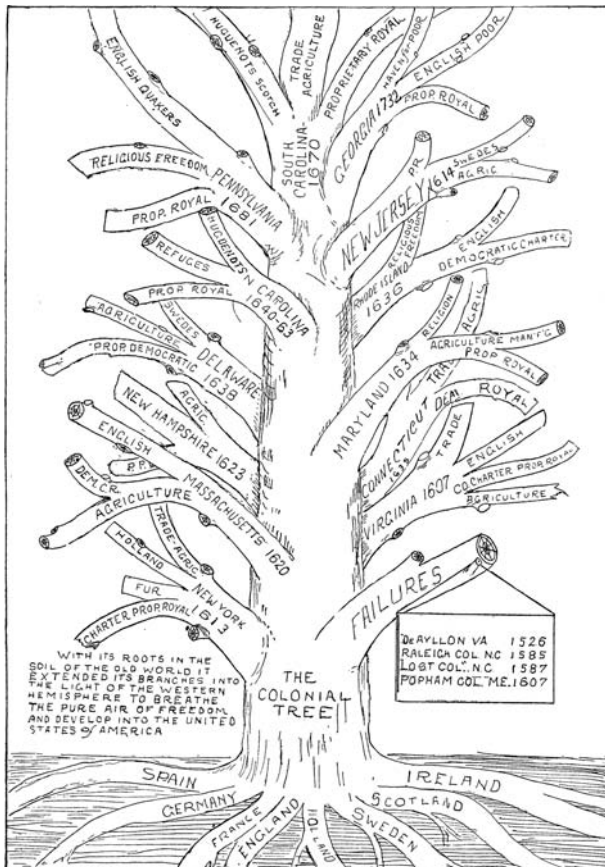
The embrace of 2nd Lt. William Robertson and Lt. Alexander Sylvashko symbolizes the historic meeting of the Russian and American armies, near Torgau, Germany, on 25 April 1945. National Archives.

seminars of German universities; these ideas were particularly important in the United States and Japan. But there was a general circulation of ideas; all industrial nations were borrowing ideas from each other.

Somewhat counter-intuitively, reformers realized that modern urban and industrial society held more daily life risks than did the agricultural era. Modern society is a risk society, no safer than a jungle, and it required novel forms of protection. This was pointed out in the very title of the reform novel published by Upton Sinclair in 1906: although set in a city, Chicago, the title was *The Jungle*. Risk is best addressed by insurance, and what became the twentieth-century welfare state was a combination of regulation and social insurance.

All urban and industrial nations developed programs of insurance against old age, industrial accidents, illness and injury, and unemployment. If the ideas were in general circulation, the policy outcomes were distinct. While other industrial nations included health insurance in the social liberalism package, the United States did not. On the other hand, the United States moved very fast to protect pure food and drugs, beginning with milk inspection in the 1870s in New York City.

Here is where one must be careful, however. If the policy ideas and examples were available to all, the politics of reform had national distinctions. Why? Local cultural and political traditions, national politics, the balance of interests produced different versions of the new liberalism. For example, opposition



The “Colonial Tree,” with its roots in Old World soil, has a branch for each of the thirteen colonies—plus one that commemorates the “failures” of early settlements.

to the reforms came from different groups in different nations: in Latin America and Russia it was the landed classes; in the United States and Japan it was big business. This is why a national history in a global context is not global history. It is both global and national, but in the end the point is to explain a national history.

By examining the history of the United States in the larger context of world history, national history is not dissolved but rather its distinctiveness becomes clearer. But the global context also provides fuller explanations of how change has happened, and it becomes easier to understand why U.S. history differs from other histories as well as to better understand how much is shared.

It is often claimed that American history is exceptional; placing American history in a global context undermines this exceptionalist notion of American history. Yet the specific distinctive aspects of the history of the United States, those that make it a unique

nation, are clarified and accented. The problem with an exceptionalist interpretation of American history is that it presumes a norm, or a rule, that has one exception, the United States. That implies that the United States does not share a history with other nations, thus putting the United States outside of the common history of humankind, which obviously is not the case. There is a second problem with the argument for exceptionalism. The claim of exceptionalism requires a norm followed by everyone else. But there is in fact no norm. A global perspective reveals a spectrum of unique resolutions of many common or even universal challenges. A global perspective reveals that the United States is unique but not exceptional.

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See also Jefferson, Thomas; Lincoln, Abraham; Revolution—Haiti; Revolution—United States

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Universe, Origins of

Origin stories of all cultures face one fundamental question: how can something come from nothing? They then attempt to explain the complexity of our universe: which things came first, which came later? But unlike stories of myth, the modern theory of the origins of everything—the big bang—rests on a colossal body of carefully tested information and is powerful enough to have achieved the respect of scientists throughout the world.

In all cultures that we know of, accounts of the histories of particular communities are embedded in accounts of the history of landscapes, animals, the Earth, the stars, and the universe as a whole. All cultures understand that history begins with the origins of the universe. To understand what we are and where we have come from, we need to understand the history of the entire universe. Cosmologies offer the largest possible framework within which to think about our place in time and space.

Traditional Origin Stories

On the surface, origin stories often seem utterly different from each other. But all are attempts to grapple with the same fundamental questions. At the very beginning, they have to explain how something can come out of nothing. Some origin stories (including the Genesis story) claim that a god or gods created the universe and ignore the nagging question of how the gods were created. Many origin stories begin with a sort of nothingness out of which something appears without any clear explanation of how and why. In this way they confront the most basic duality of all:

between nothing and something. Many origin stories posit an initial state of chaos that is not quite existence and not quite nonexistence; then, out of this state arise both existence and nonexistence. Often, this mysterious process is compared to sexual reproduction, another strange form of creation in which the coming together of two people creates a third person. Robert Graves, a British author and poet renowned for his writings on mythology, summarizes an ancient Greek myth in which chaos is at the beginning, and is in some sense the creator and ground of reality. The following excerpt from Barbara Sproul's book *Primal Myths* illustrates how origin stories use richly symbolic narratives to deal with problems that still challenge us today.

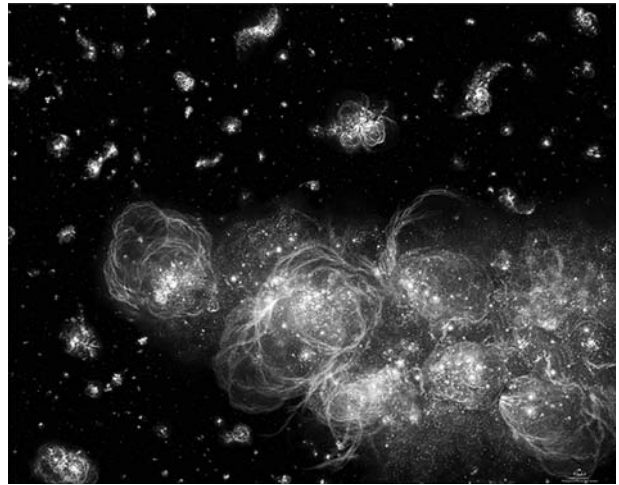
In the beginning, Eurynome, the Goddess of All Things, rose naked from Chaos, but found nothing substantial for her feet to rest upon, and therefore divided the sea from the sky, dancing lonely upon its waves. She danced towards the south, and the wind set in motion behind her seemed something new and apart with which to begin a work of creation. Wheeling about, she caught hold of this north wind, rubbed it between her hands, and behold! The great serpent Ophion. Eurynome danced to warm herself, wildly and more wildly, until Ophion, grown lustful, coiled about those divine limbs and was moved to couple with her. Now, the North Wind, who is also called Boreas, fertilizes: which is why mares often turn their hind-quarters to the wind and breed foals without aid of a stallion. So Eurynome was likewise got with child. Next she assumed the form of a dove, brooding on the waves and in due process of time, laid the Universal Egg. At her bidding, Ophion coiled seven times about this egg, until it hatched and split in two. Out tumbled all the things that exist, her children:

sun, moon, planets, stars, the Earth with its mountains and rivers, its trees, herbs and living creatures. (Sproul 1991, 157)

As this story suggests, once they have explained the origins of the universe, origin stories face many other complex questions. Can they explain the great variety and complexity of our universe? Which things came first, and which came later? Was there always conflict between different parts of the universe, or was the universe once a place of harmony? A Californian creation myth from the Cupeno tribe offers its own symbolic answers to these questions: “In the Beginning all was dark and void. A bag hung in space. In time it opened out into two halves. From one half came coyote (*isil*), from the other came wild cat (*tukut*). They immediately fell to arguing as to which was older” (Sproul 1991, 242). Primeval chaos, gods, fertilized eggs, sexuality, and a primordial division into two—these elements weave their way through many traditional creation myths.

Early Scientific Theories

Modern scientific origin stories face the same questions and paradoxes, but they try to deal with them without supposing the existence of gods or even of intentionality. Can the origins of everything be explained purely by the operation of blind natural laws? The question remains open even today for, despite the spectacular achievements of modern cosmology, we still don’t know how best to explain the moment of the universe’s origin. The origin myths of medieval Europe, from which modern cosmology evolved, described how God created a universe whose shape and movements could be described rationally within the cosmological models of the Egyptian astronomer Ptolemy (second century CE). In Ptolemy’s system, the Earth lay at the center of the universe, surrounded by a series of transparent, revolving spheres to which were attached the planets, the sun, and the stars. Ptolemy’s model worked extremely well for a long time, and proved quite accurate at predicting astronomical phenomena such as the movements of planets and stars. In



An artist’s impression of how the universe, at less than 1 billion years old, might have looked as it converted primordial hydrogen into myriad stars at an unprecedented rate. NASA and K. Lanzetta (SUNY). Artwork: A. Schaller (STScI).

sixteenth- and seventeenth-century Europe, however, other models supplanted it. The Polish astronomer Nicolaus Copernicus (1473–1533) argued that the Earth and planets revolved around the sun, while the Italian philosopher Giordano Bruno (1548–1600) argued that many of the stars were themselves suns, each perhaps with its own solar system. The new models generated during the early years of modern astronomy envisaged a universe much larger than Ptolemy’s, in which the place of the Earth and human beings became increasingly insignificant. By the end of the seventeenth century, many accepted that the universe might be both eternal and infinite.

An Expanding Universe

The idea of an eternal universe created new problems. The astronomer Johannes Kepler (1571–1630) pointed out that in an infinite universe there ought to be an infinite number of stars and an infinite amount of light pouring down on the Earth both by day and by night. The development of the theory of thermodynamics in the nineteenth century suggested another problem: in an infinitely old universe all useful energy ought to have dissipated into heat, leaving no free energy to create or sustain complex objects such as stars, planets, and living beings.

The one who walks the way of truth creates life. • Sumerian Proverb

Solutions to these problems, along with a new view of the universe itself, emerged early in the twentieth century. Studies of the structure of the universe revealed, first, that it consisted of many galaxies, not just the Milky Way, for many remote objects turned out to be galaxies in their own right. Then, in the late 1920s, Edwin Hubble (1889–1953) used the Mount Wilson telescope outside of Los Angeles to show that most distant galaxies seemed to be moving away from Earth-bound observers. Technically, he found that the light from distant galaxies was “red-shifted,” or moved to lower frequencies, which seemed to be the result of a Doppler shift. (The same effect accounts for the drop in pitch of a siren as an ambulance moves away from us.) Even more astonishingly, he found that the farther away they were, the more “red-shifted” their light was, and the faster they seemed to be moving away from the Earth. Assuming that the Earth’s position in the universe is not in any way special, so that observers elsewhere in the universe must be seeing the same thing, Hubble concluded that the entire universe must be expanding. If it was expanding now, it followed that it must have been smaller in the past, and that at some time in the past, it must have been infinitely small. Hubble’s observations might have seemed little more than a curiosity if it had not been for the fact that Albert Einstein (1879–1955), in his General Theory of Relativity (1916), had also posited that the universe might be either expanding or contracting. At first, Einstein resisted this conclusion, but by the late 1920s, he had been persuaded by the work of a young Russian mathematician, Alexander Friedmann (1888–1925) that the universe, like a pin standing on end, was unlikely to be entirely stable. In reality, it was much more likely to be either expanding or contracting, and Hubble’s evidence suggested it was expanding.

Big Bang Theory

Despite both observational and theoretical findings, the idea of an expanding universe remained little more than an intriguing hypothesis until after World

War II. Theorists such as the Russian-American physicist and astronomer Arthur Gamow (1904–1968) and the British astronomer Fred Hoyle (1915–2001) worked on the implications of an expanding universe and found that it was possible to construct a surprisingly coherent picture of how matter might have behaved under the extreme heat and pressure at the very beginning of the universe’s history. Nevertheless, for a time, the big bang theory had to compete with an alternative theory, the so-called steady state theory, developed by Hoyle and others in the 1950s. (Indeed, it was Hoyle, one of the fiercest critics of the big bang theory, who coined the phrase “big bang,” in a lecture in 1950.) In an attempt to preserve the idea of an eternal, and essentially unchanging, universe, the steady state theory suggested that matter was continually being created throughout the universe at just the rate needed to counteract the apparent rate of expansion. The steady state theory implied that the universe had always been much as it is today, a hypothesis that was soon tested. By the early 1960s, improvements in radio astronomy enabled astronomers to make more careful studies of remote galaxies. Because light takes a finite time to travel, such studies were, in effect, examining the universe in its youth, and what soon became apparent was that the early universe was very different from the universe of today. Clearly, the universe had changed over time, as the big bang theory implied.

Even more important was the discovery, in 1965, of cosmic background radiation, by two American scientists, Arno Penzias (b. 1933) and Robert Wilson (b. 1936). In trying to construct an extremely sensitive radio antenna, they found a persistent hum of weak energy coming from all directions in space. Energy coming from a particular place in space made sense, but they could imagine no force that could generate energy from all parts of the universe, until someone told them that this was exactly what the big bang theory predicted. Attempts to model the early history of the universe had suggested that as the universe cooled there would come a point when protons and electrons could combine to form atoms. Atoms,



A composite image of the Eagle Nebula (M16) from NASA's Chandra X-ray Observatory and the Hubble Space Telescope penetrates dark columns of gas and dust: star formation peaked in this region several million years ago.

unlike naked protons and electrons, are electrically neutral, so as atoms formed most of the matter in the universe lost its electric charge. At that point, matter and energy would in effect become disentangled, and energy would be free for the first time to travel at will through the universe. Early big bang theorists had suggested that this sudden release of energy ought to be observable even today, and it was soon clear that this was exactly what Penzias and Wilson had detected. The steady state theory had no explanation for cosmic background radiation, but the big bang theory seemed to explain it naturally. The discovery of cosmic background radiation was a knockout blow to the steady state theory; ever since, the big bang theory has provided the core idea, or paradigm, of modern cosmology.

Big Bang Cosmology

Working out the details of big bang cosmology remains a complex task, but no other theory comes close to explaining as much, so few cosmologists doubt that it is essentially right, even if some of its details may need to be modified in the future. One

reason for this confidence is that new evidence for the theory has emerged since the 1960s. As the power of telescopes has increased, astronomers have found that the most remote parts of the universe are indeed very different from those closest to us, and those differences fit very well with what big bang cosmology suggests about the nature of the early universe. Measurements of the age of materials in the solar system have also failed to come up with anything more than about 13 billion years old, which corresponds to the most recent estimates of the age of the universe. Furthermore, big bang theories suggest that most of the matter in the early universe would have consisted of hydrogen and helium, with other elements being created within stars or in the violent explosions of giant stars known as supernovae. This is consistent with what we observe: almost three-quarters of all atoms are hydrogen, almost one-quarter are helium, and the rest include all other elements.

In its general outlines, the origin story of big bang cosmology is simple, even though many of its details are too complex to be understood by any but physicists and cosmologists. The most recent estimates of the speed of expansion of the universe suggest that the universe appeared about 13.7 billion years ago. Before that time we have no idea what there was. We don't even know if time and space existed, and the conventional wisdom is that they, along with energy and matter, were probably created at the moment of the big bang. We also have no idea why the big bang occurred when it did. Modern science is as powerless as traditional creation stories to explain the moment of origin. But from a tiny fraction of a second after the appearance of the universe we can describe what happened with great precision. Something appeared within the primordial emptiness. This early universe was almost infinitely small, and almost infinitely hot. At temperatures of billions of degrees, time, space, energy, and matter would hardly have been distinguishable. The pressure of this concentrated energy drove the early universe apart; indeed, for a moment within the first second of its existence, the universe expanded faster than the speed of light. From the



size of an atom it blew up to many times the size of our solar system. Soon after this phase of rapid expansion (known as “inflation”), particles of matter and antimatter collided and annihilated each other, leaving a huge amount of energy and a tiny residue of matter. As the universe expanded, it cooled, and as it cooled different forms of energy and matter separated out from the initial flux. Gravity appeared, then electromagnetism, together with the strong and weak forces that shape the behavior of atomic nuclei. Quarks appeared and, within two or three minutes, the first protons and electrons.

For almost 400,000 years, the universe was still too hot for protons and electrons to combine into atoms, so that the entire universe crackled with electrical energy. Then, about 380,000 years after the big bang, the universe cooled sufficiently for protons and electrons to come together to form the first atoms, of hydrogen and helium. Matter became electrically neutral, and energy and matter went their separate ways, releasing the flash of energy that is detected today as cosmic background radiation. The next significant event occurred some 200 million years after the big bang, when clouds of hydrogen and helium began to collapse, drawn together by gravity, until their centers heated up to about 10 million C. At that point hydrogen atoms started fusing to form helium atoms, releasing a colossal amount of energy in the process (in nuclear reactions identical to those within a hydrogen bomb). The first stars were born. The release of energy at the center of a star checks the gravitational collapse of the cloud of matter from which it is formed and creates a more or less stable structure that can pump out huge amounts of energy for billions of years. Stars play a vital role within the modern creation story because they supply the energy that sustains life on Earth. Furthermore, in their dying stages some of them, particularly the very largest, can generate temperatures high enough to fuse nuclei together into more and more complicated elements. When the very largest stars die in violent explosions known as supernovae, all the remaining elements of the periodic table are created. It is from these elements that newer and more complex structures, such as planets and living organisms, can

eventually be constructed, using the energy of gravity and the heat energy pouring out of stars.

Is this story true? It is by far the best story available at present, but it is far from complete. Cosmologists wrestle with the problem of the very earliest moments, frustrated that they seem to have no way of even testing hypotheses about the moment of origin. And even the tiny fraction of a second after the beginning of the universe presents some complex puzzles. Above all, physicists and cosmologists wrestle with the problem of the relationship between gravity and the other fundamental forces of modern physics. The relationship between electromagnetism and the “strong” and “weak” nuclear forces is now largely understood, but how gravity fits in remains unclear. New observational techniques (including the use of satellite-based observatories) and new computational techniques have generated a mass of new data about the early universe, and some of this torrent of new information has forced cosmologists to rethink parts of the story. In the late 1990s, for example, evidence from the study of very remote galaxies showed that the rate of expansion of the universe is not slowing under the gravitational pull of the matter in the universe, as most cosmologists had assumed. On the contrary, it is speeding up. What this means remains uncertain, though most cosmologists believe it may be evidence for the existence of an anti-gravitational force that had already been anticipated in some of Einstein’s work. Even more disturbing is the slow realization, from studies of the movement of galaxies, that there exists a lot more “stuff” out there than we can detect. Currently, it seems likely that the matter we can observe accounts for no more than about 5 percent of the mass of the universe, while some 25 percent of its mass probably consists of matter (known, appropriately, as “dark matter”) that we cannot yet detect or explain, and perhaps as much as 70 percent is accounted for by forms of energy (known as “dark energy”) that we cannot yet detect or fully explain. To be uncertain about almost 95 percent of the contents of the universe is a serious embarrassment to modern cosmology.

Like traditional creation stories, the modern account of the origins of the universe remains a work in progress.

But unlike those stories, the modern story of the origins of everything rests on a colossal body of carefully tested information and is powerful enough to have achieved the respect of scientists not just within a single culture, but throughout the world. It is the first account of the origins of the universe to have achieved near universal respect.

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See also Big History; Cosmology; Creation Myths

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Universities

Popes, emperors, and kings chartered the first universities in twelfth-century Europe; teachers recruited students and taught Christian doctrine through lecture, debate, and reasoning. After the Renaissance, the curricula became secularized and specialized encouraging independent thought and research. European colonialism spread the university system around the world, and countries retained and modified the systems after their independence.

Universities originated in medieval Europe when groups of teachers and students attained special privileges and a corporate identity through charters from popes, emperors, and kings. University students and teachers governed themselves, electing rectors and other officers to manage their affairs. Teachers charged students a fee for attending their lectures, and over time pious donors financed special college buildings where students and faculty lived and ate. Classrooms and libraries later supplemented the earliest buildings. Books were still rare and expensive in Europe at that time, and unavailable to ordinary people, so oral presentation and argument prevailed.

Christianity and Universities

The University of Paris, founded between 1150 and 1170, specialized in trying to untangle Christian doctrine. The university took direction from the work of a famous teacher named Peter Abelard (1079–?1142), and it became a model for other European universities. Abelard was decisive in establishing the idea that apparent contradictions in the Bible and among the early Christian fathers could only be resolved by

logical reasoning. He compiled a book of quotations from sacred and revered Christian texts, titled *Sic et non* (Yes and No), setting conflicting views side by side so no one could doubt that there were important questions to be answered. *Organon*, a work of the third-century-BCE Greek philosopher Aristotle, was already available in Latin translation; it offered Abelard and those who followed him a convenient tool to try to resolve such differences by logical reasoning.

Translation of the rest of Aristotle's writings in the thirteenth century CE enlarged the impact of his philosophy among Parisian teachers, leading them to supplement theology with the study of physics and other subjects Aristotle had written about. But arguments about Christian doctrine remained central. When books became more accessible, a teacher in Paris named Thomas Aquinas (1225–1274) published a book titled *Summa theologiae*, which gives his answers to most of the questions that centuries of debate had raised. It eventually became the official and authoritative repository of Catholic teaching, although Aquinas's views were disputed in his own day, and in 1277, soon after he died, some of them were formally condemned as heretical by teachers of the University of Paris.

Rise of Secularism and Specialization

Disputation and new views on theological and other questions were encouraged within European universities by competition among professors, whose income depended on how many students they attracted. Challenging established ideas was a good way to gain their attention, and doing so kept debate alive for generations, even when popes, rulers, and elderly professors



An old engraving of the grand portal and church of the Sorbonne, part of the University of Paris.

tried to impose uniformity and agreement. Since translations of Aristotle's writings were soon supplemented by the discovery of other pagan texts—literary, historical, as well as philosophical—and since new information about the rest of the contemporary world kept pouring into European cities, the subject matter of university teaching kept expanding as well.

To be sure, there were ups and downs in the intellectual vigor of every university, and many important intellectual developments took place outside their classrooms. Self-styled “humanists” of the Renaissance (mid-fourteenth through seventeenth centuries), for example, seldom worked in universities where sacred texts took precedence; it took a long time for classical literary studies to get access to university lecture halls. Then the Reformation and Counter-Reformation (both in the sixteenth century) imposed a Protestant or Catholic identity after 1517 on every European university, whereupon angry defense of rival doctrines embittered and narrowed university education. Consequently, early modern science flourished mainly within new institutions like the Royal Society of England, founded in 1660, though the English physicist and mathematician Sir Isaac Newton (1642–1727) was a professor at Cambridge University for most of his life. Later, in the eighteenth century, the French

Enlightenment, which consciously repudiated Christianity, arose among a circle of literary men. But in Germany, universities played an active part in the parallel secularization of thought without ceasing to train Protestant and Catholic clergymen.

This dual role was due to the fact that German university education assumed new forms after Frederick III, Elector of Brandenburg, founded the University of Halle in 1694. Its professors abandoned Latin and started to lecture in German. They taught students to seek private contact with God through prayer and to disregard old arguments about theological doctrine. Instead they prepared students for careers as government officials, largely by the study of classical Greek and Roman texts. In short, personal piety supplanted theological disputes, and secular themes and ideas engaged more attention, while geographical exploration and scientific discoveries kept on supplying new information that had to be fitted into older ideas somehow. A generation later, another new university at Göttingen (1737) followed a similar path, broadening emphasis on science and statistics. Other German universities gradually did likewise, capped by the establishment of the University of Berlin in 1809, which became a model not just for Europe but for much of the world across the next century.

Everywhere I go, I'm asked if I think the universities stifle writers. My opinion is that they don't stifle enough of them. There's many a best seller that could have been prevented by a good teacher. • **Flannery O'Connor (1925–1964)**

As Abelard had set the tone and agenda for the University of Paris in the twelfth century, Wilhelm von Humboldt (1767–1835), then serving as minister of education for the Kingdom of Prussia, and himself a student of Basque and other obscure languages, made research and the discovery of new truths the central task for professors at the University of Berlin. They were expected to share their discoveries with undergraduates through lectures, and also to offer seminars to graduate students, showing them how to do specialized research. Within a decade Georg Wilhelm Hegel (1770–1831) was teaching his own personal philosophy at Berlin. It became in effect a substitute for Christianity among his followers. His example provoked other German philosophers to disagree with him, much as the teacher at Paris had disagreed about theological questions centuries before.

Natural sciences, linguistics, history, philology, and Christian theology (soon subjected to the so-called higher criticism) all had their place in Humboldt's university alongside secular philosophy. Specialization prevailed. Each professor and student and each separate discipline was free to go its own way. This, and the notion that teachers ought to prove themselves by doing research and discovering new truths, proved infectious, not only within Europe but in much of the rest of the world, so that in the twenty-first century, thousands of universities aspiring to expand as well as transmit knowledge exist in most countries of the world.

University Education around the World

France and Great Britain had different educational traditions and implanted second-rate replicas of their universities in most of their colonial possessions during the nineteenth and early twentieth centuries. At home they disregarded the German ideal of university-based research at first. They embraced it with variations only after the 1880s, and so did the United States. But Adolf Hitler's Third Reich (1933–1945) demoralized German universities; in the twenty-first century, university-based research, as pioneered

in Germany and subsequently paralleled in the United States, France, Britain, and Japan, does much to shape contemporary science and other disciplines.

Modern universities have also arisen elsewhere, even though each of the world's civilizations had its own established forms of higher education. All of them sought changeless religious truth; yet despite that hope, all adjusted teaching across time to take account of new information and new conditions of society. Europeans did the same, as this article has suggested. But when Europe's wealth, power, and prestige surged suddenly after 1750, due to the Industrial Revolution and associated changes in technology and society, the impact of newly expanded and secularized European practices on older, religiously shaped educational traditions was often disruptive.

Indian higher education was radically Westernized by the English after 1834 when the writer and politician Thomas Macauley organized a new system of education conducted in English and designed along liberal lines. Independent India after World War II made no changes, since its leaders had been schooled to take Western ideas and even the use of the English for granted. In China, age-old Confucianism was officially abandoned in 1905, whereupon European missionary colleges and Chinese-managed universities both began to propagate Western learning. When Communists took power in 1949, efforts to enforce Marxist orthodoxy prevailed until 1976, when new leaders opened the country to the outside world with spectacular economic results and allowed teachers and students limited but widening freedom to study Western learning, with special emphasis on natural science.

Among Muslims, resistance was greater, even though the collapse of the Ottoman Empire in 1918 brought a vehemently secular regime to power in Turkey that imported German professors to create European-style universities. But traditional religious teaching survived in Arab lands and beyond. Even though European administrators after 1920 protected Christian missionary universities in Beirut and Cairo, Western learning had slight impact on most Muslims. When the Arab lands achieved full

independence from European control before and after World War II, resistance to European forms of higher education intensified. Ironically, armies and military schools thereafter became the main bearers of European secular and scientific learning in most Muslim states.

Elsewhere the withdrawal of European empires from Africa and Southeast Asia left recently founded colonial universities behind, and local rulers almost always allowed them to persist. In Latin America, universities date back to the sixteenth century; independence from Spain and Portugal, when it came after 1807, did not change these countries' initial Catholic identity. Since then, most Latin American universities have remained marginal within their own countries and little known abroad.

Everywhere, the fundamental issue remains unresolved between those who seek revealed, unchanging, and authoritative truth and those who are content with what human reason can achieve in the way of truths that are subject to revision whenever new evidence or insights may arise. The question is unlikely ever to disappear. The enlarged scope universities gave to human reason from their inception in medieval Europe was exceptional then, and it remains precarious because so many anxious human beings still desperately seek certainty and salvation. Doubtless they always will. And patterns of higher education will continue to differ among

human societies and change over time, just as they have done hitherto.

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See also Aristotle; Education; Enlightenment, The; Missionaries; Philosophy, Modern; Thomas Aquinas, Saint

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Urban II

(c. 1035–1099)

ROMAN CATHOLIC POPE AND REFORMER

Pope Urban II was a French-born church reformer and summoner of the First Crusade that recaptured Jerusalem in 1099. He is considered to be one of the most influential popes—in the history of the Roman Catholic Church and in European history as well.

Otho of Lagery (also known as Otto, Odo, or Eudes), who would later become Pope Urban II, was born in France in 1035. He studied at Reims under Bruno of Hartenfaust, who would later found the Carthusian Order and be canonized as St. Bruno. After retirement at Cluny, Otho was sent to Rome to aid Pope Gregory VII in his efforts to reform the church and eventually became the pope's chief adviser. During his years in various church positions, Otho filled numerous vacant church offices with clerics faithful to Pope Gregory VII and removed those whom the pontiff had condemned. Otho became one of the most prominent and active supporters of the Gregorian reforms, especially during his term as legate in Germany. Otho was also among the select few whom Gregory VII had previously nominated as possible successors.

At a conference of Gregorian bishops at Terracina in 1088, Otho was elected pope to replace the recently deceased Victor III. After his election, Otho chose the papal name of Urban II. From the outset of his papacy, Urban II adhered to the reform efforts of Gregory VII and publicly declared his intention of following the policies set forth by his predecessor. In the same manner as his mentor, Gregory VII, Urban II was met with a storm of opposition. He was opposed

not only by laymen but by the clergy, especially by the bishops. The pope would also have been distracted by battles against the Holy Roman Emperor Henry IV and his imperial pope Clement III over whether the imperial or the papal power was to be supreme in Christian Europe. Still in the midst of the Investiture Controversy, Urban II was unable to enter Rome until 1093 due to the presence of the antipope Clement III (Guibert of Ravenna) and the actions of the Holy Roman Emperor Henry IV.

Urban II utilized the conciliar method of church leadership, holding significant councils at Piacenza (1095), Clermont (1095), Rome (1097), Bari (1098), and Rome (1099). At Piacenza the pope approached the subject of the Crusades, after receiving a request for assistance from the Eastern Emperor, Alexius I. The more important council was that at Clermont, where Urban II began by reiterating the decrees of Gregory VII against simony, investiture, and clerical marriage. The matter of Constantinople and Jerusalem was also discussed, and a decision was made to send an army to rescue Jerusalem and the Catholic churches in the East from the Muslim Turks. In his sermon at Clermont, Urban II concluded his remarks with the phrase "*Deus vult!*" (God wills it!). This slogan would later become the battle cry of the crusader.

Urban II's initiation of the crusade movement is significant in world history. The various crusades provided the mechanisms for reopening the trade routes that united the civilizations of Europe and the East. Through these routes many things flowed: paper, the compass, medicines, spices, crops, cultural advances, and gunpowder. The First Crusade

was successful in that Jerusalem fell to the crusaders in 1099. Urban II died on 29 July 1099, fourteen days after the recapture of Jerusalem by the Christian crusaders. Ironically, the pope's death occurred before news of the event had reached Italy.

Although the First Crusade was a military success, some of the consequences were not anticipated by the Byzantine emperor, Alexus I. Instead of restoring Byzantine territories to eastern Catholic rule, the Roman Catholic conquerors established four independent Latin kingdoms. In addition, the Hospitallers, Templars, and Teutonic Knights came into power as religious military orders, with the stated purpose of protecting the pilgrims and holy sites.

The remains of Urban II were interred in the crypt of St. Peter's, close to the tomb of Adrian I. Clearly, without the efforts of Urban II, most of the Gregorian

reforms would not have succeeded. Urban II was beatified by Pope Leo XIII in 1881.

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See also Crusades, The; Gregory VII; Roman Catholicism

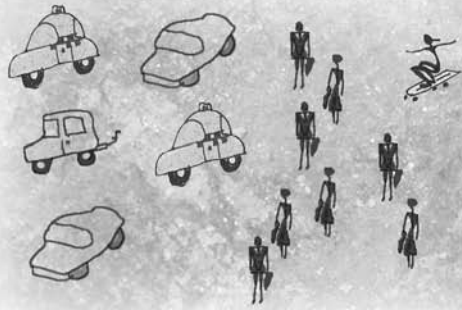
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Urbanization

The term *urbanization* describes how cities—from as long as 5,000 years ago and in widely separated regions—grew in number, and how their populations increased and become dense. Growing cities stimulated changes that fostered new migrations and diffusions—and ever more cities.

Urbanization is a process of population concentration. It involves not merely the increasing numbers, size, and density of urban settlements; it is the source of the new opportunities, attitudes, and lifestyles that transform entire societies as they diffuse to smaller places and rural regions and stimulate the streams of migration that produce further rounds of urban growth. Thus urbanization is the vital engine of economic development and cultural change.

Classical Beginnings

Urbanization had several independent beginnings. Primary urban generation occurred in a number of areas widely separated in both time and space: lower Mesopotamia at least 5,000 years ago, the Indus valley 4,500 years ago, the North China plain at least 3,000 years ago, Mesoamerica more than 2,500 years ago, the central Andes and Peruvian coast 2,000 years ago (although recent evidence places the age of the pyramids at Caral at 4,600 years), and the Yoruba territories in West Africa and incipiently in Zimbabwe 500 years ago. Diffusion from already-urbanized societies also stimulated the rise of cities in a number of other areas: Korea and Japan, the Indian Deccan, southwest Asia and the eastern Mediterranean, and the western Mediterranean and Europe. Whether

or not the megalithic complexes of Atlantic Europe served as population concentration nuclei or were freestanding ceremonial sites four and five millennia ago is still a matter of debate.

The characteristic sequence of cultural evolution began with domestication of plants and animals and the emergence of class-based societies, followed by the formation of military and religious elites who gathered clans into states and used their power to extract surpluses from village agriculturalists. In such states there developed hierarchies of specialized institutions that exercised authority over territory and maintained order within their populations. At the core of these states were monumental complexes, the focal points around which capital cities evolved and the *axes mundi* at which leaders could maintain contact with the gods. Frequently, both the ceremonial complexes and the cities that surrounded them were designed as miniatures of the cosmos, in which the appropriate rituals could be performed to ensure that stability and harmony prevailed. Astronomy thus was important not merely for timekeeping and the regulation of the rhythms of agriculture; it was central to the physical plans. The social geography of the cities was predominantly centripetal: the higher the status, the closer a resident lived to the center, but the urban fabric also contained walled “quarters” that separated tribe and clan. The specialists who first emerged as temple and palace functionaries later evolved into producers for the market. Similarly, the merchants who conducted long-distance trade evolved from the networks of tribute that had been secured by military action.

Most classical capital cities were small and compact, yet they were many times greater than other settlements in their domains. Levels of urbanization—the



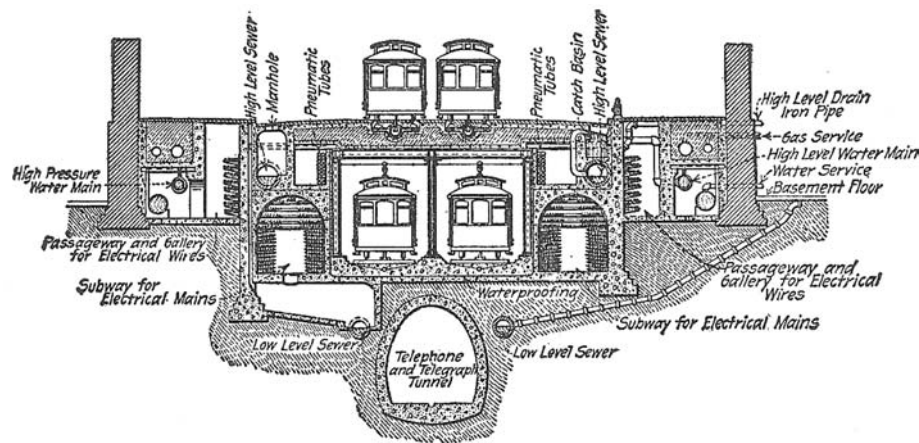
percentage of the population living in urban areas—never exceeded 10 percent. Secondary centers were few and small and the bulk of the urban population clustered in the capital city. This pattern of capital city primacy prevailed until very recently. Only three hundred years ago there were probably no more than fourteen cities in the world with populations exceeding 200,000 (in imperial China, Beijing 650,000, Hangzhou 300,000, Guangzhou 200,000; in feudal Japan, Tokyo [earlier Edo or Yedo] 680,000, Osaka 380,000, and Kyoto 350,000; in the Moghul Empire, Ahmadabad 380,000 and Aurangabad 200,000; in Iran [then Persia], Esfahan 350,000; in the Ottoman Empire, Istanbul [then Constantinople] 700,000; and in Europe, London and Paris both over 500,000 and Amsterdam and Naples both just over 200,000). No more than fifty other cities exceeded 50,000.

Despite their small size, however, each of these capital cities served as the focus of its own “world economy,” an economically autonomous section of the planet able to provide for most of its own needs. Such economies comprised an immediate *core region* that provided foodstuffs and within which modification of the earth was greatest, a modestly developed *middle zone* controlled by the projection of the capital city’s military power and exploited for transportable resources and products, and a vast and relatively

untouched *periphery* that ensured separation from other worlds, except where long-distance merchants made contact at trading centers located where the peripheries touched.

The First Break

The first break with classical urban patterns that raised the level of urbanization above 10 percent came in the Low Countries of Europe in the seventeenth century. Exploiting new maritime technology—deep-bellied cargo vessels that significantly changed seagoing goods-carrying capacity and costs—a mercantile center, Amsterdam, became the warehouse of the world. In the United Provinces, the middle zone of what later became the Netherlands, urbanization levels rose to more than 30 percent, and a high degree of market-based specialization in cash crops developed for urban consumers and industrial markets. The closer to Amsterdam, greater was the degree of cash-crop specialization and greater the extent of environmental modification. The further from the United Provinces, the more likely it was that regions were still composed of self-sustaining feudal villages. As urban demands increased, ingenious methods of crop rotation were developed to raise productivity and new technologies enabled cultivable polders to be



Underground railroads, or subways, have proven to be an efficient means of transportation in crowded cities. This diagram is a cross-section of the Chicago subway system in the early twentieth century.

created by draining swampland. As important, a new spirit of middle-class Protestantism linked to capitalism was fostered, carrying with it ideas of humans' dominion over nature and the godliness of engaging in production and trade for profit.

The Second Break

Change in the Low Countries was followed by a second break in eighteenth-century Britain as that country's navy and trading companies helped build a global empire and a new class of merchant entrepreneurs emerged. The English share of European urban growth had been 33 percent in the seventeenth century, but was over 70 percent in the eighteenth century, much of it concentrated in London, by now Europe's largest city. London's demand for food radically changed the agricultures of the English core. Dutch engineers were enlisted to bring their technologies to England and facilitated the drainage and settlement of the East Anglian Fens while the import of the "Belgian system" of crop rotation made possible the cultivation of the nation's sandy wastelands. The great city's demand for fuel led to rapid expansion of coal mining and coastal shipping. Britain's urbanization level reached 30 percent by 1800, but in the rest of the world there was little change from 1700. The number of cities with populations greater than 500,000 increased only from five to six and the number of places exceeding 100,000 from thirty-five to fifty. Within the European nations' expanding colonial empires predominantly rural societies were controlled from small numbers of modestly sized coastal centers that were organized around their ports, docks, and warehouses.

Enter Industrialization

By 1800, the new forces that were at work were to radically rewrite the world map of urbanization. In Britain, urban growth was already accelerating outside London, with the main burst of expansion in Manchester, Liverpool, Birmingham, and Glasgow, plus a second echelon of urban areas in the 20,000-to-50,000 range that included Leeds, Sheffield, Newcastle, Stoke, and Wolverhampton. The precipitating factors were technological advances in the cotton and iron industries, the first flush of factory building, and significant improvements in inland transportation with the construction of a canal network. The new urban centers were either mill towns in which the workers resided within walking distance of the factory, specialized manufacturing cities such as Birmingham, or centers of control and finance like Manchester. Demand for labor was fed by rural-to-urban migration as feudal villages were reshaped by enclosures that released surplus labor to the towns.

Subsequent bursts of technological change built on this first surge of industrial revolution to create a new kind of city that was built on productive power, massed population, and industrial technology. By the end of the century, this new city has been credited with the creation of a system of social life founded on entirely new principles. By 1900, the level of urbanization had reached 80 percent in Britain, exceeded 60 percent in the Netherlands and newly industrializing Germany, reached 50 percent in the United States, and climbed to 45 percent in France. Sixteen cities now exceeded 1 million in population, there

All cities are mad: but the madness is gallant. All cities are beautiful: but the beauty is grim. • **Christopher Morley (1890–1957)**

were 287 exceeding 100,000, and the world economy had been reshaped around the great urban-industrial core regions of western Europe and the northeastern United States.

Contemporary observers recognized that something dramatic had happened. Adna Weber, the chronicler of the changes, wrote in 1899 that the most remarkable social phenomenon of the nineteenth century was the concentration of population in cities. The tendency toward concentration, he said, was all but universal in the Western world. The change involved a process whereby, as societies modernized, their market mechanisms expanded in scope and influence. The size of production units increased, as did the number and complexity of production decisions. Increased division of labor and increased specialization, the necessary concomitants of increased productivity, became forces promoting further population concentration and the shift in the occupational structure of economies from agriculture and resource extraction to factory-floor jobs and white-collar occupations. New institutions were created and old institutions were radically altered, especially the financial and market institutions that contributed to the accumulation of social and economic overhead that made further high-level productivity increases in cities possible. There were widening radii of global change as demands for food and raw materials increased and as environments were modified by the unrestricted discharge of effluents, but because of the limitations of foot and horse, the new cities grew, as H. G. Wells put it in 1902, as “puff-ball swells”—dense concentrations within a limited radius of their central business districts. The combination of size, high density, and immigrant-derived heterogeneity had distinctive social consequences: greater individual freedoms and opportunities for social and economic advancement, but also inequality, alienation, and deviance.

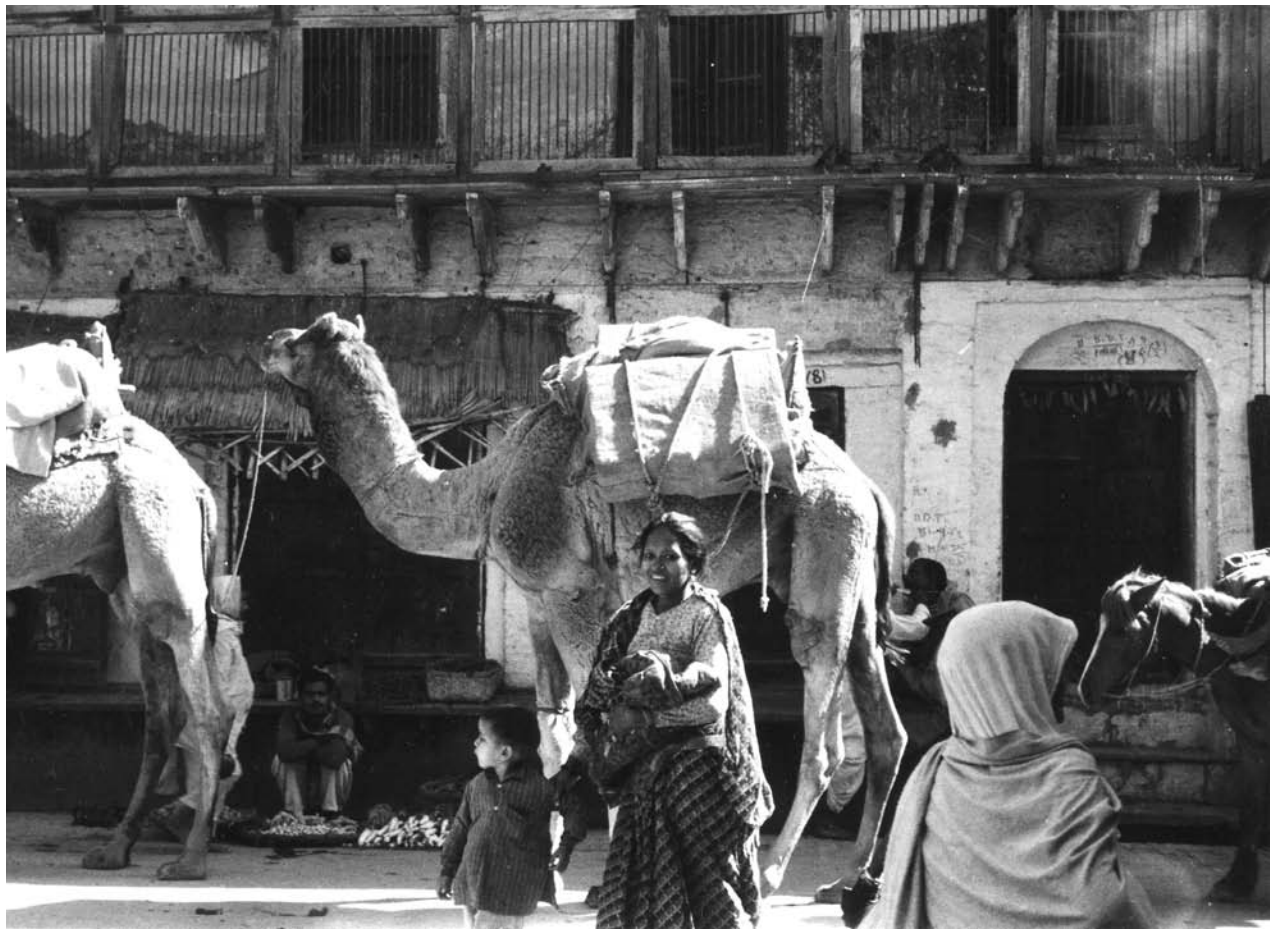
Twentieth-Century Urban Growth

During the twentieth century, the urbanization level in economically advanced nations leveled off at 80 to

90 percent but rapid urban growth diffused to most other parts of the world. By 2000, half the world’s population lived in urban areas and virtually all population growth was occurring there as rural-to-urban migration accelerated in countries beginning their process of modernization. More than eight hundred cities had populations in excess of 500,000. Of these, some four hundred exceeded 1 million, of the “millionaire” cities forty exceeded 5 million, and sixteen of these had populations of 10 million or more.

The leveling off of urbanization in the economically advanced world did not mean stasis. New technologies transformed the spatial pattern of urban growth and created new types of transnational urban networks. The concentrated industrial metropolis had developed in the nineteenth century because centrality meant lower costs for specialists who had to interact under horse-and-buggy conditions. But shortened distances meant higher densities, increased costs of congestion, high rents, loss of privacy, and mounting social problems. Virtually all the transportation and communication developments of the twentieth century had the effect of counteracting the constraints of geographic space, making it possible for each generation to live farther apart and for information users to rely upon information sources that are spatially distant. As a result decentralization moved to the fore as the dominant spatial process restructuring urban regions, producing far-flung metropolitan areas and the emptying out of the higher-density cores: commuting radii extended more than 160 kilometers from traditional urban centers and in the most densely settled areas, overlapping urban systems combined to create polycentric “megapolitan areas.” Globally the interdependencies made possible by revolutionary new information technologies enabled increasingly specialized urban areas to link up in networks dominated by “world cities” such as New York, London, and Tokyo—centers of finance and corporate control.

In middle- and low-income countries, freed of colonial controls, the rush to the cities began in the 1960s and accelerated through the end of the century. The combination of low income and inadequate



A street scene in modern-day Mathura, India (population over 2 billion). In ancient times the city was an economic hub located at the junction of important trade routes. Photo by Klaus Klostermaier.

transportation resulted in a repetition of the West's nineteenth-century experience of mounting social problems, even as the new cities became the loci of social and economic transformation. But the difference in scale is notable. Much of the change occurred in significantly larger places. Of a total world urban population of 2.86 billion in 2000, 75 percent resided in developing-world cities. The new population concentrations included two-thirds of the world's 10-million-plus population megacities.

Outlook for the Future

According to *Demographia* (2010) populations and projections listing, the world's ten largest populated urban areas as of July 2010 are: Toyko-Yokchama, Japan (35,200,000); Jakarta, Indonesia (22,000,000); Mumbai, MAH, India (21,255,000); Manila, Philippines (20,795,000); New York City (including

Bridgeport, Danbury and New Haven in Connecticut, and Trenton and Hightstown in New Jersey, 20,610,000); Sao Paulo, Brazil (including Francisco Morato, 20,180,000); Seoul-Incheon, Korea (including Suwon and Ansan, 19,910,000); Mexico City, Mexico (18,690,000); and Shanghai, SHG, China (18,400,000). The United Nations projects that by 2030, 83 percent of the world's 5 billion urbanites will reside in middle- and low-income countries in dense urban networks dominated by twenty-five to thirty megacities. We have yet to learn what the consequences will be, but they will surely be no less radical than those of the nineteenth and twentieth centuries.

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See also Migrations—Overview; Cities

The car has become the carapace, the protective and aggressive shell, of urban and suburban man. • **Marshall McLuhan (1911–1980)**

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Utopia

Although utopias and utopianism are associated with modern Western political literature and social movements that describe a place in which the ideal has become real, they exist in many cultures throughout world history and might be typically categorized as literary, philosophical, or historical.

The word *utopia*, coined by Thomas More (1478–1535) in his political fantasy of the same name, literally means “nowhere” (from the Greek *ou* = no, *topos* = place)—which of course raises the question of whether More believed such a place could even exist—but has come to be applied to any fictional or actual community based on social and political idealism. Utopias have been portrayed in literature and in philosophical treatises, and humans have experimented in creating them throughout history.

Literary Utopias

A frequently documented fantasy in both folk and formal literatures of many different cultures across world history is that of the ideal world in which there is comfort, ease, and plenty for all. Greeks such as Hesiod (c. 800 BCE) and Romans including Virgil (70–19 BCE) and Ovid (43 BCE–?CE) imagined an early stage in human history (the golden age) in which people and gods lived together in harmony. Virgil imagined peasants in Arcadia enjoying effortless agrarian work resulting in nature’s bounty. The Hebrew scriptures’ book of Genesis begins with a similar original golden age in the Garden of Eden,

which most modern readers interpret symbolically but which was considered very real by medieval and Renaissance Christians who speculated about its location.

Idealized lands and kingdoms preoccupied the medieval mind. The Land of Cockaigne was a folk fantasy of a peasant’s paradise—and was also immortalized in a painting by Pieter Brueghel the Elder in 1567—into which the aristocrats or wealthy clergy would not be admitted. The Land of Prester John, documented in the travel narratives of Marco Polo (1254–1324) and John Mandeville (flourished 1356), was a product of the medieval fascination with distant lands. It is surrounded by pagan nations but ruled by a benign priest-king (so it has much in common with the philosophical utopias of Judaism and Christianity).

Philosophical Utopias

Theorizing about the ideal human community has an ancient and diverse ancestry. In *The Republic*, Plato (c. 428 BCE–348? BCE) discussed the necessity for virtuous philosopher kings to rule over virtuous citizens. In *Critias* and in his obscure work *Timaeus*, Plato introduced the world to the legend of Atlantis, a staple of utopian literature even today. The *Analects* of Confucius (551 BCE–479 BCE) collects the Chinese philosopher’s teachings about the right order of society in which the ruler’s and the people’s virtue ensure stability and prosperity.

Judaism, Christianity, and Islam share common traditions relating to an ideal social order. The Torah describes a promised land flowing with milk

The avowed aim of all utopian movements is to put an end to history and to establish a final and permanent calm. • **Ludwig Von Mises (1881–1973)**

and honey, and the prophetic literature of Judaism imagines a messianic kingdom ruled over by a virtuous, priestly king who takes care of the poor and dispenses justice. Christian scriptures similarly imagine a community of believers united under the messianic leadership of Christ. The Muslim Qur'an also describes an ideal social order uniting people of faith, as well as a future paradise for the just and virtuous.

During the European Renaissance, many writers examined the conditions and institutions that would produce an ideal society. Some of these texts would become the template for new experiments in communal living. The most famous of these, of course, is Thomas More's *Utopia* (1516), a fictional account of a traveler who has returned to Europe after having visited an island commonwealth where land is held in common, both men and women are educated, and there is religious tolerance. Tommaso Campanella (1568–1639) combined revolutionary and scholarly insights to write his utopian visions. His *Monarchia messiae* (Anointed King) proposes the establishment of one world ruler and one world religion. *Citta del sole* (City of the Sun) suggests that the head of the ideal city would be a priest-king, like that of the Land of Prester John. Drawing on Plato's *Timaeus* as well as More's *Utopia*, Francis Bacon (1561–1626) imagined an ideal society in *New Atlantis*; its capital, Bensalem, is organized around scientific study and its rulers are scientist-kings.

Historical Utopias

Actual communities based on the principles spelled out in the literary or philosophical utopian traditions have often been attempted. Rarely outliving their visionary founders, utopian communities nonetheless introduce innovations into mainstream societies.

European colonization of the Americas was accompanied by utopian schemes that tried to implement what visionary texts merely described. English settlements in North America, in particular, imagined

themselves as the “new Israel,” or the “new Chosen People.” Puritan Separatists (such as the Pilgrims of Plymouth Plantation) established a theocratic community, which they tried to keep pure by exiling their more wayward members, among whom were those who settled Rhode Island as a refuge for religious dissenters. Similarly, Pennsylvania as a haven for European dissenters and Maryland as a Catholic enclave endorsed the principle of religious freedom that characterized More's *Utopia*. The seventeenth-century English revolution, resulting in a short-lived republic, spawned even more radical social experiments, such as the communistic Diggers and Levelers. The American Revolution may have been a rationalist project (like its protégé in France), but the early Republic became a laboratory for a variety of religious and secular utopian experiments.

If the eighteenth-century American and French revolutions institutionalized political utopianism, the nineteenth century bred its most diverse intellectuals and practitioners. While some of these were religious, like the Mormons and the Shakers, many were secular, like the American Brook Farm Community (the object of Nathaniel Hawthorne's 1852 satire, *The Blithedale Romance*), William Morris's Arts and Crafts movement and the Fabian Socialists in England, and the French utopian socialists Comte de Saint-Simon (1760–1825), Charles Fourier (1772–1837), and Pierre-Joseph Proudhon (1809–1865).

Preeminent among the intellectuals was Karl Marx (1818–1883), who towered above the age both for the extent of his social, historical, and economic analyses and for the breadth of his influence well into the twentieth century. Ironically, the nineteenth-century industrial societies that Marx imagined to be the most fertile ground for his ideas did not produce the kind of revolution he predicted, which occurred instead in agrarian countries like Russia, China, Korea, Vietnam, Cambodia, and Cuba in the twentieth century. Moreover, by developing Leninist and Stalinist models of government, the totalitarian regimes that succeeded these revolutions (and their fascist counterparts in Spain,



Germany, and Italy) encouraged the creation of a “dystopian” literature, including Aldous Huxley’s *Brave New World* (1932) and George Orwell’s *1984* (1949).

Future Prospects

Despite a history of spectacular failures of utopian schemes in the twentieth century, the twenty-first century is likely to continue to witness two forms of utopianism: small-scale intentional communities and large-scale religious utopianism. In the West small, local, intentional communities of like-minded people will persist as a way to resist the values and structures of mass culture, mass economics, and mass politics. Mass culture often makes utopian claims based on its technological advancements, which are driven by consumer capitalism. *Atlantis*, for example, is no longer a Platonic prototype of utopia but a vacation resort in the Bahamas. Similarly, the Western proliferation of the Internet has frequently idealized “cybertopia” with claims of the Internet’s power to transform society, politics, education, and the economy. Digital communism, the notion that digital intellectual property should not be privately owned, will continue to confront digital capitalism. Although the dominant large-scale utopian ideologies of the twentieth century were secular, in the developing world the twenty-first century is likely to witness more frequent attempts to establish utopian theocracies founded on religious principles. Throughout the latter twentieth century, Islamic movements in particular demonstrated a growing disenchantment with the utopian claims of Western democratic capitalism and Communist socialism. The Iranian revolution that overthrew the country’s shah in 1979 and the Taliban’s resistance to the Soviet presence in Afghanistan put into power Islamic republics whose laws were said to reflect the Qur’an and Muslim law, or sharia. The terrorist entity al-Qaeda might be more coherently understood as a militant movement following a utopian ideal. A continuing phenomenon of revivalism in the world’s largest religious

communities (Christianity, Hinduism, and Islam) preaches to audiences who are receptive to a message of clarity and hope (in exchange for obedience). Historically each of these religions has attempted to imagine and to affect a more perfect world. Whether they will do so without coercion or violence remains to be seen.

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See also Confucius; Millennialism; Plato; Renaissance

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At the age of eighteen Victoria ascended to the throne after the death of her grandfather, George III. She ruled Great Britain and Ireland until her own death in 1901. Victoria found her niche as a warrior queen during the Crimean War (1854–1856); she remained devoted to the British troops and became the symbol of expanding empire for the remainder of her reign.

Victoria reigned as queen of Great Britain and Ireland from 1837 until her death. Her empire grew to be the world's largest, including at its height 25 percent of the Earth's population. In 1877 parliament conferred on her the title Empress of India. Her nine children married royalty and she became grandmother to European royalty.

Victoria was born to Edward, Duke of Kent, the fourth son of George III, and Victoria, a widowed German princess of Saxe-Coburg. Her parents intended to produce an heir in an effort to have parliament make good her father's debts. After her father died before Victoria was a year old, her mother raised her

strictly in preparation for her inheritance. William IV, Victoria's uncle—her father's older brother—produced no legitimate heirs and so with her father's death Victoria was next in line. Victoria slept in her mother's bedroom until she ascended to the throne. Victoria immediately asserted herself by sleeping alone and by dispensing with her mother's comptroller, who had exploited his position. Estrangement from her mother left the eighteen-year-old queen under the tutelage of her prime minister, Lord Melbourne, who instilled in his charge a strong, unquestioned sense of her central role in politics.

In 1840 she married her first cousin, Prince Albert of Saxe-Coburg-Gotha. Excluding him from governing at first, she came to worship Albert and gradually made him de facto co-regent.

Between 1840 and 1857, they produced Victoria, Edward, Alice, Alfred, Helena, Louise, Arthur, Leopold, and Beatrice; they made every effort to create a model family, teaching duty, hard work, chastity, and sobriety. The family moved among homes at Windsor Castle, Balmoral in Scotland's Highlands, and a new house designed by Albert on the Isle of Wight (Osborne). Named prince consort by his wife in 1857, Albert along with Victoria played a key role in the confused coalitions that governed after Robert Peel destroyed the Tory



Baron Heinrich von Angeli, *Portrait of Queen Victoria* (1877). Oil on panel. Parliament named the queen "Empress of India" the year the baron painted this portrait.

The important thing is not what they think of me. But what I think of them. • **Queen Victoria (1819–1901)**



Franz Xaver Winterhalter, *Queen Victoria [center] and Prince Albert with the Family of King Louis Philippe at the Chateau d'Eu, 1845*. Oil on canvas.

Party to give Britain free trade. Victoria found her preferred role as a warrior queen during the Crimean War (1854–1856), seeing off the troops, visiting the wounded, and establishing the Victoria Cross for bravery in 1856.

Albert died of typhoid in 1861, leaving Victoria distraught and causing her to withdraw from public appearances—except to review her troops. She built memorials to Albert and had servants lay out a fresh suit of clothes in his room each evening for forty years.

In private she allowed John Brown, Albert's Scottish servant, to serve as her comfort until his death. The Conservative prime minister, Benjamin Disraeli, wooed the queen from her grieving isolation and restored her popularity by making her the symbol of the British Empire. Supplying her with political gossip and cabinet secrets, he converted her into an ardent, partisan Conservative. She despised William E. Gladstone, leader of the Liberal Party, and his plan to give Ireland home rule. She exhibited dismay when Gladstone's



government failed to rescue “Chinese” Charles Gordon from Khartoum and approved heartily when General Horatio Herbert Kitchener defeated the Mahdists at Omdurman, Sudan, in 1898. Once she possessed a territory, she never wanted to part with it, believing that any people profited from her rule.

In 1887 Victoria celebrated her golden jubilee as a European monarch with relatives and rulers from across Europe parading through London’s streets dressed in elaborate military uniforms. Victoria excluded the heads of Europe from her diamond jubilee in 1897 to invite the rulers of her dominions and colonies, turning the ceremony into a celebration of the empire’s diversity and might. But the Boer War clouded her final years. Her grandson, William II, Emperor of Germany, favored her enemy and the conflict strained the resources of the empire.

Victoria adopted an Indian Muslim servant, Abdul Karim, as her favorite, demonstrating her “liberal” views on religion and “race.” Though she personally preferred the Scottish Presbyterian service, Victoria constantly strove for tolerance. She valued her relations with all her subjects, caring deeply for her servants and comforting widows of all classes. She displayed a feel for the public mind. Although she considered herself a constitutional monarch and favored free trade, she had her prime ministers write her each day reporting all significant affairs and never

hesitated to intervene when she felt it necessary. She named the Liberal Lord Rosebery prime minister in 1894 because he was a safe imperialist. She influenced the appointment of cabinet ministers and sometimes conspired to elect Conservatives. Though she gave her name to an era popularly known for its prudishness, she forgave drunkenness and other human foibles in those whom she loved. When she died at Osborne in 1901, the world recognized it was the end of an era.

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See also British Empire

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Viking Society

The word *Viking* derives from the Old Norse word *vik*, meaning “inlet,” probably a reference to the Vikings’ habit of using bays, sounds, and fjords—ubiquitous along the Scandinavian coasts—as places from which to stage attacks on seagoing vessels. Through three centuries of sustained military and mercantile endeavors, the Vikings played a significant role in the diffusion of Norse culture throughout Europe.

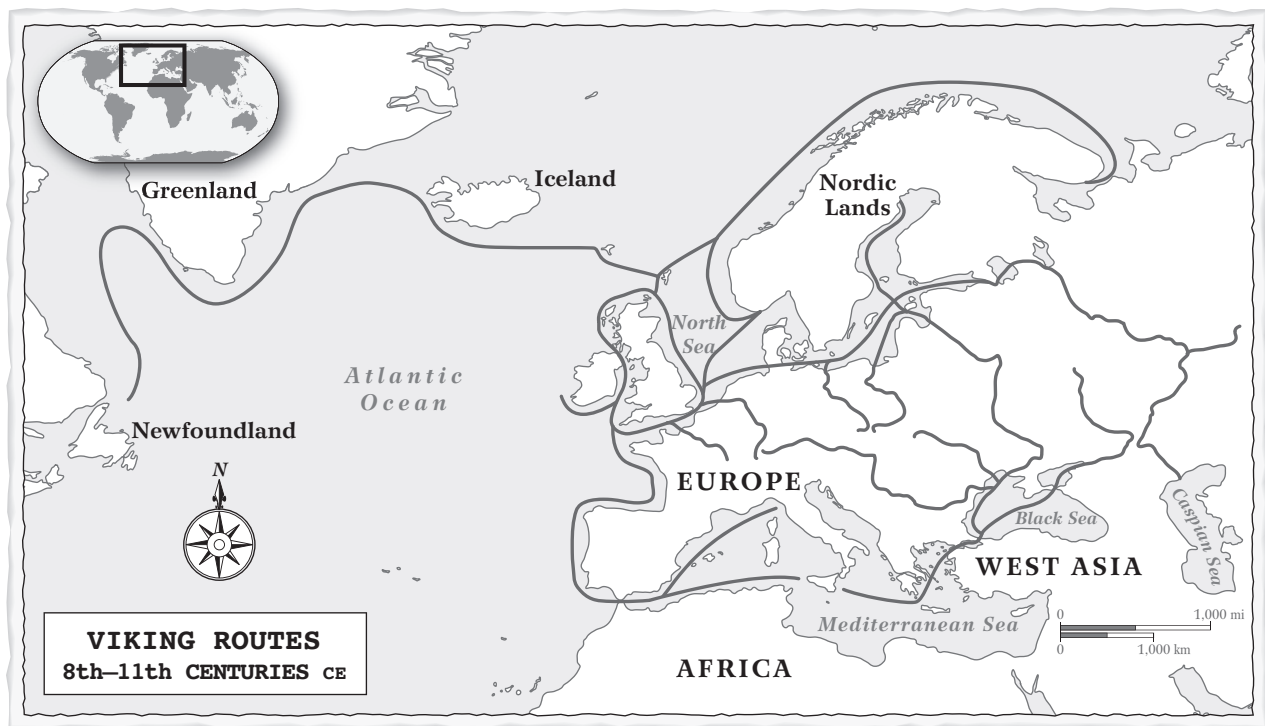
The Vikings appeared on history’s stage during the eighth century CE. In 793 CE a group of Viking marauders from Scandinavia besieged, captured, looted, and destroyed a Christian monastery on Lindisfarne, a small island located just off the northeastern coast of England. This was the first in a long series of military incursions made by seafaring Scandinavian warriors. During the next two centuries their quest for land and wealth would take them as far west as Ireland, Iceland, Greenland, and the northern tip of the New World. They would make their presence known along the Atlantic coasts of France, Portugal, and Spain. They would also penetrate the interior of Europe via its network of rivers, eventually reaching both Baghdad (Iraq) and Constantinople (Istanbul, Turkey). Paris, York, and Dublin would experience their fury. They would also establish footholds at Novgorod and Kiev in Russia.

Scholars do not know with any degree of certainty what elicited this wave of conflict. But like other popular migrations that have taken place throughout history, such as those that occurred in the Mediterranean basin during the twelfth century BCE and in Europe during the fifth century CE, a common stimulus tends to be a gradual (or radical) shift in weather patterns

that alters the cycle of subsistence. Consequently, scholars have postulated that a significant climatic change in northern Europe produced warmer temperatures, caused glacial recession, and led to two significant environmental anomalies—one biological, the other social. The first was a decrease in the rate of infant mortality, accompanied no doubt by a rise in the male birth rate. The second was a burgeoning population of young males who could neither be assimilated fully into economic life nor provided with sufficient means for survival given prevailing inheritance customs. This perceived lack of resources perhaps fostered an atmosphere of desperation that propelled the Vikings into Europe and the Atlantic in pursuit of conquest and profit. The derivation of the word *Viking* is the Old Norse word *vik*, meaning “inlet.” Thus, the name probably refers to the Vikings’



The Oseberg (*Osebergskipet* in Norwegian), a Viking ship circa 800 CE, was discovered in a large burial mound at the Oseberg farm near Tønsberg in Vestfold County, Norway, 1904–1905.



penchant for using bays, sounds, and fjords—ubiquitous along the Scandinavian coasts—as places from which to stage attacks on seagoing vessels.

Feared for their martial prowess, Viking warriors were equally adroit in military operations on sea and land. They mastered the construction and sailing of the longship, a durable vessel that could reach a maximum speed of 18.5 kilometers per hour and traverse 200 kilometers in a typical day. It was of inestimable value to the Vikings, given the quick-strike surprise tactics that were one of the cornerstones of their military strategy. In ground combat the Vikings employed an impressive array of weapons, including swords, spears, javelins, battle-axes, knives, bows, arrows, shields, and body armor. The average height of a Viking warrior was 1.72 meter, roughly .07 meter taller than most European males whom they would encounter on the battlefield. This physical advantage, along with their skill in psychological warfare, made them a formidable force with which few could reckon. They had even their own cadre of elite military personnel—the Berserkers. Named for their unique attire (bear skins), these operatives

appear to have used shamanic techniques to alter their normal state of consciousness in preparation for combat. Byzantine rulers recognized the prowess of Norse (Viking) warriors and utilized their services in the Varangian Guard, a select unit that provided protection for the emperor.

Religion

Viking warriors had a particularly strong religious attachment to the Norse god Odin, known popularly as the “Father of Victories.” Those warriors who lost their lives in battle expected to be ushered by divine escorts, the Valkyries, to Valhalla, Odin’s palatial hall in the divine land of Asgard. Here they would feast and continue to train for the ultimate battle, called “Ragnarok,” in which the entirety of the cosmos along with its divine and human inhabitants would be destroyed. This final cataclysm would lead to the generation of a new universe, which would be repopulated by a remnant of gods and humans. Odin was considered the patron of war, poetry, and the *futhark*—the runic alphabet. Norse myth records



A Viking tower in the midst of celtic cross markers in a Burren, Ireland, cemetery.

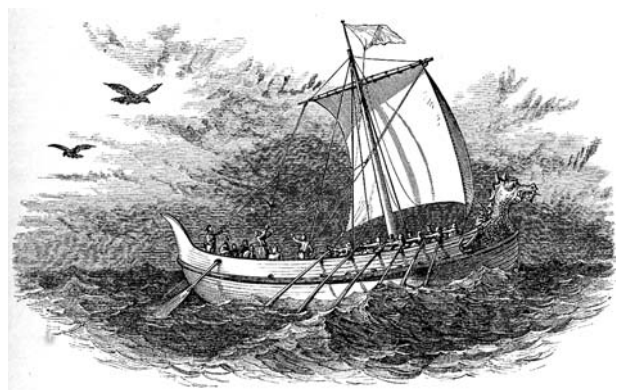
that he obtained the runes (characters of the alphabet) after being hung upside down on *yggdrasil*—the “world tree”—for nine days.

The Norse pantheon consisted of two divine families: the Aesir and the Vanir. The former was made up of the gods living in Asgard. In addition to Odin, these gods included Thor, god of thunder and wielder of the divine hammer Mjollnir; Loki, the divine trickster; and Heimdall, guardian of Bifrost, the bridge leading to the celestial abode of the Aesir. The Vanir lived in the sacred land of Vanaheim and consisted of deities closely associated with the world of nature. The most important of these were Njord, god of wind and sea; Freyja, goddess of love and fertility; and Freyr, twin brother of Freyja and god of sun and rain. In general, the Vikings believed themselves to inhabit a world suffused with the numinous (supernatural) and to be intimately linked with an assortment of spiritual

entities. With the embrace of Christianity, this older stratum of belief would not be eclipsed. It would live on in the popular imagination and the development of syncretistic (relating to the combination of different forms of belief or practice) traditions in religion and the arts.

Mythology

The peoples of northern Europe had a fondness for poetry and an appreciation for its evocative power. Poetry was a particularly effective vehicle for preserving and passing on their myths, epics, and legends. The mythology that helped to shape the social world of the Vikings contained a rich assortment of stories dealing with creation, the exploits of their gods, and the culmination of history. Two thirteenth-century sources provide the context and background necessary for understanding these stories. Together they open a window onto the world of Norse imagination. The first is Saxo Grammaticus’s *History of the Danes* (c. 1215 CE), written from a distinctly Christian perspective. The second is the *Prose Edda* (c. 1220 CE), written by Snorri Sturlson, an Icelandic poet. Viking achievements in the utilitarian and decorative arts were also significant. The former category included their manufacture and embellishment of weaponry (e.g., ships, swords, axes, and shields), utensils (e.g., vessels for drinking), and musical instruments. The



An idealized drawing of a Viking ship on a voyage of discovery to Iceland.



latter category included jewelry such as pins, necklaces, and bracelets. Wood, textiles, stone, and metal were the preferred artistic media.

The Vikings left an indelible mark on Western civilization. Through three centuries of sustained military and mercantile endeavors, they played a significant role in the diffusion of Norse culture throughout Europe. This cultural legacy continues to flourish; some of its ancient lore and rituals having been reclaimed today by religious seekers who use it to fashion neopagan spiritualities. Other elements native to it have long been part of popular Christian practice (e.g., the Christmas tree, which may be a cultural reflex of the Norse *yggdrasil*). Deep resonances between Norse eschatological conceptions (those relating to the final events in the history of the world)

and those of both Christian theology and scientific cosmology promise to make Viking society a source of fascination in the twenty-first century as research into global conceptions of cosmic and human origins continues.

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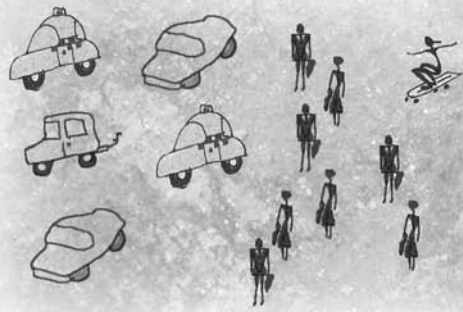
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Villages

Villages formed in Asia about 11,000 years ago when humans first adopted agriculture. These “primary communities” have since fostered social, technological, and economic interactions, cultural continuity, and stable child rearing. But increasing urbanization led to the demise of the village. Long-term human survival probably requires that stronger and more village-like communities take root in our cities to nurture growing populations.

Human beings are social. This means a life worth living requires individuals to interact continually with those around them and weave a web of shared meanings and shared feelings that shape and guide each person’s behavior from earliest infancy. Through most of recorded history, and until the twentieth century, villages were the principal place where this human social need was met. The vast majority of our ancestors lived in villages and worked in nearby fields, enjoying the benefits and suffering the pains of living day in and day out with a few score or few hundred fellow villagers in what sociologists call a “primary community.” Cities were different. Strangers abounded, and laws enforced by rulers and their agents were needed to keep peace among strangers. Primary communities of mutual acquaintances still functioned within cities, but only on a part-time basis, since encounters with strangers occurred so often.

Neither villages nor cities existed at first. Nonetheless our ancestors were social even before they invented language and became fully human, so gestures and facial expressions play a part in weaving the web of communication that ties us together and makes cooperation effective. But words and sentences

expanded the scope and precision of communication and made planning ahead possible. Even more important, when expectations were disappointed, people asked why. And then they talked things over, seeking a better way to get what they wanted.

Hunting and Gathering Societies

Planned cooperation and deliberate change when plans failed marked the dawn of full humanity, distinguishing us from all other forms of life. That may have begun about 40,000 years ago when our ancestors began to change the size and shape of their stone tools far more rapidly than before. No one knows for sure.

We do know, however, that before and after attaining full humanity, our ancestors were hunters and gatherers and lived in small bands like those of the hunter-gatherers who still exist in a few remote places in Africa and the Amazon rain forests. Such peoples wander to and fro within well-defined boundaries where they feel at home, hunting animals, picking fruit, digging edible roots, and catching grubs and insects day after day. They sleep outdoors and carry all they possess wherever they go—bows, blowpipes, nets, digging sticks, together with babies too small to walk. In the twenty-first century, such groups are usually timid and often flee from strangers. But when all humans were hunters and gatherers, and weapons were more or less the same for everyone, we can be sure that bands defended their hunting grounds against intruders when they had to, and at special times of the year they gathered with adjacent bands to dance and sing, arrange marriages, and feast together, just as they do in modern times.

This style of life prevailed for most of the human past and in all probability our genetic heritage is shaped by it. We still yearn to belong to a small group of fellow human beings, larger than the immediate family but small enough to know everyone personally, sharing joys and sorrows and thus making life worth living even in times of sickness or hardship.

Village Society

Villages and a new sort of community life dawned about 11,000 years ago when grain farming began both in west Asia and separately in East Asia, where millet and rice rather than the wheat and barley of west Asia were the first important crops. Grain farming required constructing and guarding storage places for the next year's seed. That meant staying in one place year-round, so early farmers soon constructed permanent shelters for sleeping and cooking. These made life more comfortable, and since the farmers clustered their buildings close together for protection and sociability, they created villages. Village farmers worked longer and harder than hunters and gatherers and their diets were more monotonous. Despite these disadvantages, the new way of life spread from its beginning, since farming produced far more food on a given amount of land than grew naturally, and more food sustained more people. Early farmers therefore could easily drive away small bands of hunters and gatherers wherever soils and rainfall were suitable for growing grain.

Not long after farming villages began to spread in Asia and into Europe in this fashion, other farming villages arose in Africa and the Americas, relying on different crops and supporting similarly dense populations. They also spread far and wide within climatic limits. In ensuing millennia, villages spread so widely that all the early centers of farming eventually mingled, exchanging crops, domesticated animals, and innumerable skills.

Long before the European discovery of the Americas brought these agricultural exchanges to their climax, cities and civilizations subordinated most, but not all, villagers to outside control. The subordinated

village farmers were compelled to hand over part of their harvest to landlords and distant rulers. We call these villagers "peasants." Obviously they had to work harder than before and raise more grain than they themselves needed for food and seed. Plows pulled by domesticated animals made that comparatively easy in Eurasia; Amerindian peasants, however, had to depend entirely on their own labor. They were helped by the fact that both corn and potatoes—their most important crops—yielded more calories per acre than wheat and other Old World grains did, with the exception of rice, which also demanded a great deal of human labor.

Characteristics of Village Life

Compared with villages, civilizations and empires were fragile. They rose and fell as weapons evolved and invading armies came and went. Endless political turmoil also had the effect of expanding the frontiers of civilization to new ground wherever farming villages were sufficiently numerous and productive to support states and rulers, together with priests, specialized warriors, merchants, and artisans who provided rulers with what they needed.

Even so, local differences were very great, and no two villages were ever the same any more than were any two cities or civilizations—or individual persons for that matter. Writing about villages in general is therefore risky, all the more so since village histories were unrecorded and accurate statistics were often lacking.

Still, some generalities are obvious or very probable. They are worth describing not as universal certainties but as usual and approximate averages. First, adult villagers needed children to help with the daily household work and to support them in old age. Life, especially for infants, was precarious due largely to disease, so parents wanted to have more than the two children needed to keep village populations steady. Whenever fertile but uncultivated land was accessible nearby, younger sons and daughters of marriageable age could hope to live as well as their parents by breaking in new fields, and perhaps they could form



a new village if their fields were sufficiently far away. That was how farming became so widespread. But once settlers arrived, landscapes filled up rapidly since children were numerous. Sooner or later, land shortages resulted, presenting stark alternatives to young people who could no longer inherit as much land as their parents did.

Subdividing the family farm and intensifying cultivation was sometimes possible, but it almost always meant impoverishment and could not be done more than once or twice. Hiring out to work for neighbors who owned larger farms was an alternative, but hired hands seldom married and lost status and many of life's satisfactions. Emigration to cities and towns in hope of finding unskilled work was a better bet; since diseases were more intense in towns and marriage was less universal, urban populations usually could not sustain themselves without regular recruitment from surrounding villages.

When these alternatives failed, resort to violence was likely. But peasant revolts nearly always failed, sometimes only after reducing the population sharply. Epidemic disease could diminish a population even more rapidly, and so could the ravages of organized state warfare. Starvation due to crop failure was still another risk village farmers faced occasionally. Overall, rural populations tended to increase since births normally exceeded deaths, and new crops, better seeds, better tools, and new skills spread from village to village, increasing food supplies little by little and from time to time.

What ensured this result was the way villagers raised children generation after generation, even at risk of local overcrowding, and took advantage of every improvement in food production that came to their attention. Villages were the cells of human society. They survived while empires and cities came and went. Local disasters never stopped even a handful of survivors from starting to plant and reap again as a matter of course, forming new families and carrying on local traditions, changing when change seemed useful but, above all, resisting it century after century and millennium after millennium.

A second generality is that villagers were never wholly self-sufficient. From the very beginning of agriculture, special kinds of stone could be quarried only in a few places although they were needed everywhere for tools, and a cereal diet also required small amounts of mineral salt to keep human bodies healthy. Luxuries, too—shells, feathers, and colored pigments to decorate bodies and buildings—often came from afar. These rarities reached individuals living where they did not occur naturally either by hand-to-hand gifting from village to village or by sending out special expeditions to collect supplies from known locations—salt from the Dead Sea, for example. A few wandering peddlers may also have carried rarities from village to village and circulated food and other local products even in very early times. No one knows for sure.

Genetic exchanges with outsiders were also necessary to assure health and vigor. Festival meetings where dwellers in nearby villages came together for dance and song, just as hunters and gatherers had always done, allowed for marriages to be arranged, bringing new genes into the community along with new information to be acted on or forgotten as the case might be. In short, villagers were part of a larger human web extending throughout the inhabited world. Occasional contacts extended not only from village to village but to hunters and gatherers and to townsmen. Proof of that is the fact that humans remained a single species even after spreading around the Earth, instead of differentiating into separate species like the birds the nineteenth-century English naturalist Charles Darwin studied in the Galápagos Islands.

Within that web, villagers had most to learn from cities and towns, where strangers came and went, dealing perpetually with one another and generating no less perpetual innovations more rapidly than anywhere else. An early landmark was when farmers first acquired metal tools. Once available, metal hoes, plowshares, sickles, hammers, and other tools spread, since they lasted longer, worked better, and demanded less effort than did tools made only of stone and wood.

Emigration, forced or chosen, across national frontiers or from village to metropolis, is the quintessential experience of our time. • John Berger (b. 1926)

This made human society more complex, however, since metal ores had to be mined, smelted, and shaped by specialized workers, and such workers had to eat food someone else had raised. Moreover, ores, fuel for smelting them, and refined metal had to be moved from where they were found or made where they were needed. And that required transport—initially by ships and animal caravans—and personnel to arrange each transaction; and they, too, ate food raised by others.

This new complexity was organized from cities, for rulers very much wanted metal for weapons and display, and as long as gold, silver, and bronze prevailed they nearly monopolized its use. As far as villagers were concerned, only after smiths learned to manufacture iron did they begin to use that far more abundant kind of metal. Iron became widespread in Eurasia about 1100 BCE, but Amerindians were limited to copper, silver, and gold before 1500 CE, all of which were too rare, too precious, and too soft to make good tools.

As Old World villagers began to use iron tools, larger harvests became easier to achieve, and for the first time the human majority began to benefit from the urban workshops, miners, merchants, and peddlers that made and distributed iron tools among them. Villages, in other words, began to share at least marginally in the market exchanges that pervaded urban society.

Other things reached out from urban centers, too, not least religious rituals and doctrines that blended with diverse older religious practices. Simultaneously, the stream of migration from countryside to town spread village habits and expectations among city folk generation after generation, thus maintaining greater cultural and human continuity amidst ever-accelerating change than could otherwise have existed.

Commerce, Transportation, and Agriculture

The next far-reaching change affecting a great many villagers began in China about the year 1000 CE when

the imperial Song government (960–1279) found it convenient to require peasants to pay taxes in money. To do so, of course, they had to sell something—food, silk cocoons, or any other local product others wanted to buy. Before that time, peasants did sometimes buy items they could not make themselves—iron tools, for instance, and salt, normally paying in kind with whatever was left over after rent and tax collectors had carried away their share of the harvest. These were exceptional transactions, and most peasants most of the time had always lived without using money.

Coins had begun to circulate about 560 BCE in Anatolia and spread from there throughout Eurasian cities and into parts of Africa. As a standard of value, coins could buy anything. That made exchanges far easier since the purchaser got what he wanted even when he did not have anything but coins in hand that the seller wanted to have. The transfer of a suitable number of coins let the seller seek out someone else, perhaps far away, with something for sale that he did want. Accordingly, all parties profited by creating far-more complex and far-ranging networks of exchange than had existed before. Those networks also sustained local specialization in manufacturing and brought local raw materials into the market faster than before, with all the benefits of specialization that the Scottish economist Adam Smith was to analyze in his 1776 book *Inquiry into the Nature and Causes of the Wealth of Nations*.

Since China's rivers and canals provided safe and cheap transportation throughout the Yangzi (Chang) and Huang (Yellow) river valleys, the monetization of many thousands of villages, where something like 100 million peasants lived, led to rapid increases of wealth and skill. In a real sense this marks the start of modern times, for China's example soon spread along the seaways and reached inland wherever navigable rivers resembled China's cheap internal transport. Within Eurasia, western Europe was best equipped by nature to emulate the Chinese. Accordingly, the rise of towns and markets in that part of the world took off less than a century after Song China showed the way.

For the next thousand years, every time transportation improved with better ships, better roads, and



Ghulam Ali Khan, *A Village Scene In the Punjab*. (1820). Watercolor.

better-kept public peace, the exchange of goods and services between villages and cities intensified. This was the time when crops moved most rapidly from one region of the Earth to others wherever climates permitted. Agricultural tools also became more elaborate, and horses displaced plodding oxen from European plow teams because they walked faster. Alfalfa, turnips, potatoes, and other more specialized crops allowed European farmers to abandon the older practices of leaving grain fields fallow every third year and eliminating weeds by plowing them under in summer before they formed seeds. Other parts of the Earth also benefited from new crops and improved methods of cultivation, but we know less detail about these areas, although major advances were fewer than in Europe, even among the ingenious and hardworking Chinese.

Greater participation in urban-based markets, however, had its drawbacks. Wealth increased but so did inequality within the villages as some families prospered and others lost their land. Soon after 1200, in parts of Europe and especially in England and Flanders, cottars who possessed only gardens

began to eke out a living by spending most of their time spinning and weaving wool supplied to them by a town merchant and selling what they had made back to him. They were more like town artisans than farmers, but by growing part of the food they needed in their gardens, they could work for less than town dwellers. Similar arrangements became very widespread in India where millions of rural spinners and weavers made cotton cloth on a vast scale. They clothed India's population, and merchants exported their cloth far and wide since it was the best and cheapest in the world.

Changes to Village Life

Across the Atlantic, Amerindian villages suffered widespread disaster after 1500 CE, when lethal disease brought by Europeans provoked two hundred years of crippling epidemics until survivors acquired a level of resistance to infections comparable to what Old World populations had acquired in earlier times. Millions died before that disaster worked itself out, many village fields became vacant, and Europeans

brought millions of enslaved Africans across the Atlantic to work on sugar plantations. Those plantations were more like outdoor factories than traditional villages. Other previously isolated peoples suffered similar disease disasters as ships started to sail across the oceans of the Earth, but nowhere on the scale or with such drastic consequences as afflicted tropical America and southeastern North America.

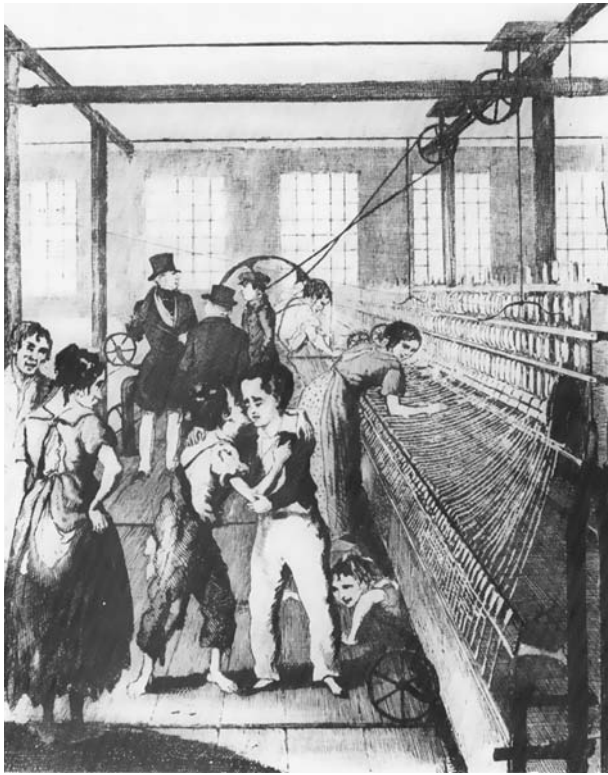
In general, intensified connections with the wider world tended to undermine the cohesion of villages. Sometimes new property rights allowed landowners to dispossess peasants and uproot whole communities. This happened in parts of England when raising sheep became more profitable than raising grain. Sometimes, however, new crops opened new possibilities for hard-pressed peasants. For example, in the seventeenth century, American corn reached the Balkans, allowing Serbian, Albanian, and Greek peasants to escape from Ottoman Empire tax collectors by moving to mountain valleys and planting corn on scraps of fertile soil there. But cultivable land was scant in the mountains, and population increase soon made these villages unable to feed themselves year-round. Descending to the plains to work as masons or harvesters was one alternative; using guns to seize the grain they needed was another. The resulting violence became endemic in the western Balkans in the eighteenth century. It recurred as recently as World War II when guerrilla bands in the mountains defied occupying German forces and lived by collecting extra food from farmers in the plains that fed local towns and cities in peacetime.

To be sure, in some parts of the world, there were villages where subsistence farming continued to be little affected by city influences until the late twentieth century. A few villages in remote regions also relied largely on buying and selling to feed themselves. In Russia, for example, Old Believers who refused to accept official changes in Orthodox worship in the seventeenth century fled to remote northern forests where farming was precarious. There they began to make wooden utensils and toys, sending out peddlers to sell them throughout Russia and return with sacks of grain on their backs to keep those villages alive.

In the world as a whole, a new era began after 1750 when cities started to invade villages with cheap machine-made goods. Flowing water and then steam engines powered new machines for spinning and weaving wool and cotton. This began in England and is often called the Industrial Revolution. Subsequently, steam power was applied to other kinds of manufacture, and steamships and railroads accelerated transport capacity enormously. Cheaper, far more abundant and often better cloth and other goods benefited everyone in the long run but brought disaster to innumerable artisans, mainly in cities but also in many villages, especially in India and England. After about 1850, other kinds of new machines for sowing, reaping, and plowing put still further strain on the world's villages, where smallish fields could not accommodate them.

North America, Australia, Argentina, and Russia were where mechanized farming overturned older life patterns most drastically. Nucleated, or clustered, villages had never established themselves among the European settlers in the Americas and Australia, and family farms were already larger than in the long-settled regions of the Earth. When tractors displaced horses in the fields (about 1920), bigger machines moved faster and allowed a single man to cultivate more acres than ever before. As a result, family farms merged to form larger and larger operating units, sometimes still owned by a single family but often by a corporation. The countryside also emptied out, and in twenty-first-century United States less than 5 percent of the population feeds everyone else, with a lot left over for export.

The former Soviet Union (1922–1991) followed a different path. There Joseph Stalin decreed in 1928 that peasant fields must be consolidated into collective farms and promised tractors and machinery to ease old-fashioned hand labor. Resistance was fierce at first. Many peasants slaughtered their livestock rather than hand cows and horses over to managers of the new collective farms. Serious famine followed since tractors did not arrive fast enough to replace horses, and Communist agents seized stocks of grain to feed the cities while leaving too little behind to



Many villagers were lured to cities during the Industrial Revolution with the hope of finding jobs—but wages were low, working conditions often deplorable, and the use of child labor rampant.

feed the angry peasants. Nonetheless, after the first two or three years, tractors did arrive; far fewer workers were needed to cultivate collective farmland, yet harvests stabilized and millions of ex-peasants left the countryside to construct new dams and factories and perform all the other tasks the government assigned them to do.

Official plans and actual performance never coincided exactly, and labor was often inefficiently employed. But at a time when the rest of the world was suffering deep economic depression, Communist accomplishments were impressive. Innumerable individual Russians also undoubtedly found life in cities and at construction sites easier than what they remembered from the village huts of their youth.

The increase in these civilians' consumption slowed after 1936 when arms manufacturing took

precedence over all else. That, too, proved its value when Germany attacked the Soviet Union in 1939, for the Soviet's expanded industrial capabilities allowed the Red Army to survive and eventually to defeat the invading Germans. But collective farms never nurtured many children, nor did Soviet cities. So the forcible disruption of village life in the 1930s had an unsuspected cost, as birthrates fell well below replacement levels. The consequences for the country's society have yet to be resolved.

Where villages were thickest, small fields and village custom inhibited large-scale mechanized farming and allowed most old ways to persist until about 1950. Population growth among villagers in China, India, the Muslim lands, and eastern Europe strained the existing order; warfare, climaxing in two world wars (1914–1918 and 1939–1945), for all the slaughter it entailed, did not do much to relieve rural population pressures.

Consequently, most of the world's remaining peasants were poverty stricken and already demoralized when first radio and then television began to penetrate their consciousness, often through governmental efforts to make them patriotic citizens and reject Communist or other foreign ideas. Where Communists came to power, as they did in China, Southeast Asia, and more briefly in Indonesia, revolutionary governments were no less eager to exploit the new means of communication to win peasant support. Moreover, after the establishment of Israel in 1947, radically reactionary Muslim groups sought to propagate yet another revolutionary ideology. One such movement came to power in Iran, another briefly did so in Afghanistan, and similar groups continue to threaten Muslim rulers and their American backers everywhere.

Outlook in the Twenty-First Century

The upheavals and ideological storms of the twentieth century showed no sign of abating and insofar as they affected the consciousness of ordinary peasants, older customary ways crumpled. Even more subversive was the effect of "mere entertainment" broadcasts

on television in the form of films from Hollywood and India. They flaunted the wealth and glamour of modern cities, and young peasants, especially those who knew they could not inherit enough land to live even as poorly as their parents did, nearly all concluded that old ways were wrong ways. Yet when they left home to live in city slums, they usually found their lives no better. Radical discontent and the espousal of revolutionary ideas are natural under such circumstances. Millions are caught in this trap and their distress will remain a critical feature of world affairs for the foreseeable future.

Demographers believe that more than half the 6.8 billion people alive in 2009 live in cities. It follows that the safety net villages once provided against urban collapse is much weakened. Contemporary economic strategies that support city life, such as flow-through economies (which move goods through the economy in a linear, single-use fashion) and just-in-time delivery (which supplies goods to a manufacturer as needed), are amazingly productive when they work. But such strategies are increasingly precarious; for example, while oil reserves diminish, tractors still require gasoline to assure the harvest on our mechanized farms that feed city populations.

Long-term human survival probably also requires stronger and more peaceable primary communities to take root in our cities as a substitute for the villages where most of our predecessors lived generation after generation. In times past, professional soldiers bound together by drill, poor urban neighborhoods, and religious congregations were the principal primary communities that took shape in towns and cities. None raised children as successfully as villagers did; all three functioned only part-time, and they sometimes

intensified frictions by including only a segment of the urban population.

Cities are still not reproducing themselves, and villagers may follow suit, attracted and distracted as they are by city ways. Time will tell; but as long as we remain social creatures, we will continue to yearn for fulltime membership in a primary community, despite the risk of violence when such communities collide.

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See also Child Nurture; Cities; Population Growth; Urbanization

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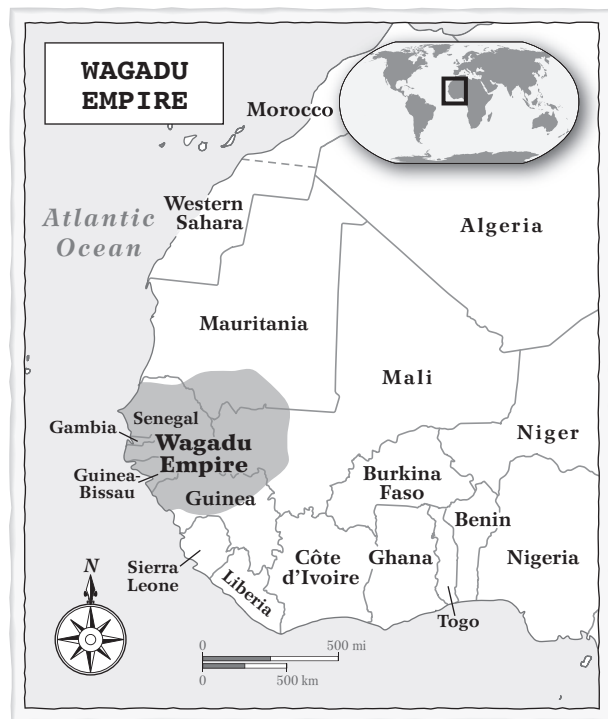
The Wagadu Empire was a leading military and political state in West Africa during the first and second millennia CE. Although recognized for developing an advanced agricultural irrigation system and later as the seat of an influential Islamic religious/philosophical culture, Wagadu is best known for its central role in the early intercontinental commercial and trade system, especially for gold production and distribution.

Located in the Sahel, the transitional semiarid ecological zone between the Sahara to the north (a camel pastoralist milieu) and the savanna and Middle Niger River Valley to the south (a peasant cattle pastoralist milieu), the Wagadu or Ghana Empire was a dominant military and political state system in the first and early second millennia CE. (Wagadu is the name of the empire in the Soninke language. The word *Ghana* was one of its ruler's titles, and medieval Muslim geographers named the empire after this title. Although the present-day Republic of Ghana is named for this ancient empire, they are actually located approximately 805 kilometers apart.) It administered a vast area and embraced a culturally and linguistically heterogeneous population. Muslim accounts dating from the late eighth century to the thirteenth century consistently described it as a powerful polity that was particularly rich in gold.

The core area of the empire, whose roots can be traced archaeologically to the first millennium BCE, was the space of its ruling dynasty (the Soninke-speaking Sissay), military and political functionaries, specialized craft and service groups, and its army. The settlement of Soninke-speakers in the area can be dated to the early second millennium BCE, and

the emergence of hierarchically organized polities occurred between 1600 and 1200 BCE. One historically significant feature of the core was its dynamic and expansive irrigated agricultural system. The social organization associated with its complex of intensive farming practices allowed the system to take over cultivable but marginal desert lands and to assimilate other agricultural communities. Another important feature of the core area was the role of the Wagadu military and political elites in production and trade.

According to a late eighth-century source (al-Fazari of Baghdad), Wagadu was 2,000 kilometers long and 160 kilometers wide and was "the land of gold." The conditions for the expansion of the empire and the development of its domestic economy can be tied to its place in the medieval world economy. Ian Blanchard, a scholar of medieval economic history, has written a detailed study of the history of bullion (gold and silver) production and marketing in the Middle Ages that provides useful insights. He relates that during the years from 930 to 1130, an "industrial diaspora" occurred as the major focus of gold and silver production was relocated from Central Asia to Africa and Europe respectively, and a new intercontinental monetary-commercial system began to emerge. Technological changes in the production base of the West African gold industry—namely, the introduction of the mercury amalgamation process—resulted in a dramatic increase in annual gold production. One consequence of this development was the appearance (between 1136 and 1175) of a distinct North African zone of cheap and plentiful gold, extending from the Atlantic Ocean to the Red Sea. The presence of cheap African gold and equally cheap and plentiful European silver led to the emergence of a distinctive



Afro-European bullion market that was characterized by long-term price stability and an “anti-cyclonic” circulation of the two metals. West African gold passed north to the Mediterranean world, and in exchange a countervailing supply of European silver flowed south. The process created an Afro-European market structure that distributed the two metals between the continents. Blanchard goes on to say that the changes in African gold mining and the gold trade permanently established Africa’s position in an intercontinental monetary-commercial system for the next four hundred years. For several centuries the Wagadu Empire had a central role in this system as a distributor of West Africa’s gold.

Extending the Empire

Given its location between the desert and the savanna, the empire had two orientations: one was the northern frontier (irrigated farming and salt production) and the other the southern frontier (rainfall farming and gold production). From the sixth through the twelfth centuries, Soninke-speaking traders, peasants, and political elites moved northward from the empire’s core zone into the southern Sahara to found or to settle in oasis communities. Nomadic Berber-speaking groups were driven out, assimilated, or subjugated.

Because of their social commitment to a specialized set of agricultural practices, when the northern “frontier” Soninke took over new land, they introduced a well-defined combination of intensive cultivation techniques and a particular social-administrative organization.

Southward expansion created a different kind of frontier. Soninke-speaking traders, officials, soldiers, and peasants from the core settled in the Middle Niger Valley and the Lakes region at the eastern end of the Middle Niger Valley—also referred to as the Niger Delta. Oral histories record the names of the towns and villages they founded between the eighth and the thirteenth centuries. Indigenous Mande-speaking fishing communities and rice cultivators were either assimilated or subjugated under a civil administration based on that of the core. Other Niger Valley groups—for example, cattle-herding Fulfulde-speaking pastoralists—became tribute-paying vassals, and local elites were incorporated into the Wagadu imperial system as minor functionaries.

The Capital

In his eleventh-century description of Wagadu, the Andalusian geographer al-Bakri (d. 1094) states that the empire’s capital (contemporary sources refer to the capital as “the city of [the] Ghana”) consisted of two large towns situated on a plain. One town was the residence of the king and his court and officials; the other was the town of Muslims, where there were twelve mosques, salaried imams and muezzins, jurists, and scholars. (Al-Bakri relates that the Wagadu king’s interpreters, his royal treasurer, and the majority of his ministers were Muslims. The king and the majority of his subjects, however, were not Muslims at the time al-Bakri wrote his account in 1068.) The towns were almost 10 kilometers apart, but the road that joined them was flanked by uninterrupted habitations. Archaeologists believe that the ruined city of Koumbi Saleh (discovered in 1913) in present-day Mauritania is al-Bakri’s Muslim town. Excavations reveal what was once a densely populated, fortified city of single and multistoried houses. It was a major

craft and commercial center and possessed a great mosque, which was built in the tenth century.

Beyond the remains of the city's fortifications are cemeteries and the remains of many constructions, including habitations, workshops, and a series of stone watchtowers that stretch for a distance of eight kilometers beyond the city's walls. Beyond the last watchtower was a densely built-up hinterland that stretched a further 12 to 22 kilometers. Extending 100 kilometers beyond the capital are the remains of stone caravansaries (stone inns where caravans stopped), some of considerable size, and an abundance of tumuli and mounds. The largest tumuli represent the remains of towns. Others represent cemeteries, megaliths, and the ruins of villages, fortifications, and workshops. The building styles and material culture of the ruined sites are similar to those of Koumbi Saleh. The size of the capital and the demographic density and the scale of urbanization in the core can be attributed, in part, to the empire's role in the trans-Saharan and intercontinental bullion trading networks.

Economy

Between the ninth and twelfth centuries, cattle herders and millet- and sorghum-producing peasants settled in the lands above the Niger Valley floodplain. Oral histories credit Wagadu governors with constructing irrigation canals and water reservoirs for the purpose of improving agricultural production. Between the eleventh and thirteenth centuries, dry-farming agriculture gradually supplanted floodplain agriculture as the principal farming system in the Niger Valley. Dry-farming agriculture was established by migrant Bamana-speaking peasants who settled on the lands above the Middle Niger floodplain. Specializing in millet production, they represented a new and expanding market for the products of the fishing industry. In this way dry-farming stimulated the fishing industry and incorporated it into a wider commercial network that extended to the Upper Niger gold fields and Saharan oases. The growing Niger Valley population created a new market for Saharan salt, urban craft goods, and trans-Saharan imports.

Labor Control

In the context of an expanding intercontinental bullion market, Wagadu sought to exploit more effectively and systematically the natural riches of the Niger River, principally through the development of the fishing industry, the hunting of aquatic animals, and the trade in these resources. The expanding bullion market was connected to the general expansion of long-distance commerce, including the trans-Saharan trade. Urbanization (population growth in established towns and the founding of new ones) and the growth of urban crafts were crucial both to the expansion of trade and efforts to exploit the riches of the Niger River. During the eleventh and twelfth centuries, new occupational groups of free-status people known collectively as the Somono were created. Drawn from the ranks of the bonded and war captives, the Somono were settled in new villages or in preexisting ones. In obligatory service to the Wagadu ruler, they specialized in river transport as boatmen and in boat building, aquatic hunting, and the production of fish and fish oil. In return for their obligatory services to the ruler, the Somono were granted, by the ruler, a monopoly over certain economic activities within the Middle Niger Valley. If the ruler did not protect their monopoly, they were no longer obligated to provide him with their services.

A concomitant development was the creation of a number of hereditary slave groups. They included blacksmiths, cultivators, fishermen, herders, masons, armed retainers, messengers, and boatmen. Known collectively as the Zanj, they were royal property and were in lifelong service to the king. In this and later periods there were different categories of servitude in the western Sudan, and some of these categories do not have counterparts in other areas of the world. The Zanj consisted of specialized economic groups, each of which was endogamous. They were royal property in the sense that they were obligated to pay "tribute" to the rulers in the form of economic and service activities. They owned property (for example, their instruments of production), and they could also own slaves (just as slaves could own slaves). Their property



was their own and not the rulers, which gives a distinct twist to the condition of servitude in the Wagadu Empire. The specialized economic groups—the Somono and the Zanj—exercised monopolies over their specific activities and occupations, in return for which they paid tribute to the Wagadu rulers.

Long-Distance Trade

The Middle Niger Valley was known to medieval Muslim geographers as the “Land of the Wangara.” In this context, the name Wangara refers to the principal gold merchants of the empire and to the towns they inhabited. (Wangara is a generic name given to long-distance traders, specifically gold traders; hence it refers to an occupational/economic group and an accompanying social status.) The Wangara trade network covered an immense area, joining the entire Niger Valley into a single commercial-craft system, running from the goldfields in the Upper Niger basin in the west to the Lakes Region in the east. In addition to bullion, this system distributed a wide range of products—salt, copper, iron, craft goods, produce, fish, and so on—both within and beyond the empire. Exporting perhaps 13 to 18 metric tons of gold to North Africa under the most favorable conditions and perhaps 4 to 9 metric tons in less favorable circumstances, it was responsible for ensuring the empire’s place in the international bullion market.

Islam and the Empire

The history of Islam in the Wagadu Empire can be divided into two phases. The first phase (eighth to eleventh centuries) belongs to Kharijite Islam; the second (eleventh to twelfth centuries) to Sunni Maliki Islam. Muslims of the Ibadi stream of Kharijite Islam introduced Islam into Wagadu in the eighth century. From that date until the twelfth century Ibadi merchants and clerics settled in the empire’s urban centers, trading and proselytizing. The earliest converts were the Wangara gold merchants. Ibadi-Wangara relations were not only commercial; they

were also scholarly. Between the ninth and eleventh century the Ibadi-Wangara communities produced an influential religious-philosophical culture, which embraced a significant part of the western Islamic world.

The Sunni Maliki phase is associated with the religious reforms of the Berber Almoravid dynasty in North Africa (1039/40–1147). The ruling dynasty and the political elites of Wagadu converted to Sunni Islam in the 1070s or 1080s and joined the Almoravids (a coalition with the Senegal Valley–based Takrur Kingdom; Wagadu joined this coalition in order to take part in controlling the western trans-Saharan routes up to the Maghrib). Thus, Islam became the state religion of Wagadu. The inhabitants of the capital’s Muslim section were Kharijites and Sunni Maliki believers. In the course of the twelfth and thirteenth centuries Kharijites became a minority among the faithful. The Almoravid-Wagadu connection had both a military and intellectual dimension. Writing between 1137 and 1154, the Andalusian geographer al-Zuhri refers to prominent Wagadu scholars, lawyers, and Qur’an readers in Andalusian towns. He also mentions the Wagadu army commanders who traveled to al-Andalus to participate in the jihad against the Christians of northern Iberia.

Decline

By the early thirteenth century Wagadu ceased to be a state system in the political geography of West Africa. The Soso kingdom, a former tributary located along the southern frontier of the empire (late twelfth to early thirteenth century) and then the Mali Empire (mid-thirteenth to mid-fifteenth century) that arose on the Upper Niger River reduced Wagadu to a tribute-paying vassal state. Nevertheless, Wagadu’s core zone continued to flourish until the first half of the fifteenth century, after which it ceased to exist as a political entity.

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See also African Religions

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War and Peace—Overview

According to archeological evidence dating long before recorded history, formerly peaceful neighbors first resorted to warfare to protect their resources and place in the world; since then there have been many other motivations. Even religions that set theoretical limits on violence sanction and justify war's necessity. More contemporary peace movements are often associated with the pursuit of human rights.

Questions of war and peace have dominated politics and philosophy since the dawn of civilization; conquest and resistance have shaped major eras of global development. But while war and peace are from one perspective inseparable twins—two sides of the same coin—the histories of war and peace have not been so symmetrical. History has often been written about war; “peace studies,” on the other hand, are a modern academic invention. (And note which term comes first in this article’s heading.) This asymmetry points to a fundamental question about war and peace: which condition, war or peace, is “normal” and which the aberration? While a historian’s answer might be that both are “normal” as aspects of the past, the question remains current because it implicates debates about human nature and, often, social and political policy. In other words, how one views the origins of war affects how one sees the possibility or advisability of trying to end war. This article will sketch an overview of the historical origins of war, of the major stages in the history of war, and of the landmarks in the less-studied history of peace.

Origins of War

Getting at the origins of war historically is, of course, a difficult task, and controversy surrounds all attempts at providing an answer. Even defining war proves difficult, as what counts as war is built into many interpretations of the evidence. Since written records do not take us to a time before war, historians must depend on archaeology and anthropology for evidence. Anthropological approaches have often involved studying isolated hunter-gatherer peoples living much as our ancestors did thousands of years ago. The Yanamamo of the Amazon basin are a famous case. The very high levels of interpersonal (especially intergender) and intertribal violence that characterize Yanamamo culture have often been taken as evidence that a proclivity for warfare is built into human nature. But recent reinterpretations of the original field studies in light of the broader colonial history of South America have called this reading into question. Far from being isolated, the Yanamamo have been directly and indirectly affected by neighboring (and often more complex) societies for centuries—societies which themselves practiced organized warfare, exported weapons, and in general contaminated the supposedly pristine experiment provided by the Yanamamo, or indeed by any other simple society that managed to survive into the twentieth century. And for every study of a violent tribe, there seems to be a counterexample of a study of a group living peacefully. The anthropological record, at least based on studies of living peoples, is therefore problematic.

The archaeological record poses its own problems, however, because it is far from complete. But the outlines of an answer are beginning to emerge. Skeletal

remains of *Homo erectus*, the widespread ancestor of modern humans, have been gathered from sites across Eurasia dating from between 2 million and 100,000 years ago, and skeletons of *Homo sapiens*, the modern human species, from between 150,000 and 10,000 years ago have been found around the world. Of these several thousand skeletons, very few bear any unambiguous signs of human-inflicted violence, and those that do are isolated cases. In short, if we define war as *organized* human violence against other humans, as opposed to the odd murder, there is no evidence for it before about 8000 BCE. A site in northern Iraq from around that date is the earliest of a type that becomes increasingly common later: a mass burial of several hundred skeletons showing clear signs of the impact of human weaponry. At roughly the same time, unambiguous fortifications also begin to appear in the same part of the world. The evidence spreads from this point of origin and also appears independently later in other places such as northern China.

What conditions characterize the places and times where warfare springs into existence? Not surprisingly, given the times and places involved, the conditions are associated with the emergence of agriculture. A rising population in especially fertile areas and rich hunting grounds began to put pressure on those resources. Nevertheless, populations in such areas, even before full-scale agriculture, became less nomadic, staking claims to territorially defined settlements, a trend reinforced by farming. In addition to putting pressure on resources, the rising population—in terms of both absolute numbers and the density of settlements—led to the rise of increasingly defined social hierarchies and mechanisms of community governance. Even if such developments arose to deal with questions of intracommunity dispute resolution and economic redistribution, they provided the means for a more organized and effective communal response to outside threats, especially in terms of centralized decision making. Finally, in the first case in northern Iraq and in several later cases where war making arose apparently independently, there appears to have been a severe environmental crisis that triggered the move to



In order to defend Paris during the Franco-Prussian War, National Guard units, including women, mobilized to join the action at the front.

military conflict by creating an especially great strain on established resource levels. The result: formerly peaceful neighboring peoples resorted to organized violence against each other to protect their place in the world.

Once the resort to arms had taken place, several additional dynamics reinforced the tendency for warfare to spread rapidly beyond its points of origin, and indeed beyond places where the initial conditions held. For one, it was a successful technique, at least from the perspective of the early winners, who were of course the ones best placed to exploit the new way of life. But perhaps even more important then and thereafter was the interaction of warfare with social class and political leadership. The interests of social elites in hierarchical societies naturally diverged from the interests of the mass of the people, and warfare proved more beneficial to the elites than to the farmers, because the elites were more likely to specialize in the bearing of arms (so becoming warrior elites) and thus to garner the most in terms of glory and riches from waging war.

And as the most intense form of crisis that societies now faced, warfare made strong leadership all the more crucial. Tribal leaders, chiefs, or kings knew this and therefore favored war as policy more than



Disabled veterans throughout history, like the one pictured in this 1917 poster, have often struggled to readjust to civilian life; their plight is one of war's wide-ranging social and cultural effects. The poster announces a National War Relief Exhibition in Pozsony (in modern-day Hungary).

the interests of their society as a whole would have. To paraphrase the sociologist Charles Tilly's famous maxim about states, war made leaders and leaders made war. Finally, once there were war-making powers on the political map, any society in contact with them had to adopt the new mode of organization or risk conquest and extermination. Avoiding warfare was no longer an option, and war became a constant

in human history, complete with fortifications, arms races, and wide-ranging social and cultural effects.

The History of War

How societies made and make war is probably the central question in military history. The question has often been answered in narrow terms of strategy and tactics—the “art of war” and its supposedly universal principles. Technological determinism—the view that available weaponry shaped crucially (and perhaps exclusively) the ways of making war—also has a long historiographical tradition. But modern military history (as well as some ancient writing on war) tends to take a broader view of the question, analyzing the social and cultural parameters that shape war making in particular societies. This is not to deny that the fundamental constraints of economics and technology do not shape warfare—the largest historical patterns certainly can be constructed around such factors—but rather that how different societies make use of technology depends on their preexisting social and cultural characteristics. It is the combination of social organization and technology, in fact, that marks the first two stages of the history of war (“types” might be more accurate than “stages,” because the two existed concurrently and often in symbiosis).

Elites and Commoners

In early sedentary societies, the social division of elites and commoners proved fundamental to military organization, though different states managed the division in different ways. Though masses of conscript infantry might constitute the numerical bulk of a polity's army, a spearhead of warriors who were elite both by training and social status usually made up the most effective and sometimes the only real fighting force. The dominance of elites was reinforced through differential distribution of the best military technology, which meant in the first instance metal weapons, first of bronze and later of iron. A second technology, the domesticated horse, allowed elite warriors mounted on chariots to thoroughly



Yoshikazu Utagawa, *Battle at Kawanakajima* (c. 1848–1863). This woodblock print shows the cavalry from opposing sides engaged in battle during the Kawanakajima War (1553–1564).

dominate ancient battlefields. In time, chariots gave way to riding, but the superior social position of the cavalryman remained, marked by the height from which troopers looked down on foot soldiers and the cost of their mounts.

In later ages, the dominance of often-mounted elites usually survived socially and politically even when the massed infantry assumed central importance on the battlefield. Dominant infantry forces were not the product of technology, but again of social and political conditions. Cohesion is the key to infantry effectiveness, and it emerged in two ways. In certain circumstances, communal service, exemplified by the phalanxes of the Greek city-states, bound foot soldiers together. More often, the emergence of a strong state allowed rulers to raise and train large infantry forces, imposing cohesion from above: this is the model of imperial Rome and China. Variations of state strength, elite dominance, and social structure account for most of the different forms taken by armies from classical times and well into the second millennium CE.

Horse Peoples

But a second model of social and political organization coexisted with the sedentary elite-commons model from early on, and regularly bested the latter's many

variations in combat. Domestication of the horse (and probably the invention of the chariot as well as riding) was in fact a product of the Central Asian steppes, the vast grasslands stretching from the northwestern borders of China into the Hungarian plain. Too dry for agriculture, the steppes instead supported a population of nomadic herders. Hardened by constant competition for grazing lands and inured by their lifestyle to constant campaigning, when mounted on horses and armed with short but powerful compound bows, steppe peoples made fierce and formidable fighters, unconstrained by the need to coddle a class of dependent farmers and unspoiled by the niceties of sedentary life. The mobility and firepower of a large force of steppe warriors was hard to beat tactically.

What they often lacked, however, was political cohesion, as herding provided too little surplus on which to build stable social hierarchies and state structures, and so many steppe forces remained small. Paradoxically, nomad coalitions and protostates grew strongest in proximity to rich and powerful sedentary states, as nomadic leaders used sedentary goods obtained in trading, raiding, and conquest to build and maintain support. The eastern steppe, connected to the west by a narrow corridor between deserts and facing the often-powerful Chinese state, most often generated such coalitions, and movement on the steppe tended therefore to flow from east to west.

Nomadic conquests and alliances regularly affected the sedentary societies near the steppes, at times replacing or invigorating the ruling class and at times spreading destruction, and often serving as a conduit for the movement of goods and ideas. There were other nomadic frontiers: in Arabia, a more static tribal land that erupted only once, though decisively under Muhammad that one time; to the north of the central Mexican civilizations; in the grasslands south of the Sahara; and in a fragmented “inner frontier” in India. All were sources of military manpower and political instability, but the Asian steppes had the biggest impact.

Gunpowder

The long-term demographic trend ran against the pastoralists and in favor of the agriculturalists, however, and after 1500 CE two further developments first reduced and finally eliminated the independent power of the steppe peoples. First was the shift of Eurasian trade routes towards seaborne commerce, a tendency that accelerated rapidly after the age of Vasco da Gama and Christopher Columbus, and that much reduced the importance of the steppes as an east-west link. Second was the spread of gunpowder technology, which in combination with spreading fortifications effectively countered the firepower and mobility that were the nomads’ greatest weapons.

An age of gunpowder weapons extending from roughly 1400 to 1800 CE is a convenient label for the next stage in the history of warfare, but the causal significance of firearms is the subject of much scholarly debate, centered around the related concepts of a “military revolution” in western Europe and the creation of “gunpowder empires” in much of Eurasia.

Again, basic variations in state strength, elite power, and social structure, as well as (increasingly) economic resources, shaped the differences in armed forces in this age, and no area could claim a significant advantage in military effectiveness until perhaps the last half of the eighteenth century, when European methods of drill, organization, recruitment, and logistics began to move somewhat ahead of the pack. But even that advantage was still limited by technologies

of transport and communication that prevented the projection of significant levels of force much beyond Europe itself. Only at sea was the European combination of ships and cannon dominant before the nineteenth century.

Industry

With the coming of the Industrial Revolution, though, warfare entered a new age, as did every other area of human endeavor. While technology was central to this transformation, it was not specific military technologies that were crucial to the transformation of warfare and the emergence of true European dominance globally in the late nineteenth century, though ironclad steamships and machine guns, among other inventions, certainly played important roles. Rather, it was the vastly increased productive and transport capacities generated by industry that, through two centuries of constant innovation and improvement, brought to war the same character that it brought to the economy, politics, and culture: mass.

Mass production of weapons and supplies supported mass conscript armies, inspired by the mass politics of nationalism that had first appeared in the armies of the French Revolution and Napoleon. Mass destruction in two world wars and in the potential for “Mutually Assured Destruction” brought about by nuclear arsenals resulted. “Total War” recognized ideologically the practical effect of weapons systems that reached under water, into the air, and beyond into space: the potential to erase any distinction between the frontline and the home front. War itself had become a global phenomenon.

One reaction to the potential for global destruction made possible by modern military technology has been the decentralization of warfare. Even during the Cold War, most of the hot wars were fought by proxies for the great powers on one side or both. Since the collapse of bipolarity in 1989, decentralization has increased, with a majority of armed conflicts occurring in civil and guerrilla wars below the level of state-to-state war, including the emergence of global terrorism. Conventional wars seem likely, when involving

I know not with what weapons World War III will be fought, but World War IV will be fought with sticks and stones. • **Albert Einstein (1879–1955)**

great powers, to be waged only when the odds in favor of an easy victory are seen to be high, as in the two wars the United States has fought in Iraq; civil conflicts ensure that peacekeeping, too, will continue to occupy the soldiers of rich nations.

The other reaction to the real and potential destructiveness of modern war has been the emergence, since the mid-nineteenth century, of organized peace movements and mass protests against state-led violence. Believing that Mutually Assured Destruction is indeed a mad concept for international relations, opponents of nuclear weapons, in particular, often call for an end to all war.

Histories of Peace

The dialectic between war and peace long predates modern peace movements, of course. The emergence of war stimulated thinking about war, about peace, and about the desirability of either or both and about how peace was to be achieved.

Classical Philosophy

Attitudes to war in ancient philosophy rarely invoke true pacifism, the belief that war is so evil that it should be avoided at all costs. In some warrior-dominated cultures, indeed, warfare was glorified; seeking peace would have removed all hope for glory and obviated one of the ways in which men (always men, for the history of warfare is highly gendered) gave meaning to their lives. Homer's *Iliad* provides a clear example of this outlook, though the *Odyssey* is more balanced, and both recognize the human costs of war. The Indian philosophical tradition raised the elements of such an outlook to the level of high philosophy. The *Bhagavad Gita*, the central story of the epic *Mahabharata*, a sacred text of Hinduism, explains the concepts of law, duty, and cosmic order in terms of a warrior's dilemma about killing his relatives in a looming battle, with the god Vishnu ultimately showing that killing is a warrior's sacred obligation.

Other classical traditions, while perhaps less nonchalant about individual deaths, recognize war as an

evil necessary to the maintenance of order (both internal and external) and required of good rulers and men in the face of threats to both order and freedom or independence. Greek and Roman writers and Chinese theorists of war such as Sunzi share this outlook, which is perhaps simply a concomitant of a secular, state-centered view of the world. For these thinkers, peace was preferable, but war had benefits, including the possibility of ensuring a more secure peace.

The Salvation Religions

Another strain of ancient thought, exemplified by the Hebrew and Persian traditions, sanctioned war even less problematically as part of a universal god's plan for the world and his chosen people. Both of these traditions influenced the salvation religions of Christianity and Islam, whose attitudes towards war and peace are complicated. Although often portrayed as a pacifist religion in its early days, Christianity in effect accepted war as soon as it accepted the existence of the state in the form of the Roman Empire, and pacifism was from the start a minority voice in the new religion. Early Christian thinkers emphasized the condemnation of war implicit in classical views but ultimately saw its necessity for order. When Christianity emerged after Constantine as the state religion, it therefore made a relatively easy transition to sanctioning warfare led by Christian rulers. Saint Augustine had worked out the main tenets of a Christian theory of just war by around 400 CE. This put limits on the proper conduct of war, but questioned neither its necessity nor its justness within those limits. By the twelfth century, a "just war" theory had accommodated the crusades, and holy war became a part of the Western Christian tradition.

Islam was born in war, and gave birth to a Muslim theory of just war that closely resembled the Christian version. The complication was that the mainstream Islamic tradition looked back to the desert past for models, and so had much more difficulty than Christianity in sanctioning the existence of the state. Since the state was vital to the prosecution of war, just or not, Muslim polities sometimes had more practical

difficulty than Christian ones in sanctioning warfare, despite accepting it in theory.

The other major salvation religion, Mahayana Buddhism, has much less to say about war in explicit terms. Unlike Christianity, which came to prominence with Constantine's military victory under the sign of the cross, Buddhism spread in the wake of the Mauryan emperor Asoka's conversion in the third century BCE, prompted by the horrors of his conquest of Kalinga, and so did contain a strong pacifist tendency. Yet Buddhist states, such as Tibet, and Buddhist warrior classes, such as the Bushido of Japan, both managed to reconcile religion and warfare, and it is perhaps more accurate to say that Buddhism encourages individual quietism, politically, rather than state pacifism. In sum, the effect of the salvation religions on warfare was mostly to put theoretical limits on the conduct of war, but within those limits to sanction and justify warfare. Peace remained an ideal more preached than practiced.

Cultures of War

In practice, limits on warfare were more likely to emerge from particular cultural practices than from overarching religious systems. Most cultures since warfare began have imposed limits on what was and was not acceptable, both in declaring war and in prosecuting it. Rules might govern the treatment of noncombatants and the ransoming of prisoners versus killing them; convention (as well as logistics based on weather and the rhythms of agriculture) might limit campaigning seasons to certain times of year. Certain weapons or ways of fighting might be taboo, quite literally. Ritual penance often served as an obligatory aftermath of killing in war. While often connected to or interpreted within a framework of religion (including the salvation religions), such limits tended to be localized and displayed the malleability of custom and tradition.

Many of the most destructive wars in history resulted from the breakdown of such norms of warfare, either because of "cheating" by an internal player in the cultural system or, more often, because of the



During the Boer War in South Africa (c. 1900) five British soldiers pose with rifles; the woman holding the flag symbolizes the British Empire they protect.

intrusion into the system of an external invader who did not know or play by the rules. Warfare that crossed lines of culture, in other words, tended to be bloodier than intracultural warfare, whether the lines of culture were drawn along linguistic, religious, ethnic, or class lines. Whether it occurred in the warfare of Greek city-states in the wake of the Persian invasion, in the European conquest of the Americas, or in the eruption of terrorism into New York City in 2001, the breakdown of an unstated but pervasive set of rules of war has usually stimulated both the most vehement calls for further war and the most impassioned pleas for peace—from Aristophanes' *Lysistrata* to Bartolomeo de las Casas's arguments in favor of *los Indios* to modern antiwar movements.

Terrorism is seen to violate norms that have acquired the force of international law, and the formalization of ritual limits on warfare, not just in law but in regulated systems of diplomacy, has also served at times to mitigate the effects of warfare. The nomad-sedentary frontier was a frequent site of both breakdowns of warrior convention and the construction of diplomatic ties that created new, broader cultures of acceptable war. While the inherent instability of the steppes often rendered such efforts impermanent, longer-lasting state-based systems of international

diplomacy and understanding have perhaps worked to greater effect, and have produced in the twentieth century mechanisms such as the U.N. aimed at creating a global culture of peace rather than war.

Modernity: Beyond War and Peace?

The rise of modern peace movements as an aspect of mass politics and in reaction to the destructiveness of modern war has often been associated with other modern political movements aimed at expanding human rights generally. Jane Addams, best known as the founder of Hull House and for her efforts for women's suffrage, also worked for world peace; Gandhi used nonviolent resistance against British imperialism and worked for peace; and Martin Luther King Jr. adopted Gandhi's tactics to work both for civil rights and against U.S. involvement in Vietnam. While the work of individuals and even groups in promoting peace may seem unrealistically idealistic against an ongoing backdrop of civil wars, terrorism, and rogue nuclear powers and in the wake of the bloodiest century in human history, there are trends that seem more hopeful.

Political scientists like to point out that no two democracies have ever gone to war with each other (the Civil War between the United States of America and the Confederate States of America forming a controversial exception), and the world at the turn of the millennium is more democratic than ever before. The economists' version is that no two countries with McDonald's have gone to war with each other (although NATO did bomb Belgrade); perhaps increasing global interdependence through economic ties tends to mitigate warfare. On the other hand, environmental crises played a role in the origins of war, and they may play a role in its continuation in the twenty-first century. What is certain is that questions of war, peace, and human rights are now global concerns.

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See also Peace Projects; Peacemaking in the Modern Era; Religion and War

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Warfare—Africa

Distinctive shifts in African modes, causes, and experiences of warfare can be traced to European colonialism and the rise of the transatlantic slave trade. Traditional African warfare was transformed by fighting against colonialism, and in fighting as European agents on behalf of colonialism. But contrary to popular myth, warfare is no more intrinsic to Africa and Africans than any other places or peoples.

As is true for human societies everywhere, almost all African societies have had many experiences of conflict that escalated into various forms of warfare. A few behavioral theorists have speculated that the earliest hominid and human communities, which arose in Africa, were initially formed in the crucible of violent conflict. While controversial, such theories have had a major impact on the public imagination since the late twentieth century; these ideas may well have shaped the stereotype that Africans have—from earliest times until the present century—been almost hopelessly trapped in cycles of intercommunal war and violence. The history of warfare in Africa, however, does not bear out this gloomy vision.

Traditional Warfare

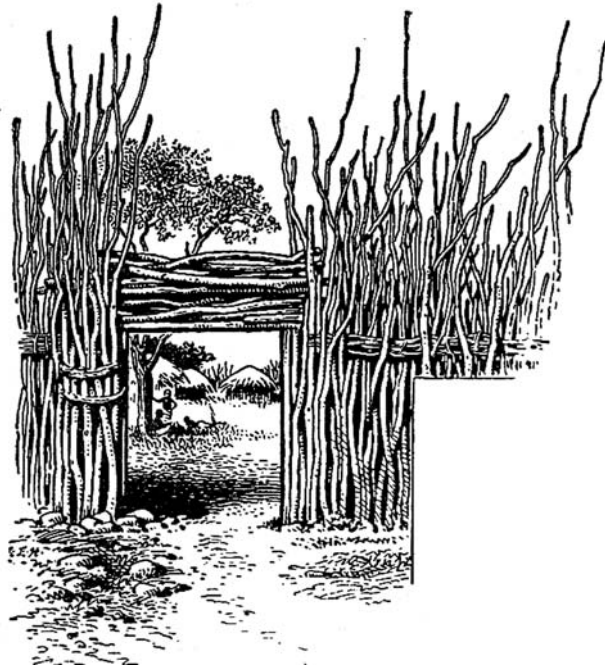
Many African societies have held a special place for martial specialists, or warriors. In and of itself, however, the role of such specialists is not necessarily evidence of widespread warfare on the continent before the arrival of Europeans. At the same time, it does suggest that Africans were prepared for various wars and other violent conflicts. The warrior classes often provided training and testing grounds for societally

valued traits of masculinity, while at the same providing means of defending the populace from any external threats. In some cases these threats involved political challenges to established leadership or efforts to subsume additional people into either an established or a new sociopolitical orbit. But frequently the point of such traditional conflict was acquiring wealth, often cattle. In eastern Africa, for example, Jomo Kenyatta, the first prime minister and president of Kenya, recalled that for the Kikuyu, warfare was sometimes little more than “a form of stealing by force of arms” (Kenyatta 1938, 198).

For many Africans the mystique of warfare was bound with ritual and magic. Warriors frequently displayed their prowess both in ceremonies, including dance and musical performances, and in more private rituals, sometimes associated with limited-membership groups or secret societies. The exploits of traditional African military leaders were often extolled in public recitation of their deeds. Frequently these included magical explanations of their successes, calling upon the spirit sources of their strength and other abilities. Such were the stories told of the great warrior and national leader Sundiata (d. 1255), founder of the Mali Empire, by the Malian griot (storyteller) Mamadou Kouyate. Despite significant traditional support for warfare, there was little in the experiences of traditional warfare to prepare Africans for the challenges of warfare presented by expanding external demands for economic advantage or political power.

Impact of the Slave Trade

While some African wars traditionally resulted in the capture of human beings and the absorption of those



A stockade around a village in Africa in the 1800s built to protect the residents from human and other predators.

individuals as productive members of their captors' societies, external demands for slaves occasioned a transformation in these patterns of African warfare. Islamic sources make clear that African societies were willing from an early time to adjust their patterns of war to encourage the capture of people who could be sold as slaves. But it was the almost insatiable demand of European traders for slaves from the sixteenth century onward that transformed African warfare in material ways. In particular regions, such as the eastern frontiers of the kingdom of Kongo and the grasslands and scrub forests of west Africa south of the Sahara, the devastation caused by increased warfare was especially significant. Even after opposition to the Atlantic slave trade grew in Europe, in order to satisfy the demand for slaves in Arabia and on European-settled islands in the Indian Ocean, warfare in the search for slaves continued well into the nineteenth century in other regions.

The latter effects of warfare inspired by the demand for slaves was responsible for one of the great ironies of colonialism, the call for European intervention on the African continent to end persistent African warfare. This was the basis of appeals made by the missionary David Livingston (1813–1873) for

British involvement to bring the benefits of Christianity, civilization, and legitimate (as opposed to slave) commerce in eastern and southern Africa. These calls were made at a crucial time, when both literacy and the availability of low-cost popular publications were shaping the awareness of many Europeans about the African continent. These ideas first set in place notions of widespread African warfare, which were exacerbated by later developments in colonial policies regarding Africa.

Colonial Warfare in Africa

Chief among the results of calls for ending African warfare were military expeditions to “pacify” African peoples and bring them under the “benevolent” control of European powers. In two divergent ways, these efforts also involved Africans in new experiences of warfare. One was a reorientation of African military efforts to oppose the expansion of European interests on the continent. For the most part, Africans were ill-equipped to counter the increasingly technological forms of warfare they confronted. Few African armies were able to successfully repulse European incursions, although some had occasional successes, as did the Zulu *impis* (regiments) in defeating British troops at the Battle of Isandlwana in 1879, an important early battle in the Anglo-Zulu war. But as the saying goes, while the Zulu won the battle, the British ultimately won the war. Nevertheless, the defeat of the better-armed but poorly deployed British by the superior numbers and strategy of the Zulus marked the worst defeat for the British in battles against native forces. The success of the Zulu can be partially attributed to the innovative military reforms of the Zulu Kingdom under the leadership of Shaka (c. 1787–1828). Only the Ethiopians, under Emperor Menelik (1844–1913), were fully successful in warfare against European powers, turning away Italian invaders at the Battle of Adwa in 1896.

The second new military experience tied to colonial expansion was the effort to turn Africans—and especially those from what European colonialists presumed to be “martial races”—into soldiers of



colonialism, transforming them into the very troops needed to first create and then enforce colonial domination in many areas of the continent. Among the earliest of these colonial military units was the British King's African Rifles (KAR), soldiers recruited from east and central Africa. KAR (and other similar) units not only preserved the colonial peace within their own territories but often were sent to other parts of the continent to enforce colonial rule. This practice of co-opting colonial Africans as the military agents of colonial warfare represents a historical turning point in the impact of warfare for Africans.

Africans and the World Wars

In many ways, the culmination of this transformation came as colonial powers sought to utilize colonial troops in their own defense when facing the daunting military challenges of the twentieth century. The European warfare that began in August 1914 was in large part brought on by colonial rivalries and soon spilled over into those colonies, especially in Africa. Minor campaigns brought modern warfare to several areas of the continent for the first time, and the East African Campaign actually continued until several days beyond the armistice in Europe. Perhaps as many as 2 million Africans were drawn into military service during that war as both soldiers and military laborers. France also relied upon African troops for the defense of its home front, and Britain sent thousands of South Africans to Europe as laborers. These experiences—both directly for participants and observers as well as indirectly for those who later heard about them—brought the reality of modern warfare fully into the African consciousness.

With the advent of renewed warfare between the European powers in 1939, Africans were again recruited for military service. Their most significant deployment on the continent was during the North African campaigns, where large numbers were trained as truck drivers. Other Africans served overseas, many in campaigns to repel the recent Japanese conquest of Southeast Asian territories as well as with units sent to Europe in the effort to turn back Nazi

occupation. On returning home, these men frequently felt dissatisfied with the rewards they were given for their service; not infrequently they were soon after involved in various protests against continued colonial domination in Africa.

Contemporary African Warfare

One of the responses to these protests by former soldiers was the expansion of colonial military units and the advance of some Africans to officer corps. Thus, when the protests led to independence for many African colonial territories—sometimes relatively peacefully, for others rather bloodily—the resultant new states came with ready-made national armies. On the one hand these armies served as agents of nation building, employing increasing numbers of citizens and frequently engaging in public-works activities. But on the other they were frequently agents for the settling of various disputes, both real and imagined, which came with the demands of European-induced concepts of sovereignty and nationality. In this context, any number of perceived slights or even ethnic differences could—and sometimes did—escalate into warfare.

The resulting pattern of conflict, well-known from earlier examples of developing European nationalism, was civil war, mostly notably in Congo, Angola, Nigeria, Ethiopia, Mozambique, and Rwanda. Other African countries, including Uganda, Sierra Leone, and the long-independent Liberia, faced internal rebellion. Significant international peacekeeping efforts—including important initiatives of the Organization of African Unity (and its successor, the African Union)—helped to reduce this new form of African warfare. Perhaps more significantly, other African countries, such as South Africa managed to avert postcolonial warfare, breaking the pattern of national violence that has plagued European nations since the sixteenth century. Even at the beginning of the twenty-first century the legacies of colonialism and the struggle for power are still to be fully played out. Established as a Belgian colony, the Congo (officially Democratic Republic of the Congo) in particular

remains a violent and dangerous place where rape has become a weapon of war. The Darfur region of Sudan is plagued by claims of genocide. Somalia remains a state on the verge of failure and at the mercy of warlords. And in Zimbabwe a new generation of leaders is seeking to take over from a corrupt regime still clinging to the successes of the liberation movement of decades earlier.

Melvin E. PAGE

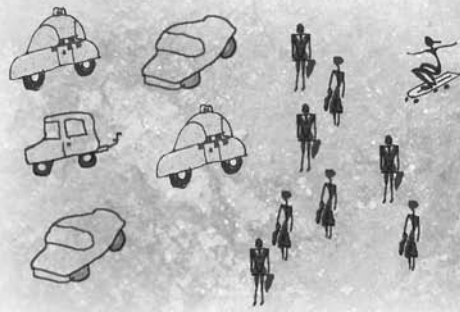
East Tennessee State University

See also Africa; Africa—Colonial; Africa—Postcolonial; Kenyatta, Jomo

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Warfare—Air

Air warfare has had the greatest effect over the shortest period of time in military history. From hot air balloons and dirigibles to bombers, fighter jets, and unmanned spy planes, the nature of war changed because of aircraft. But the goal of air warfare has remained basically the same: to supply reconnaissance and support to ground troops.

Air warfare refers to military operations above the ground, including tactical support of land forces, transport of troops and matériel, and enemy observation through reconnaissance. In military history, air warfare has had the most profound impact over the shortest time. Early beginnings may be traced to late eighteenth-century France, where paperhangers Joseph and Étienne Montgolfier launched the first hot air balloon. The French Revolutionary army incorporated a corps of balloonists, and the concept of air warfare was born. It was utilized exclusively for observation purposes for a century. By 1900 all major armies included balloon sections and experimented with dropping some form of bombs.

David Schwarz, a German, built and flew the first dirigible in 1886. Count Ferdinand von Zeppelin perfected the new technology and demanded that his design specifically be applied in warfare. Another German, Otto Lilienthal, was the first to scientifically study wing structures and mathematical formulas explaining lift, but it was the American brothers Orville and Wilbur Wright who brought about the instrument that became the primary weapon for air warfare. Their airplane hit the world stage with the first flight on 17 December 1903 at Kitty Hawk, North Carolina.

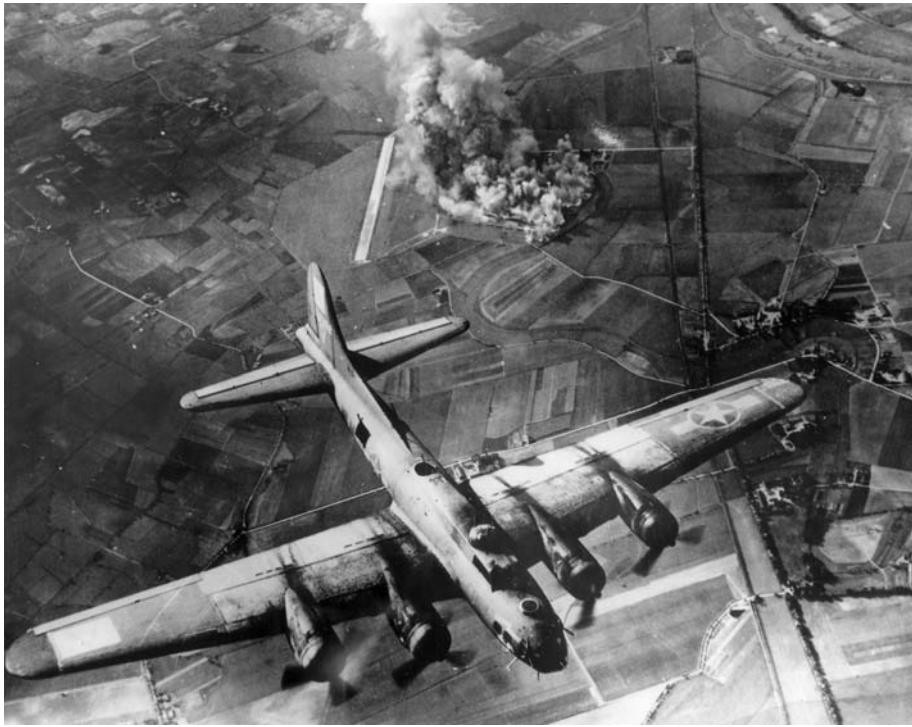
Formal military use dates from 10 February 1908, when the U.S. Army Signal Corps ordered the first airplane and hired the Wright brothers to instruct two officers. The Frenchmen Henry Farman and Louis Bleriot proved the airplane's long-range capability by flying across the English Channel in 1909. They established the first flight schools in France, which took the initiative among all nations in the promotion of aviation. Germany pursued the development of airships, but in 1911 the government contracted with Albatros to build airplanes for military use. The same year England created the Air Battalion of the Royal Engineers. All European nations followed suit with some form of aviation.

Italy claims a series of firsts in the use of aircraft in military situations, all achieved when it used an airplane for observation on 23 October 1911. An Italian aircraft dropped the first bombs, had the first aviator wounded in combat, and developed the first use of radio communications in flight. As the experimental stage of aviation ended, the organizational structure was in place for the sky to become the next battlefield.

Several small European wars in 1911 and 1912 provided the testing ground for the airplane as a war machine. These included Italians and Turks fighting in Libya, the Mexican Revolution in 1910, a 1912 uprising in Morocco that was put down by France, and incidents in the Balkans between 1912 and 1913.

World War I (1914–1918)

Air warfare came into its own with the first major war of the twentieth century. In 1914, one thousand airplanes were in the service of the major powers;



U.S. bombers over Germany in 1943. Allied air supremacy was a key factor in defeating Germany.

five years earlier there had been none. Observation balloons marked Allied and German fronts. Their purpose was to direct artillery fire. Once the war bogged down in trench warfare, stationary balloons became easy targets of enemy aircraft. The mobility of the airplane came to the forefront, in areas that ranged from intelligence gathering to directing artillery fire. Two-thirds of the French resources were used for artillery spotting.

Air power had no precedent in military history. Two-thirds of the French resources went to artillery spotting use. Aircraft was something new, and while commanders understood some of its functions, full recognition of its strategic value came slowly. The French formed the first bomber group in late 1914, but both they and the British concentrated on developing slow and stable observation craft like the BE2 and Voisin for photography and artillery spotting, while the Germans developed bombers to attack Allied trenches. Even before the war, military strategists recognized the psychological and material damage that could result from bombing. Targets were supply and communication lines, transportation, and troops. Bombers became an extension of the artillery, because with aerial observation, enemy troops could no longer shelter from artillery fire.

The first frontline use of the airplane occurred in August 1914, when the British Royal Flying Corps used two-seater Avro observation planes to cover their lines when Germans attacked their infantry near Amiens. The pilots observed German infantry encircling British infantry and promptly reported this, allowing commanders to redeploy troops and avert a disaster, proving the vital and efficient use of aircraft for intelligence. This simple observation and report would have taken two days to receive from ground patrols.

In July 1913 Captain Alessandro Guidoni of Italy successfully dropped a 100-kilogram bomb. The Russian Igor Sikorsky developed the first four-engine plane in 1914 and flew it more than 2,250 kilometers. By October 1914, the Royal Flying Corps called for all observation pilots to carry bombs. German airships struck at the heart of Britain, bombing London with some 270 kilograms of high explosives and incendiary bombs. Reprisals were carried out on towns, and for the first time, civilians and prominent personalities were targeted—Kaiser Wilhelm on 1 November 1914 by the British and later Czar Nicholas II by the Germans.

The year 1916 was a critical one for the technology of air warfare. Zeppelins became easy victims of



American liberator bombers and P-40 fighters at a base in China, 1943.

British and French antiaircraft guns and bombers. Germany developed the Gotha, a long-range bomber capable of flying at nearly 5,000 meters. The first Gotha raid on 25 May 1917, in a tight formation, heralded a major advance in air warfare and forced profound changes in the concept. By the end of 1917, attacks on major cities were common. Better bombs were developed that were not subject to things like wind drift, and bombsights were perfected to account for factors such as aircraft speed and altitude.

The swiftly changing nature of the war ramped up aircraft technology and played a major role in the evolution of tactics using aircraft, virtually overnight. To protect bomber formations, the fighter was born—pursuit aircraft, or “scouts,” such as the French Nieuport and German Fokker. The “age of aces” dawned. Fighter pilots became public heroes and celebrities. Their role not only stirred the public imagination, their individual skill perfected the art of air combat tactics. The fighter pilot became an interceptor and escort to protect the slower and more vulnerable bombers and reconnaissance craft. They claimed the highest attrition rate of any arm of the service.

Early on, pilots armed themselves with revolvers or infantry rifles, until the invention of the Lewis gun by the American Isaac N. Lewis in 1911. Weighing only 11 kilograms it was quickly adapted to aerial combat. The French Hotchkiss and British Vickers came

later. The Allied concept of aerial warfare changed from bombing or reconnaissance missions to actually fighting enemy aircraft. In 1915 the Dutchman Anthony Fokker developed interrupter gear fitting the machine gun to a German airplane’s Mercedes engine and allowing it to fire on the axis of the fuselage, a major leap in the efficiency of air warfare. In 1916, the fighter arm of the air services evolved from single daring pilots targeting the enemy in a dueling fashion to formations of long-range fighters escorting bombers deeper into German-held territory. The French Air Service implemented this formation concept at Verdun in 1916. In early 1917 Germany created Flying Circuses, which were several squadrons bound together into as many as fifty machines to conduct offensive operations at points along the British sector. From 23 to 29 March 1918, the Royal Flying Corps and the Royal Naval Air Service carried out the first large-scale use of air power impacting the outcome of a battle when seventy aircraft led low-level attacks that caused the German offensive to falter.

The physical battlefield of the air spawned doctrinal guidelines and tactical principles that were published and distributed throughout the air services, especially with the introduction of formation flying. No radio communications existed between pilots and ground forces. Speed was hard to regulate. Pilots were dependent on their commanders’ signals, while still



vulnerable to attack from enemy aircraft overhead. Since two out of three air battles took place behind German lines, going down meant certain capture.

By 1918, an air force existed as a separate entity in the defense forces of every major power. Airplanes revolutionized warfare forever, by removing the element of surprise from the battlefield. Technology had gone from flimsy, linen-covered machines armed with rifles or revolvers, capable only of 100-kilometer-per-hour speeds and 3,000-meter ceilings, to powerful tools of war carrying over 450-kilogram bombs. Duel-like “dogfights” gave way to killing machines like the German DVII, French Spad, and British SE5 and Sopwith Camel, armed with two machine guns firing eight hundred rounds per minute, and flying up to 250 kilometers per hour at 6,700 feet in formation. Aviators were a new breed of soldier, signifying a relationship between man and machine that characterized all future wars. The legacy of innovative pilots like Oswald Boelcke, Albert Ball, Edward Mannock, Billy Mitchell, and Eddie Rickenbacker essentially remained at the core of aerial warfare for sixty years. Also, the Women’s Royal Air Force was organized in April 1918, incorporating women into the military for the first time.

Between the Wars

The golden age of flight advanced military aircraft little. By the late 1930s, Germany and Japan led the world with the most modern air force, having more than fifty thousand planes each, while the United States and its allies had fewer than ten thousand mostly outdated machines. Hermann Goering pioneered the next phase in air warfare with the German Luftwaffe. The Spanish Civil War in 1936 provided an opportunity to develop dive-bombing tactics, and monoplanes replaced biplane design, producing such fighters as the Messerschmitt Me-109 in Germany. But tactics in the Second World War began virtually where they had left off twenty-two years earlier, except the machines were far more advanced. The British Spitfire fighter, introduced in 1938, could go more than 550 kilometers per hour and had a ceiling

of over 12,000 meters. Sir Hugh Trenchard of the Royal Flying Corps and the Italian army officer Giulio Douhet were the chief European proponents of strategic bombing to destroy enemy centers.

World War II (1939–1945)

World War II began with land and sea campaigns. Airpower played a subordinate role, supporting land forces. Germany invaded Poland in 1939, bombing its major cities and destroying its air force. Germany’s blitzkrieg attack on London in 1940 was the first battle fought exclusively in the air. British fighter pilots recognized the same tactics applied that their forebears had perfected in 1917 and 1918: the fighter going one on one with the enemy bomber. England developed strategic bombing capability while Germany concentrated on more cooperation between ground attack aircraft. The Japanese attack on Pearl Harbor on 7 December 1941, using precision reconnaissance and fighters armed with torpedoes, destroyed most American combat aircraft in the Pacific, and proved that aircraft would be a premier tactic in modern warfare.

The Second World War built on the lessons of the First, though many ideas had become obsolete. For the Allies, twelve-man fighter squadrons protected supply lines against the Japanese fleet in the Pacific. The development of radar by the British in 1939 changed the element of surprise. Radio communication advances allowed immediate contact with pilots and ground control to pinpoint enemy aircraft in flight. Long-range strategic bombing became the most effective way of destroying German capability, using the B-17 and B-25 bombers in formation, in such operations as the 1,000-plane raid over Cologne in May 1942 and the Regensburg-Schweinfurt mission in August, launched from bases in England. Since escort fighters did not have the range required, bombers carried their own defenses, like the B-17 with a ten-man crew armed with .50-caliber guns. Gliders were first used for silent troop drops, and P-51 Tankbusters were very effective against German panzer divisions.

Bombs do not choose. They will hit everything. • **Nikita Khrushchev (1894–1971)**

Transport pilots played an important role. The Chinese army was resupplied by air—one of the greatest military achievements in history. Allied forces used C-47s to drop troops to penetrate enemy-occupied territory. On D-Day, 6 June 1944, paratrooper forces dropped from airplanes led the Allied advance on Berlin to end the war. Brave pilots in rugged machines proved that air warfare dominated the outcome on the ground. A leap in aviation history occurred with the first fighter jet, developed by Germany, the Messerschmitt ME 262. Other German developments indicating the future were the V-1 pilotless jet-propelled rocket carrying nearly 2,000 kilograms of explosives, and the V-2, the first guided missile capable of carrying 750 kilograms of explosives more than 300 kilometers. These were launched against England in the summer of 1944, but came too late to affect the final outcome of the war.

Aircraft carriers were used effectively in the Pacific during the Battle of Midway in June 1942, and B-29s overwhelmed any Japanese home air defense. On 6 August 1944, the B-29 *Enola Gay* dropped the first atomic bomb on Hiroshima, ending Japan's war efforts without invasion, and epitomizing absolute air superiority.

Postwar and Vietnam

The development of the jet engine and surface-to-air and air-to-air missiles changed the complexion of air warfare, but the piloted fighter jet played the major role in the Korean War (1950–1953). U.S. single-seat jet fighters, the F-80 and F-86, fought Soviet-built MiG-15s—both able to reach the speed and height required for air fighting, but their supersonic speed made formation flying near impossible. Once again, pilots fell back to the fighting unit introduced by Oswald Boelcke in 1916, the pair. The fighter was used for offensive and defensive day fighting, visual and photographic reconnaissance, and bombing and strafing ground targets.

The Vietnam War (1957–1975) was largely a guerrilla war fought in jungles. B-52 bombers were used for main air strikes against Communist targets, but helicopters became an important aerial warfare technique

because they could easily strike targets in the jungles and mountains. Primarily the air war was between jet fighters, the Russian MiG-17 and MiG-21 jets against American F-105 and F-4 fighters. The surface-to-air missile (SAM) antiaircraft weapon, equipped with laser-guided bombs, missile detection, and radar-jamming devices, posed a new threat to aerial reconnaissance and bombing. Better aerial refueling techniques extended the range of combat aircraft.

Modern Air Warfare

With the advent of computer technology, weapons systems have become more and more sophisticated and “smart.” But the quest for height and the need to establish immediate air superiority remain primary battlefield objectives for air warfare. The Persian Gulf War (1991) and early twenty-first century operations in Afghanistan and Iraq employed the latest technology in the air to control the war on the ground. Stealth fighters like the F-117 Nighthawk, with a range of 1,200 kilometers and carrying two laser-guided bombs, and the B-2 Heavy Bomber deliver surgical strikes on pinpointed targets. By deflecting radar, the Stealth bomber appears invisible to enemy forces. Its four engines hidden in the fuselage enable it to evade heat-seeking missiles.

With such undetectable machines and computer technology, pilot skills and aircraft speed are not issues. Reconnaissance is still a predominant factor in air warfare. Unmanned predator spy planes are the ultimate reconnaissance aircraft, guided by remote control from ground stations and endangering no lives, to dispense real-time information for directing troops and warplanes. C-130 gunboats are essentially airborne artillery, echoing the early days when biplanes were used in conjunction with artillery batteries. The Apache attack helicopter can account for twenty tanks in one strike.

The latest U-2 spy plane flies at more than 25,000 meters, at the very edge of space. The Eurofighter is a state-of-the-art fighter plane. But the ultimate goal of air warfare remains the same as that original concept one hundred years ago—a continual battle for the air,



through height and speed, to supply reconnaissance and support to ground forces.

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Warfare—China

Before the nineteenth century, China's wars were waged either internally or with the nomadic peoples along its borders. In further contrast to other nations, China never glorified its warriors, and the protection and defense of towns mattered more than offensive military tactics. Since the nineteenth century, though less isolationist than before, China has fought only to defend what it (broadly) considers its own interests.

China, until very modern times, never faced an equally powerful, proximate civilization; warfare alternated between a unified China contesting with nomadic peoples on its borders and a China divided in internal conflict. Warfare also alternated with the yin and yang of Chinese imperial power. Nomadic peoples never have exceeded several percent of China's population, and while they might conquer China, they could rule only by Sinicizing themselves.

China favored a model of warfare that combined military arts with psychological factors, including an indirect approach to battle, surprise, and deception. The result is the classic *Sunzi* (dating to China's Warring States era, 475–221 BCE) and some 2,500 years later, the theories of Mao Zedong (1893–1976) on peasant revolution and unconventional warfare. Defense, especially the building of walls around towns (the most famous such defense being the Great Wall), mattered more than offense. Also, China has never glorified its warriors, and few left memoirs such as Caesar's accounts of his battles in Gaul.

We know little of warfare in China prior to 600 BCE. China's Zhou dynasty (1045–256 BCE) ruled largely through familial and semifeudal relationships,

not awesome military power. Sometime in the early eighth century BCE, the Zhou began to decline, and in 771 BCE invading nomads allied with rebel leaders sacked the capital and killed the Zhou king, marking the end of what is known as the Western Zhou period. Thereafter China began several centuries of increasingly violent warfare, culminating in triumph of the Qin dynasty and unification of China in 221 BCE. In this era, the Chinese relied on the crossbow—a more powerful bow than was used by Greek, Persian, and early Roman armies and their opponents—and much less on swords, javelins, and battle axes.

During the Warring States period that preceded Qin unification of China, the chivalry that had supposedly hitherto characterized warfare disappeared, and, with the onset of iron weapons late in the Warring States period, armies grew larger, the role of nobles as warriors declined, and peasants figured prominently as foot soldiers. China did not rely on cavalry formations; the number of chariots one commanded was the principal indication of one's military power.

The Qin dynasty was short lived, lasting only until 206 BCE. The Qin relied on peasant armies and iron weapons to overwhelm China's foes and helped connect existing city walls to protect settled China from horsed nomads. Qin forces then began to move south of the Yangzi (Chang) River into present-day Fujian, Guangdong, and Guangxi provinces and northeast into northern Korea.

From Han to Tang

Qin's successor dynasty, the Han dynasty (206 BCE–220 CE), rivaled Rome for power, and began



The Great Wall of China, photographed here at Simatai, was built in stages between the fifth century BCE and the nineteenth century to defend China from incursions, mostly by northern steppe peoples.

a long effort to control the northern nomads—the Xiongnu—and to gain control over the lands south of the Yangzi. To meet the barbarian threat, the Han valued cavalry more than their predecessors. From 121 to 119 BCE, the Han battled the Xiongnu in western China, using more than one hundred thousand cavalry; they prevailed and gained control of profitable trade routes to the west. The Han also moved into Manchuria and took over northern Korea to the Han River. In the first century CE the Han conquered the Tarim Basin and seized Turkistan.

But then the balance of power shifted in favor of the nomadic tribes. Revolts at home weakened Chinese power, the Han lost control of Turkistan, and nomads on the frontiers penetrated Chinese defenses, terrorizing the settled peoples on the North China Plain. In 220 CE the Han collapsed and a period of disunity followed, with various regional states coexisting until China was reunited under the short-lived Sui dynasty (581–618 CE). The Sui dynasty suffered

from its attempt to do too much too soon. It pushed below the Yangzi watershed, and it attacked Korea four times without much success; that failure encouraged nomadic horsemen to attack and capture the emperor.

The Tang and Song Dynasties

The Tang dynasty ruled China from 618 to 907 CE. The Tang capital, Chang'an, was the world's largest city and attested to its great military power. Under the Tang, the Chinese first discovered and began using gunpowder, but as an explosive and not as a propellant. Curiously, this was roughly the same time that the Byzantine Empire perfected so-called Greek fire, the formula for which still eludes experts today. Tang armies continued to make use of peasant infantry and aristocratic and nomadic horsemen. At its zenith, the Tang dynasty controlled northern Korea and Manchuria, south as far as the Red River delta, west into the Tibetan lowlands, and then along the trade route toward the Caspian Sea. Four defeats in the 750s, most notably a loss to rising Arab power in the Battle of Talas River (751 CE) and the An Lushan Rebellion (755 CE), were followed by a series of increasingly costly peasant uprisings leading to a relatively rapid dynastic decline.

Once again Chinese military power faded and the nomads gained control. Frontier military commanders succeeded one another in the north, as non-Chinese nomads ruled the North China Plain. In the south, local military leaders ruled various areas. Even when the Song dynasty (960–1279) reunited much of China, its power was economic rather than military, and it relied on diplomacy and the paying of tribute to maintain peace. Nomadic groups continued to control the North China Plain. In time, the Jin, a nomadic ruling house, pushed the Song out of northern China, and from 1127 the Song controlled only the south. The Mongols overwhelmed the Jin and other northern nomads and in 1279 crushed the Song, establishing the Yuan dynasty (1279–1368) and bringing China and its periphery together under one ruling house for the first time since the Tang.



Terracotta warriors—some 8,000 of them buried underground for centuries to protect the tomb of China's first emperor, Qin Shi Huangdi—offer a glimpse into the warfare of China's past.

The Mongols and the Ming

The Mongols were the greatest military force of the era. They were a horsed people, and they emphasized mobility, with Mongol horsemen having as many as fourteen mounts each, intricate formations, a variety of feints and ruses, and absolute brutality and cruelty to achieve quick victory. The Mongols were adaptive, using techniques of conquered people in one part of their vast empire to seize control elsewhere. They took northern China, but the water-based transport, canals, and rivers of southern China stymied them until they learned how to adapt their tactics. The Mongols eventually learned to augment their limited forces (there likely were never more than two hundred thousand Mongol horsed soldiers total at any given time) with mercenaries from northern China and learned to navigate the waterways of southern China. More interested in exploiting China than in ruling it, the Mongols spent funds lavishly and weakened

themselves using Chinese and Korean troops in two failed invasions of Japan in the thirteenth century. The Mongols lacked the numbers to remain in power for long; they refused to Sinicize themselves, and the dynasty fell less than a hundred years after its establishment.

A resurgent ethnically Chinese dynasty, the Ming (1368–1644), followed the Mongols, but existed in a dangerous world. The Ming never secured control over the hinterlands and the trade routes to the northwest, where the Mongols remained a threat for many years. The Ming rebuilt the Great Wall to constrain the nomads. Later in the Ming era, Japanese ships raided the Chinese coast, and the Ming ordered the coastal population to move inland.

There was one bright moment in Ming military history, the great voyages of the eunuch admiral Zheng He. Zheng was a Mongol, whom the Chinese castrated, and he came to work for the emperor, achieving an influential position. He led a vast Chinese fleet, with twenty thousand sailors and twenty thousand marines from China, into the Indian Ocean to the east coast of Africa, greatly impressing native rulers at the same time that Henry the Navigator of Portugal was sending individual ships with perhaps a company of sailors to find a route around Africa to the east. But Zheng and sea power were passing events, and the Ming, never as powerful as the Han or Tang dynasties, weakened as Chinese officials and military experts defected to a rising power in the northeast.

The Qing

As the Ming declined, the tribal Manchus in the northeast adopted the trappings of a Chinese dynasty; in 1644 they defeated the Ming and established the Qing dynasty (1644–1911/12). Militarily, they organized themselves into companies that were known by the color of their banners (hence this system was known as the Banner system), and they incorporated conquered troops into similar units. With these troops the Qing rulers soon extended their control over the Mongols and Tibetans, and under the great Kangxi emperor (1654–1722; reigned 1661–1722) they even

All war is deception. • Sunzi (fifth century BCE)

limited Russian expansion eastward with the Treaty of Nerchinsk (1689).

The reign (1735–1796) of the Qianlong emperor (1711–1799) marked the high point of the Qing dynasty, after which it rapidly declined. Increasing Western presence in China led eventually to military conflict; two Opium wars (one with the British in 1839–1842; one with the French in 1856–1860) demonstrated the weakness of the Qing, whose Banners had lost their fighting edge and whose firearms had not been updated since they were first gained from Portuguese and Dutch traders in the 1600s. Foreign governments encroached on Chinese sovereignty with impunity. The great Taiping Rebellion (1850–1864) further exposed Qing weakness; it was only put down with aid from Western powers (the United States and the British) and privately organized Chinese armies. The so-called Boxer Rebellion (1900–1901), which had an anti-Western bent and emphasized martial arts, was also put down with international aid. In 1912 the last Qing emperor abdicated, and China became a republic, albeit one plagued by regional warlordism and foreign spheres of influence.

Wars of the Twentieth Century

Japan's imperialist visions led it to seize Manchuria in 1932; its aggression in China did not end there, however, and by 1937 the two nations were in a state of war. Equally pressing in the eyes of the Chinese Nationalists—the nominal government of China—however, were the Communist rebels. Chiang Kai-shek (1887–1975), the Nationalist leader, used German advice and equipment to blockade the Communist base camp in the mountainous southeast, and in October 1933, Mao fled with 90,000 supporters on the famous Long March first southwest, then west, north, and eventually northeast, where 8,000 survivors straggled into Yan'an in Shaanxi. At that point Chiang was reluctantly persuaded to put aside his quarrel with the Communists and to join with them to fight the Japanese.

With the end of World War II, China's civil war resumed in earnest. The Nationalists had support from

the United States, which opposed Communism, but the Communists had greater popular support and better military tacticians in Lin Biao (1907–1971?) and Zhu De (1886–1976). In accordance with Mao's theories of guerrilla warfare, the People's Liberation Army operated in small groups, seeking to overwhelm isolated detachments of larger Nationalist Army forces. Communist cadres emphasized the psychological, preparing their men and seeking to convert their enemy. In time, as Communist strength increased and Nationalist forces weakened, the Communists fought in larger units, and in 1948, large, well-armed Communist armies with more traditional tactics compelled the surrender of Chiang's best troops and won the Battle of the Huai Hai, destroying another 500,000 Nationalist troops. In April 1949 Mao's forces crossed the Yangzi River in many places, and by December 1949, Chinese Communist units had reached as far as southern China and the Vietnamese border.

Since gaining control of the mainland in 1949, the Communist rulers of China have fought only to defend what they perhaps broadly define as their interests. Worried about the intent of the U.N. forces moving to the Yalu River in October and November 1950, China intervened in the Korean War. Following attack and counterattack into April 1951, the front in Korea largely stabilized, and an armistice in July 1953 ended the outright confrontation of the People's Republic of China and the United States.

There have been border disputes with India in 1962 and in 1979 with Vietnam, and there continues to be tension over the fate of the island of Taiwan, where the Nationalists established themselves after losing the mainland. China conducted its first nuclear test in 1964, joining the ranks of the world's nuclear powers. Today the world's most populous nation and the world's third-largest nuclear power, China's military strength is sobering.

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See also China; Warfare—Steppe Nomad

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Warfare—Europe

Early Europe's military arsenal was largely connected to developments in neighboring Asia and North Africa, but changes in the structure of armed forces (e.g., the use of land-owning cavalry and knights in the eighth century) allowed Europeans to better protect themselves from marauders. Technology and training advanced weaponry, created arms races, and eventually allowed European countries to conduct warfare worldwide.

The ancient Greeks invented the idea that Europe was separate and equivalent to Asia. But a glance at the map shows that Europe is in fact a peninsula stretching westward from Asia and, as such, remains closely connected with that larger continent, while on the south the Mediterranean Sea connects it no less intimately with North Africa. Throughout the Ice Age, when glaciers covered much of northwestern Europe, and long after the glaciers began to melt away, Europe remained no more than a thinly inhabited outpost of the Asian-African heartlands. Its military history continued to depend in large part on developments in Asia until after the time of the Mongol Empire (1226–1368) and the arrival of gunpowder from China.

Innovations in Weaponry

Europe's earliest inhabitants came on foot from Africa and Asia, ferrying across the Straits of Gibraltar and the Bosphorus and Dardanelles. They were hunters and gatherers, and we know next to nothing about their warfare. Archaeologists have found a few skeletons showing wounds, inflicted either by warfare or

by hunting accidents. That is all. Agriculture arrived from Asia via the Danube Valley, and early farmers spread throughout Europe between about 8,000 and 6,700 years ago. They also possessed bows; a few rock carvings in Spain show naked archers running around and shooting at one another. Some skeletons, too, have arrows embedded in them. Early European farmers did fight one another at least occasionally, very probably in much the same disorganized fashion that Stone Age farmers in the highlands of New Guinea did when they were first discovered by the rest of the world in the 1930s.

A notable shift in military affairs came when bronze armor and weapons became available in Sumerian cities about 3000 BCE. Since the copper and tin to make bronze came from afar, only a handful of specialized warriors at first could possess these tools. Little by little bronze became more widely available, and wherever the necessary metal and specialized artisans showed up on the scene, the advantages of bronze armor and weapons were so great that warfare became the business of a small elite of professional warriors supported by rents or taxes exacted from ordinary farmers.

Bronze weapons and armor spread throughout Europe between 2800 and 1300 BCE, creating vigorous warrior elites and skilled metalworkers, sustained by far-reaching trade in metals and other objects of prestige. As early as 2800 BCE, two-wheeled chariots drawn by horses appeared on the steppe between the Ural Mountains and the Volga River; at first these clumsy vehicles were fit more for ceremony than for war. But after 1700 BCE, when strong, spoked wheels turning on a fixed axle reduced friction, and when powerful compound bows gave charioteers striking



Leonardo's fresco, *Battle of Anghiari* (1503–1505), was lost during a mid-sixteenth-century renovation of the Palazzo Vecchio. Artists' copies of the fresco, such as this one, keep the battle action (between Milan and Florence, in 1440) alive.

power at a distance and something close to invulnerability against foot soldiers, warfare was swiftly transformed throughout western Asia and Europe. Chariots were expensive and so were horses (except on the steppes), but throughout most of Europe local rulers and chieftains soon acquired the new instruments of power, even as far away as Sweden and England.

This reinforced the military and political power of narrow elites, but after about 1200 BCE the spread of cheap and abundant iron weapons made it possible for ordinary farmers to equip themselves with spears, shields, and helmets, so that tightly packed infantry, arrayed in ranks, became able to withstand chariot attacks far more successfully than before. Significant democratization of European society ensued.

Soon after 700 BCE the balance shifted once again when steppe nomads learned how to shoot their bows from horseback by letting go the reins and clinging to a galloping horse with legs alone. These tactics enhanced the mobility of steppe raiders, and their advantages over farming populations improved in subsequent centuries, most notably when someone, somewhere invented stirrups (about 200 CE) to give them a firmer seat. Finally, steppe warfare reached its apex when bureaucratic promotion on merit to command over standardized units of tens, hundreds, and thousands of men gave Mongol

armies their remarkable efficiency in the thirteenth century.

Armies and Cavalry

Keeping horses where grass did not grow naturally was always expensive and, as ancient Greeks and Romans discovered, a disciplined and armored infantry could withstand cavalry attacks as long as a sufficient number of cavalymen guarded their flanks and rear. Since Mediterranean landscapes were conspicuously short of grass and far enough from the open steppes to be safe from steppe cavalry most of the time, Greeks and Romans therefore relied mainly on armored infantry, protected by iron corselets, greaves (shin protectors), helmets, and shields. Greek hoplites, as the infantry soldiers were called, relied on spears to stab their foes face to face; Romans used swords and fought in more-open formations. At first, ordinary farmers, responsible for supplying their own equipment, filled the ranks. As long as citizen farmers dominated Greek and Roman battlefields, they had a decisive voice in war and peace and other public issues.

Democratic and republican ideals were thus implanted in the classical tradition. The idea that free men fight more bravely than subjects of royal or imperial monarchs still lingers among us. This was how the fifth century BCE historian Herodotus explained

the success of a ragged coalition of Greek city-states against the invading army of the Persian king Xerxes. But Xerxes could not feed his army through the winter and so withdrew, leaving a small garrison behind for the Greeks to defeat the next summer (the siege lasted from 480 to 479 BCE). After this triumph, citizen armies persisted in Greece until the semibarbarian king Philip of Macedon subdued the whole country, and his son, Alexander III (Alexander of Macedon, reigned 336–323 BCE) conquered the vast Persian Empire, spreading Greek influence all the way to India and initiating what historians call the Hellenistic era.

The Macedonian army relied on infantrymen equipped with far longer spears than the Greeks had used, supplemented by far larger bodies of cavalry than the Greeks had been able to afford. The combination of a hedgehog of moving spears driving back the foe supplemented by headlong cavalry attack on vulnerable places in the enemy front proved irresistible on the open ground. Alexander's soldiers also overcame even elaborate fortifications by a combination of massive earthworks and scaling ladders. For the first time, a European army clearly excelled its Asian rivals, but the advantage was transitory.

To be sure, the Romans conquered the shores of the Mediterranean Sea, overthrowing the Hellenistic kingdoms with ease, and penetrated Europe as far north as England and the Rhine and Danube rivers. But Persian rulers retained control of the Tigris-Euphrates Valley most of the time despite Roman invasions. Persian success against Roman armies rested principally on the fact that they had developed a large and powerful breed of horses that were capable of carrying fully armored men on their backs. Such beasts needed abundant fodder, but by planting alfalfa on fallowed fields, the Persians assured themselves of sufficient fodder with no diminution of grain harvests, since alfalfa crowded out weeds as effectively as summer plowing could, and also formed nitrogenous nodules on its roots to fertilize next year's grain.

The Persians' heavy-armored cavalry, equipped with powerful bows, resembled old-time chariots in being able to harass and defeat infantry almost with impunity, hence Roman failures. But the big horses

also could meet steppe cavalry raiders on more or less even terms, protecting local farmers even if they could not pursue steppe ponies very far across the steppes since natural grass was too scant to feed them adequately.

Not surprisingly, the Romans and even a distant Chinese emperor set out to import big horses from Persia in hope of acquiring such a formidable cavalry force for themselves. Yet the big horses were so costly to feed that they never became numerous in China and eventually disappeared. In Europe, however, the Persian style of armored cavalry, introduced under Emperor Hadrian (reigned 117–138 CE), became the backbone of the East Roman or Byzantine army by the time of Justinian (reigned 527–565 CE). But unlike the Persians, the Romans paid these fighting men in money, realizing that central control would falter if they scattered out across the landscape and began to live on private estates.

Knights

Soldiers in western Europe began living on private estates after the Frankish ruler Charles Martel introduced the new style of cavalry in 732 CE by granting land to men, later called knights, in return for promises of military service. For a long time, Western knights remained very few and, unlike their counterparts further east, relied on spears to bring decisive force against their enemies. By the time they became common, the Western Roman Empire was long gone, and German invaders had set up rival kingdoms. Although Charlemagne crowned himself Roman Emperor in 800 after subduing mainland Europe from the Pyrenees to the Hungarian plain, his successors split his empire into rival kingdoms once more. They miserably failed to safeguard their subjects from fresh waves of attackers—Vikings from the north, Arabs from the south, and Magyars from the east.

Local self-defense was urgent, and the means to support it came onstream when the use of heavy moldboard plows drained waterlogged landscapes, converting them to fertile fields. Knights adequately supported by this new sort of agriculture multiplied accordingly, and eventually became thick enough on

the ground to repel foreign raiders. Thereupon, effective local protection assured population growth. From about 1000 to 1300 CE, western Europe became a prosperous frontier land as forests became fields on a massive scale, and all the skills of civilization began to flourish across the north European plain for the first time.

Knightly warfare proved so effective that it expanded in every direction from northwestern France and Germany where it first arose. Knighthood reached England in 1066 with the Norman Conquest; knights had earlier begun to reconquer Spain from Muslim rulers—a process completed only in 1492. The main area of expansion lay eastward where a moving frontier of settlement carried German knights across the Elbe River and eastward to the climatic limits within which moldboard farming was feasible. A new medieval civilization took shape during these same centuries, and western Europe swiftly caught up with its neighbors in military matters—a fact registered by the initial success of crusaders who carried European arms all the way to Jerusalem in 1099 and remained there until 1187.

Arms Races

The Mongol armies that brought steppe warfare to its apex and overran most of Asia before conquering Russia in 1240 never penetrated the rest of Europe. But under the Mongol Empire (1226–1368), trade and travel across Asia intensified, and familiarity with gunpowder (as well as with printing and the compass) reached Europe from China, transmitted by anonymous artisans. The Chinese began to experiment with guns about 1290, but the earliest certain evidence of gun making dates from 1326 in Europe and 1332 in China, taking the form of two drawings of very similar vase-shaped vessels with an oversized arrow projecting from their mouths.

Long before gunpowder upset older ways of warfare, however, European knights suffered unexpected defeat at the hands of pike-carrying Italian foot soldiers in 1176; and when cities like Genoa began to manufacture powerful steel crossbows (initially used to defend ships at sea), knights lost their easy

supremacy on land. Rival cities in northern Italy responded by pioneering the management of mercenary armies composed of crossbowmen, pikemen, and cavalry, while innumerable Italian artisans launched an arms race between ever stronger and nimbler crossbows and more perfect armor.

When gunpowder reached Europe, it had immediate and very drastic effects on warfare, whereas in China and other parts of Asia its effects were much less. That is not really surprising, since where cavalry warfare prevailed, early guns were useless for men on horseback; in China the government relied on walls to resist raiders from the steppes, and crossbows defended such walls more cheaply and far better than early guns could do.

But in Europe kings were interested in anything that could breach town and castle walls and allow them to assert their authority more firmly. Moreover, European artisans already knew how to cast church bells and speedily used the same skills for casting bigger and bigger guns. Not surprisingly, European guns quickly outstripped what Chinese and other Asian artisans produced—a lead that Europeans retained for centuries, at the cost of suffering increasingly destructive wars among a shifting array of growingly powerful states.

The Italians dropped out of the new arms race, which centered in the borderlands between France and Germany where French kings and German emperors competed for the best and newest guns. The speed was astonishing with which the toylike vase gun of 1326 was transmuted into clumsy bombards, about 3.5–4.5 meters (12–15 feet) long, like those that breached the walls of Constantinople in 1453. By 1477, they were replaced by mobile guns, about 2- to 2.5-meters (6–8 feet) long, permanently mounted on wheels yet capable of destroying city and castle walls in a few hours by shooting iron cannonballs.

Monarchs throughout Europe hastened to buy these weapons and used them to overawe rivals at home and expand their power to neighboring lands. Though dwarfed by the new style of armament, Italian city-states were not baffled for long by the power of the new siege guns. Instead, in 1500 the Florentines discovered almost by accident that loosely compacted



F. Oettinger, *European Cavalry Battle Scene* (1785). This gouache painting depicts a violent cavalry battle during the Seven Years' War (1756–1763), a conflict that involved all the major European powers and became known as the first global war.

earth could absorb cannon shot harmlessly, and by digging a vertical hole in front of earthen ramparts, attackers had to cross what amounted to an inverted wall in the face of defending guns. This so-called *trace italienne* put an effective obstacle in the path of Europe's imperial unification of the kind that came to Russia, Turkey, India, and Japan when mobile siege guns like those of Europe reached those lands. But the new fortifications were expensive to construct, and thousands of guns defending (and attacking) them remained essential for enhancing royal power.

Worldwide Warfare

Another significant military change resulted after 1514 when King Henry VIII of England put cannon on board a specially designed warship that had gun ports near the waterline to assure stability. Such ships could deliver a devastating broadside to more lightly armed vessels. Within a single generation (1492–1522), when advances in navigation and knowledge of ocean winds and currents allowed Europeans to sail across the oceans, cannon-carrying ships were available to support their presence on all the coastlines of the Earth. Subsequent conquest and settlement of the Americas depended both on gunpowder weapons and on the infectious diseases Europeans brought with them that proved deadly among previously isolated populations.

In the short run, Spain was the state that profited most conspicuously from the discovery of the Americas. A handful of Spaniards conquered first Mexico and then Peru between 1521 and 1533, and rich silver mines soon supplied King Philip I of Spain (reigned 1556–1598) with a flow of silver that allowed him to more than double the size of his army. Despite American silver, paying so many soldiers and sailors drained the treasury, and three successive bankruptcies paralyzed King Philip's hopes and plans. Mercenary soldiers had dominated the scene in Italy for two centuries by King Philip's time (where he ruled Milan, Naples, and Sicily), when money and credit had become essential for paying and equipping armies throughout Europe. Even the greatest of kings found themselves entangled in debts owed to merchants and bankers.

Under the circumstances, states that managed to increase taxes and repay loans on time fared better than those where royal and aristocratic disdain of money prevailed, as in Spain. The Dutch led the way. They also developed new forms of drill, discipline, and command that made their armies efficient as never before. Maurice of Nassau, Prince of Orange and captain general of Holland and Zeeland between 1585 and 1625, set out to match ancient Roman armies by drilling his soldiers for long hours whenever they were not fighting, marching, or digging trenches for a siege. Endless practice of marching and going through



the motions needed to load and fire muskets in unison and in obedience to shouted commands made firing quicker and more reliable in battle.

Moreover, prolonged rhythmic movements—a sort of dance—aroused feelings of solidarity and togetherness that made well-drilled soldiers willing and able to stand fast even when enemy bullets were flying among them. Maurice's drill spread very fast to other European armies; for the next two hundred years European soldiers, recruited among poor peasants and drifters on city streets, nevertheless obeyed their officers with superior precision and effectiveness wherever they found themselves. These mercenary armies employed young men who might otherwise have been poor and riotous subjects, yet in uniform and under military discipline upheld peace and order even against their like at home. It was they who established Dutch, French, and English empires overseas and extended the Russian Empire southward and eastward overland.

Within western Europe, each army was so nearly matched with its neighbors that an unstable balance of power was maintained. But on the margins, whether in Ireland, America, Siberia, or India, systematic expansion set in. Europe, in short, launched itself on a self-reinforcing cycle whereby military organization sustained and was sustained by economic and political expansion at the expense of other peoples of the Earth.

The Seven Years' War (1756–1763) came close to being a world war, fought, as it was, in Europe, America, and India. Great Britain decisively defeated the French in America and India, while in Europe, Prussia survived against overwhelming odds, thanks to Prussian armies, British subsidies, and potatoes, a crop recently introduced by Frederick the Great (reigned 1740–1786). Potatoes kept his soldiers and subjects alive year after year as Russian, French, and Austrian armies marched to and fro across the Prussian landscape, confiscating grain to feed themselves everywhere they went.

Prussia's survival provoked other Europeans to propagate potatoes in fallow fields wherever they would flourish; British successes overseas provoked the French to improve their field artillery by careful scientific experiment and to build a larger navy with which to challenge Britain anew. When British

efforts to tax their American colonies to help pay for the Seven Years' War aroused armed rebellion, the French seized the chance to revenge themselves in 1778 by supporting the Americans' Revolutionary War. Subsequent French victories at sea, together with French and American troops on the ground, finally compelled the British army to surrender at Yorktown, Virginia, in 1781.

But the French government had difficulty paying for their victory, and when it summoned the Estates General in 1789 to raise new taxes, simmering discontent and admiration for the republican government inaugurated in the United States of America two years before suddenly boiled over into a revolution that soon convulsed all of Europe until 1815. Population pressure had been mounting within most of Europe for a generation or longer, and this contributed to popular discontent, while appeals to reason, centered especially in France, had challenged exemptions from taxation and other privileges that nobles and priests enjoyed. When elected representatives deposed and executed the French king and queen in 1793, other Europeans were shocked. Warfare, commenced in 1792, swiftly intensified when the revolutionary government declared a *levée en masse* whereby all males capable of bearing arms were summoned to fight the invading armies.

The *levée en masse* supplied French armies with an unprecedented number of recruits, and revolutionary enthusiasm, expressed in the slogan "Liberty, Equality, Fraternity," together with enormous efforts to train and equip them with weapons, began to pay off in 1794 with victories against Prussian, Austrian, and British invaders. The advancing French were soon overrunning Belgium, Germany, and Italy, where local populations sometimes welcomed them as liberators.

For the next twenty years, most of Europe was at war save for brief interludes. Varying coalitions of Britain, Austria, Prussia, and Russia together with lesser states struggled against the French and their allies and/or subjects in newly annexed parts of the continent. Political infighting in Paris brought a successful general, Napoleon Bonaparte, to power in 1799; he crowned himself emperor of the French five

years later. Armies became far larger than before, and artillery, now light enough to keep up with marching infantry, played a bigger role in battle than before. Yet thanks largely to potatoes, peasants did not starve as they had in the Thirty Years' War (1618–1648). Peace, when it came after Napoleon's final overthrow and exile in 1815, left Europeans no poorer and militarily far more powerful than they had been in 1789.

Industrialization

The relative peace and prosperity in Europe was due to fact that war had accelerated the manufacture both of armaments and of other branches of industry. More and cheaper goods that were produced by new machinery using both waterpower and steam engines generated new wealth, new markets overseas, and new jobs for growing populations. Britain, Belgium, and Germany, where coal abounded, soon outstripped France, where coal was scarce.

As for military affairs, for a generation after 1815 European governments tried to maintain peace, and armies and navies remained content with the way things were. That began to alter in the 1830s when the French adopted guns designed to fire shells that exploded on impact and could destroy wooden warships with ease. Change accelerated after 1840 when the French and British navies and the Prussian army all abandoned the weapons that had served their

predecessors so well, and a general arms race got under way. The two navies shifted first to iron and then to steel ships powered by steam and armed with larger and larger breech-loading guns, while the Prussian army invested in breech-loading rifles, making older infantry tactics obsolete. Then, when Britain and France joined forces against the Russians in the Crimean War (1854–1856), traditional artisan methods of shaping metal by hand proved utterly inadequate to turn out new rifled handguns. The British responded by borrowing American methods of using semiautomatic machine tools to turn out standardized parts in hitherto unimagined quantity. Mass production quickly spread to the arms makers of all Europe.

Simultaneously, mechanized transport—railroads and steamships—enlarged transport capabilities, and the American Civil War (1861–1865) showed Europeans how armies of enormous size could be supplied from far in the rear for months on end. Mechanized transport also allowed the British navy to compel China to open its ports to the opium trade (1839–1842) and soon afterward Americans induced Japan to open itself to the rest of world (1854). And all the while the British and the French led the way in expanding European empires in Africa and Asia.

Within Europe itself, however, the state that most profited from the mechanization of warfare was Prussia. The General Staff had a decisive voice in



Parisians rallied in support of France during the Franco-Prussian War (1870–1871) crying out, “Vive la guerre!” (Long live the war!)

determining exactly how Prussian railways were laid out, and then it made detailed plans for using the railways to deliver the maximum number of men and equipment to the frontiers in minimal time. Their careful planning paid off when war broke out, first with Austria (1866), then with France (1870–1871), leading in both cases to quick Prussian victories. Thereupon, nationalists who had long yearned to unite the separate German states formed the new German Empire under Prussia's lead.

In the next half century, the arms race intensified. Battleships became larger and faster, armed with enormous steel guns capable of projecting heavy shells as much as 32 kilometers (about 20 miles). Design of field artillery for land warfare improved almost as much, with faster fire, better sights, and greater mobility. New weapons also threatened existing ways of war as airplanes, submarines, and torpedoes extended their reach above the Earth and beneath the sea.

Twentieth-Century Warfare

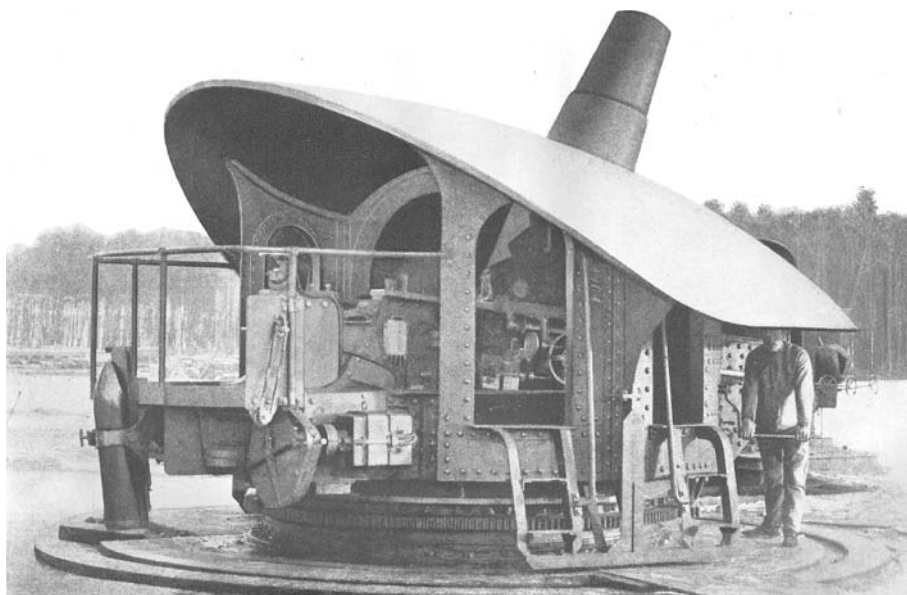
The long-standing French–British rivalry subsided after Emperor Wilhelm II (reigned 1888–1918) came to the German throne and decided to seek world power by building a navy to rival that of the British.

Simultaneously, German army planners began to fear that new Russian railroads might allow Russia's superiority in numbers to endanger their eastern frontier. The result was that after 1907 a triple alliance of Germany, Austria, and Italy confronted the Triple Entente of France, Britain, and Russia.

World War I and Its Aftermath

This was the situation that precipitated World War I (1914–1918). Assassination of the heir to the Austrian throne by Serbian revolutionaries was the spark that set it off, and Austrian plans to retaliate by invading Serbia provoked Russian mobilization, whereupon German and French armies also mobilized. Once mobilization got under way, no one dared to back down and risk unreadiness in the face of the enemy. Britain hesitated, but German invasion of the neutral Belgium on 4 August 1914 persuaded the British to join its allies and hurriedly dispatch a small army to France. Unlike the continental powers, however, the British army had few reserves, so its full military effort was delayed until 1916 when civilian volunteers (later conscripts) had been equipped, trained, and sent abroad to join the struggle.

The German mobilization plan proved initially to be the most successful. As in 1870, it aimed at



A pre-World War I German howitzer and shield. By the beginning of the twentieth century, design of field artillery for land warfare improved, with faster fire, better sights, and greater mobility.

defeating the French quickly by marching seven armies across Belgium. But after weeks of strenuous marching, a gap opened between their armies, and a desperate French effort halted the German advance at the River Marne. Very quickly improvised trenches sheltered soldiers on both sides from enemy fire, and within a few months trenches stretched all the way from the Swiss border to the North Sea. For the next four years repeated efforts to break through ever-more-complicated defenses failed to do more than shift the front by a few kilometers.

In the next four years, other states, as near as the Ottoman Empire and as far away as Japan, joined one side or the other, turning the conflict into World War I. In addition, mobilizing the home front to assure adequate war supplies transformed civil society, especially in Europe, as government officials, big business, and big unions collaborated to enlarge the output of munitions while rationing food and other civilian consumption. Welfare and warfare intermingled, since a healthy and contented workforce was essential to the war effort. When welfare wavered as food shortages set in, first Russia and then Germany would eventually have to stop fighting.

Shortages of coal and iron ore in France required purchases abroad from the start; both Britain and France imported grain, cotton, and manufactured goods from the United States in growing quantities. American bankers were soon making loans to finance such imports. Other purchases of food and raw materials from Asia, Africa, South America, and the islands of the sea also swept those lands into a transgovernmental, flow-through, managed economy designed to maximize the power of Allied armies. Germany and its allies did the same but on a lesser scale, since the British navy blockaded Germany in the North Sea and intercepted imports whenever it could.

The eastern front was always too lengthy to settle down to trench warfare, but there, too, neither side could win until shortages of food and ammunition began to cripple the Russians. Communist revolutionaries in Russia took power in November 1917 and made peace by ceding the Ukraine and other territories to Germany in March 1918. The fact that the United

States declared war against Germany in April 1917 more than compensated for this temporary German victory. More than a million American soldiers arrived in France by the time reinforcements from the east allowed the Germans to mount a final offensive. It met initial successes, but the French and British held and, with the help of American troops, reversed the tide of battle as growing shortages of food and ammunition weakened the Germans. On 10 November 1918 an armistice signified the Allied victory a few days after socialists had seized power in Berlin. By then, about 10 million men had been killed in battle, and drastic economic disruption and enormous war debts threatened to paralyze Europe's future.

Across the next four years, peace was defined by a series of treaties. The victors sought to ensure themselves against German revenge by transferring marginal territories to neighboring states, demilitarizing the Rhineland, limiting the German army to 100,000 men, and more generally by organizing the League of Nations to keep the peace. Still more American loans were necessary before economic recovery came to Germany, soon followed by a New York stock market crash in October 1929 and years of deep, worldwide depression.

Widespread unemployment provoked a radical response in Germany, where Adolf Hitler brought his Nazi Party to power in January 1933, and in the United States, where Franklin Roosevelt proclaimed the New Deal three months afterward. In both countries, expanded government expenditures on roads and other public works did something to diminish unemployment, but the Depression ended only when wholesale rearmament, first in Germany, then more reluctantly in Britain, France, and the United States, prepared the way for World War II. Japan also militarized its economy beginning as early as 1931, when they invaded Manchuria and then attacked China in 1936.

World War II

In Europe, Hitler proclaimed the superiority of the Aryan race, blamed Jews and Marxists for Germany's defeat in 1918, and set out to undo that defeat by propaganda, diplomacy, and, if need be, by war. At

European merchants supply the best weaponry, contributing to their own defeat. • **Saladin (c. 1137–1193)**

first, France and Britain caved in, abandoning Austria and then Czechoslovakia to Germany in 1938; when Hitler made a surprising agreement with the Soviet Union (formerly Russia) and invaded Poland in September 1939, the French and British reluctantly went to war once more. This time, German war plans proved more successful, defeating Poland in 1939, France in 1940, and occupying Norway, Denmark, and the Low Countries (Belgium, the Netherlands, and Luxembourg) as well as the Balkans. But bombing London failed to persuade the British to surrender, and the British navy frustrated plans for a cross-channel assault, so in 1941 Hitler decided to attack the Soviet Union instead, expecting another swift and easy victory.

The initial attack carried German tanks and mechanized infantry deep into the Soviet Union, besieging Leningrad and reaching the outskirts of Moscow by December 1941. Winter cold and supply shortages then forced German armies to a halt exactly when a Japanese naval attack on Hawaii's Pearl Harbor brought Americans into the war. Roosevelt had already aided Britain short of joining the war, and Hitler reacted to the news of Pearl Harbor by gratuitously declaring war on the United States. He thus relieved President Roosevelt of what might have been an insurmountable obstacle to following his preferred strategy of defeating Germany first, on the ground that Hitler's power was more threatening than anything the Japanese could offer.

From then on the course of the war depended very largely on the flow of supplies of every kind from farms and factories to battlefields scattered all the way from the Solomon Islands in the southwest Pacific to Stalingrad on the Volga River, and from Alaska to Burma. The Germans never really integrated their war plans with the Japanese. Transport was too difficult, and trust was scant. The Anglo-Americans did far better, establishing joint commands and concerting economic and strategic plans more efficiently than had been done in World War I. Soviet armies benefited from food and trucks that reached them from America, although trust between the Soviet leader Joseph Stalin and the Anglo-

Americans was never firm. And the Soviet Union, like France in World War I, manufactured nearly all the tanks, artillery, and airplanes the Red Army needed to drive the Germans back, beginning with a successful counterattack at Stalingrad in September 1942 and breaking the Leningrad siege in January 1943. A little earlier, the Battle of Midway (June 1942) turned the tide in the Pacific.

Hard fighting continued until 1945, involving massive air attacks on Germany, a successful Anglo-American cross-channel invasion in 1944, and continued Soviet advances all the way to Berlin. With defeat certain, Hitler committed suicide on 30 April 1945, leaving others to surrender in the early days of May. The Japanese fought on, as American forces advanced across the Pacific, but finally surrendered after American airplanes dropped atomic bombs over Hiroshima and Nagasaki in August. Formal surrender on 2 September 1945 ended a struggle that resulted in about 22–25 million military casualties and the deaths of approximately 40–52 million civilians, including nearly 6 million Jews, the victims of the Holocaust. (Such unprecedented numbers, although they are still subject to historical research in the twenty-first century, reflect a dramatic and disturbing shift in the tactics of world powers that continues to resonate among us: the blatant targeting of civilian populations, whether by strategic bombing, population transfers, or persecution.)

Outlook in the Atomic Age

The atomic bomb was the most spectacular and frightening technology to emerge from World War II. Fear of seeing atomic clouds like those that towered over Hiroshima and Nagasaki have haunted international politics ever since. Innumerable other new devices—radar, proximity fuses, guided missiles, rockets, jet engines, and computers, to name only the most significant—also affected military, political, and civilian life during the war itself and thereafter.

When surviving Jews established the State of Israel in 1948 and forcibly expelled many thousands



of Palestinians, they aroused intense resentment among Muslims in general and Arabs in particular. Subsequent brief local wars favored Israel, with the help of arms and money coming mainly from the United States. And when Muslims resorted to acts of terrorism not only against Israel, but also against the United States (September 11, 2001), President George W. Bush (in office 2001–2009) declared the War on Terrorism, which reached the nine-year mark in 2010 with no end in sight. American forces invaded Afghanistan without eradicating all the terrorists who had found shelter there, then attacked Iraq and easily overthrew Saddam Hussein (1937–2006) only to provoke years of violence. Many people believe that as long as the United States supplies the Israeli armed forces with modern weapons and tolerates Israeli attacks on Palestinians and the sporadic establishment of new settlements on Palestinian land, then it seems certain that thousands of angry Muslims will continue to plan terroristic acts, often sacrificing their own lives in order to kill Israelis, Americans, and also Europeans.

Such terrorism may become a running sore, but fears of atomic disaster have so far remained no more than a bad dream. Even after the aptly nicknamed Cold War broke out between the United States and the Soviet Union, and the Soviets tested their first atomic warhead (1949), actual atomic attack failed to materialize. In the course of the next half century or so, other states—Britain, France, Israel, China, India, and Pakistan—also acquired atomic capabilities, yet none of them has yet employed an atomic warhead against an enemy. Nor have any of these governments ever approached the number of U.S. and Russian warheads and rockets poised and ready to deliver them anywhere on Earth.

Eventually, in 1991, Communist mismanagement of production, both for war and peace, provoked the swift and surprising dismantlement of the Soviet Union. Satellite Communist regimes in Eastern Europe also foundered, and a shaky balance of power between the new Russia and the rest of the world emerged. That tended to destabilize the atomic stand-off since the Russians became unable to guard all

their atomic installations as before. A similar meltdown in Pakistan, should it ever occur, would be far more dangerous since Muslim terrorists already abound within Pakistan's borders. As of 2010, terrorists had not acquired the fearful capability of atomic weaponry, though the threat remains for the foreseeable future.

Although an isolated explosion could be horrific, the fact remains that it is the great powers with large arsenals of warheads that may destroy human life on Earth if they ever launch an all-out assault on one another. The Russians, Americans, Chinese, and Indians have so far refrained. If that continues, humankind may yet survive despite our long-standing propensity and mounting capability for killing as many enemies as possible in times of war.

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See also Cold War; Technology—Firearms; Terrorism; World War I; World War II

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Warfare—Islamic World

Military conquest was important in the spread of Islam. Within twenty years after the death of Muhammad much of the Middle East had been conquered; within one hundred years Islam stretched from Spain to India. Muslim armies, fortified by gunpowder, professional armies, and revolutionary military techniques and tactics, experienced overwhelming global success until the nineteenth century.

The spread of Islam and the conquests of Muslim armies in the decades that followed the death of the Prophet Muhammad in 632 CE were events of world historical significance that have had far-reaching consequences down to our own time. By 650 CE, Palestine, Syria, Egypt, Iraq, and Iran had been conquered. Under the Umayyad dynasty (661–750 CE) the Islamic caliphate stretched from Spain in the west to India in the east and from southern Arabia to Central Asia. Although the caliphate dissolved into many Muslim states as early as the eighth century, Islam continued to spread among new peoples, including the Turks and the Persians, who both were to play major roles in Islamic history. Although no Muslim state existed in Spain by the sixteenth century, Islam made new advances in the Balkans and central Europe under the Ottoman Turks (c. 1300–1922). Of the major sixteenth-century Islamic empires, the Ottomans controlled parts of Hungary, the Balkans, Anatolia, and most of the Middle East, the Safavids (1501–1722/1736) ruled over Persia and parts of Iraq and Afghanistan, and the Mughals (1526–1857) conquered much of India. Although military conquest was important in the spread of Islam, in territories outside the effective radius of Muslim armies, such

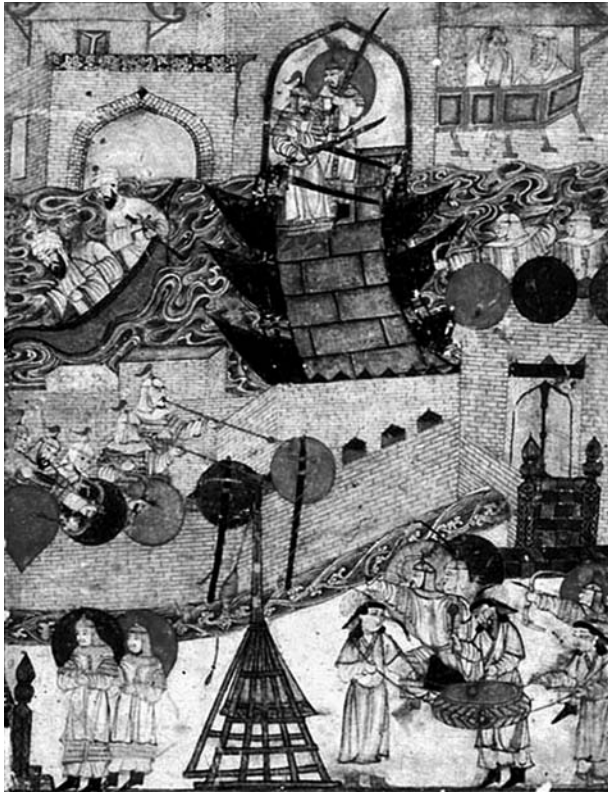
as the Indonesian archipelago, the Malay Peninsula, and parts of Africa, mass conversion was achieved via merchants and missionaries, making the spread of Islam in those regions a cultural rather than a military advance.

Expansion of Islam

Historians have tried to explain the remarkably swift and enduring Muslim conquests in many ways. Some have stressed the relative weakness of their opponents; others have stressed the effects of the plague or the power of the new religion (Islam) and ideology (jihad). Still others have emphasized the personal qualities of the first caliphs, the Ottoman sultans, and the founders of the Safavid and Mughal empires, as well as the valor of Muslim fighters. To this long list we should add the ability of Muslim rulers to establish professional armies and effective state bureaucracies and financial organizations.

Building on the foundations of ‘Umar ibn al-Khattab (reigned 634–644), the caliph who established the first garrison towns and the first registers of the names and salaries of the troops, the Umayyads completed the transformation of a tribal migration into a professional army. Around 700 CE, the soldiers in the garrison cities throughout the caliphate might have numbered some 250,000 men. The soldiers were paid in minted coins and supported by an efficient logistical system and bureaucracy.

Starting in the 830s, the Abbasid dynasty (749/750–1258) began to recruit Turkish-speaking mounted archers from Central Asia, predominantly as slave soldiers. Though only a couple of thousand in number, their new military technique (mounted



Miniature depiction of the Battle of Ain Jalut in 1260 CE, during which the Mongols, led by Chinggis Khan's grandson Hülegü, were defeated by the Egyptian Mamluks. German National Library.

archery), tactics (feigned retreat), skills in horsemanship, and superior horses added considerably to Muslim armies' speed, maneuverability, and firepower. Soon, most Muslim armies were dominated by Turkish soldiers.

The military slave system not only revolutionized Muslim warfare, it also had far-reaching political consequences. Recruited from among outsiders with no "political baggage" and entirely dependent on the state for its subsistence, the slave soldiers were a loyal and effective force. Isolated from the rest of the society, however, their main concern was to preserve their status by dominating the government and policy. This led to the Abbasids' loss of control over their empire and the emergence of local dynasties and military dictatorships as well as to bitter wars among competing dynasties.

In the west, the Spanish Umayyads (756–1031), Almorhads (1130–1269), and the Nasrids (1230–1492) not only held on to their conquests for shorter or longer periods in Spain, they also established flourishing

cultural centers (Cordova, Seville, Granada). In the east, the Turkish Ghaznavids of Afghanistan (977–1187) spread Islam to the Punjab, laying the foundations of the religious division of the Indo-Afghan frontier, the latest consequences of which have been the creation of Pakistan in 1947 and the conflict between Pakistan and predominantly Hindu India.

In the wars within Islam, the division between Sunni and Shi'a Muslims played a crucial role. The Shi'a Buyids (c. 945–1055) and Fatimids (909–1171) launched several campaigns against their Sunni rivals. The Buyids' rule was ended by the Sunni Seljuks (1038–1157), while the Fatimid Empire was extinguished by Saladin (1137/38–1193), the founder of the Ayyubids of Egypt (1169–1252). Saladin also distinguished himself against the crusaders, defeating them in the battle of Hattin (1187) and recapturing Jerusalem, Islam's third-holiest place.

Of the conflicts with non-Muslims, the Mongol invasion in the 1250s had far greater impact on the history of the Islamic heartlands than the crusades. In 1258 Hülegü, Chinggis (Genghis) Khan's grandson, eliminated the last vestiges of the Abbasid caliphate. However, in 1260 the Mongols were defeated in Syria and driven back by the Mamluks of Egypt. The Mamluk sultanate (1250–1517) was the most sophisticated of the military states set up by Turkish slave soldiers in the Middle East, with a mobilizable professional cavalry numbering between forty thousand and seventy thousand in the late thirteenth century.

The experience of the various Islamic states with firearms varied greatly, and the nature, success, or failure of this experience depended on historical, social, economic, and cultural factors rather than on religion. The Ottomans were especially successful in integrating gunpowder technology into their land forces and navy. Preceding their Muslim and Christian rivals, in the fifteenth century the Ottomans set up permanent troops specialized in the manufacturing and handling of firearms: artillerymen, armorers, bombardiers, grenadiers, and the Janissaries, the sultan's elite slave soldiers, recruited through the child levy from among the empire's Christian population. The Ottomans also established a robust arms

My Palestinian intellectual friend tells me that he might be willing to admit that God in Hebrew said Jews could have Israel. But he said Allah did not speak it in Arabic to the Arabs. • Arthur Hertzberg (b. 1921)

industry that made their empire largely self-sufficient in weapons and ammunition until the mid-eighteenth century. Favorable geopolitical location, ample resources, efficient central and provincial bureaucracy, talented statesmen, well-trained and well-equipped professional soldiers, and superior logistics made the Ottoman army—with deployable troop strength of eighty to one hundred thousand—a formidable force.

Before the Nineteenth Century

Eurocentric narratives of Islamic history concentrate on the clash between Crescent and Cross, as well as on the supposed superiority of the “West.” But wars within Islam and against non-Muslim enemies other than Christians were equally important. Similarly, the triumph of the West is largely a phenomenon of the nineteenth and twentieth centuries, and to project that triumph back into earlier centuries is anachronistic.

While the Ottomans devoted considerable resources to their wars against their Christian opponents (Byzantium, Venice, Hungary, Habsburg Spain and Austria, Portugal, and Russia), they also absorbed a dozen or so Turkish-Muslim principalities in Anatolia (fourteenth and fifteenth centuries), were defeated by Timur (1402), destroyed the Mamluk sultanate (1516–1517), and fought countless and exhausting wars against their Safavid Shi’a neighbor, Persia.

For the Safavids, not Portuguese imperialism, but the Ottomans, the Mughals, and the Shaybanid Uzbeks of Transoxania were the major threat. Safavid rule was ended by the Ghilzai Afghans of Kandahar in 1722. The Afghans in turn were overthrown by Nadir Shah (1736–1747), an able Turkmen general from Khorasan. Nadir waged wars against Persia’s traditional enemies, the Ottomans and Mughals.

When Muslim and Christian armies clashed in the sixteenth and seventeenth centuries, the Muslims usually had the upper hand. All this changed in the late eighteenth century. Russian success against the Ottomans (1768–1774, 1783, 1787–1791) and Napoleon’s invasion of Egypt (1798) signaled the shift in power between Islam and the West.

The Long Nineteenth Century

In response to European expansion, nineteenth-century Muslim rulers attempted to modernize their armies along European lines. While initial reforms concentrated on the technical aspects of warfare and thus brought only limited results, the destruction of the Janissaries by Sultan Mahmud II (reigned 1808–1839); the introduction of conscription by Muhammad Ali of Egypt (reigned 1805–1848) in the 1820s and by the Ottomans in 1838; and the establishment of military and naval academies and schools, staff colleges, and war ministries in Egypt and the Ottoman Empire were more significant reforms. Modernized Egyptian and Ottoman armies were successful against local guerrilla forces and insurrections, but were defeated by the combined forces of nationalism and Great Power imperialism. France occupied Algeria in 1830, while Britain occupied Egypt in 1882, chiefly to control the Suez Canal. Due to Great Power intervention, a series of national states were carved out in the Ottoman Balkans, and by 1878 Istanbul had lost most of the peninsula. But thanks to improved administration and communication made possible by the railway and the telegraph, the Ottomans not only kept Anatolia and the Arab lands, but under Abdülhamid II (reigned 1876–1908) they asserted firmer control over these lands.

During the nineteenth century, warfare also became more destructive for noncombatants. Serbian, Bulgarian, Greek, and Armenian Christian rebels, insurgents, and guerrilla forces, often with Russian support, killed Muslim civilians in the Balkans and Anatolia. Ottoman irregulars, often composed of recently arrived Muslim refugees expelled from Russian-conquered lands, and the regular Ottoman army retaliated with ferocity. About 600,000 Armenians perished in the Armenian massacres of 1915–1916 alone, while the number of Ottoman Muslim victims—those who perished or were killed or expelled from territories occupied by Christians—between 1821 and 1922 is estimated at about 10 million.

The military came to play an important role in politics. In the Ottoman Empire, the coup of the “Young

Turk” officers restored the constitution and left the government in civilian hands until 1913, when a military dictatorship took over. When the empire was defeated, occupied, and truncated by the victors of World War I, another Young Turk officer, Mustafa Kemal (Atatürk), led a successful war of liberation and created a secular nation-state, the Turkish republic. In Persia, Reza Khan, the leader of a Cossack brigade, seized power in 1921 and proclaimed himself Shah in 1925, ending the rule of the Qajars (1794–1925) and establishing the Pahlavi dynasty that ruled Iran until the 1979 Islamic revolution.

The Twentieth Century

From the end of World War II until the Suez Crisis in 1956, Britain and France dominated the heartlands of Islam. By creating states with artificial boundaries, they planted the seeds of future border disputes and wars (including, for example, Iraq’s invasion of Kuwait in 1990). The creation of Israel in 1948 and the first Arab-Israeli war had profound consequences for the future. For the victorious Jews it seemed that war and land grab rather than negotiations was the effective way to deal with the Arabs. For the Palestinians, of whom 700,000 became refugees, the war sent a similarly erroneous message: if they were to regain their homeland, they had to destroy the Jewish state, a policy abandoned only in 1988 when the PLO issued a call for a Palestinian state to coexist with Israel.

The Israeli-Arab conflict has involved various forms of organized violence. There have been atrocities and terror committed by both sides: open wars (1948, 1956, 1967, and 1973); Israeli military occupation of the West Bank and Gaza since 1967; Israeli invasion of Lebanon in 1982; unarmed Palestinian uprising; armed insurrection and guerrilla war against Israeli occupation; Palestinian assassinations and suicide bombers targeting Israeli soldiers, settlers, and civilians; Israeli-targeted assassinations of leaders of Palestinian military, paramilitary, and political organizations thought to be responsible for attacks on Israel; and punitive demolition of homes of Palestinian militants, terrorists, and their relatives.



Bedouin men line up in April 1921, shortly before Amir Abdullah was proclaimed ruler of the new Emirate of Transjordan, a territory of the Ottoman Empire before World War I. Library of Congress.

The superpowers were soon involved in the region, for economic reasons such as oil and political reasons such as containing Communism or imperialism (depending on the superpower). Instead of becoming directly involved militarily, the superpowers tried to tip the balance of power by arming their clients. The ensuing arms race made wars very destructive. In the Iraq-Iran war, in which Iraq’s use of chemical weapons outraged the world, some 1.5 million perished. Revolutions and military coups of various types also plagued the region.

The collapse of the Soviet Union left the United States as the sole superpower. The United States has established several military bases in Turkey, Saudi Arabia, Qatar, Bahrain, and Kuwait. Its role in the first Gulf War, its treatment of Iraq in the following ten years, and its strategic partnership with and support for Israel in the Israeli-Palestine conflict has fueled rage against the United States throughout the Muslim world. Anti-Americanism has been exploited by militant Islamist extremists whose terrorist attacks have targeted the United States and its allies, reminding the world that even the militarily most sophisticated and economically strongest societies are vulnerable. Continuing resistance to the United States and the U.S.-backed governments in Iraq and Afghanistan has shown the limits of Western armies in asymmetrical warfare.

On September 11, 2001, followers of Osama bin Laden, then based in Afghanistan, hijacked

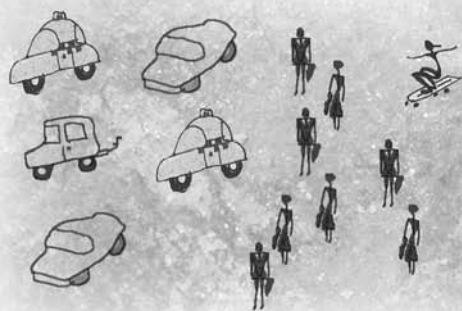
four civilian airplanes and flew two of them into the World Trade Center “twin towers,” landmark skyscrapers in New York that both burned to the ground; the third plane hit and burned part of the Pentagon, and the fourth crash-landed in western Pennsylvania. President George W. Bush responded by declaring a “War on Terror,” and the United States quickly invaded Afghanistan. With help from a few European governments, the Americans soon drove so-called Taliban fighters who sympathized with bin Laden from most of Afghanistan and installed an ineffective new government. Bush then attacked Iraq in 2002, where Saddam Hussein’s brutal, secular government precariously presided over an Arab majority, bitterly divided between Sunni and Shi’a forms of Islam (resembling Catholic–Protestant conflict of past times) and a discontented Kurdish-speaking Sunni population in the north. Easy initial victories in Iraq provoked years of sporadic violence, until 2008 when the Americans negotiated an agreement with an elected (but dubiously popular) government and promised to withdraw U.S. armed forces from Iraq within a few months. In the meantime, however, Taliban fighters had regained control of much of Afghanistan. Peace seems unlikely in any near future, especially since Muslim anger was heightened in late 2008 when Israel attacked Palestinians in Gaza with tanks and artillery.

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See also Islamic World; Terrorism; ‘Umar ibn al-Khattab

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Warfare—Japan and Korea

Military conflicts occasionally occurred between Japan and Korea in the first millennium CE, although scholars debate the nature or even the existence of permanent Japanese military outposts on the Korean peninsula. China was a participant or target of both nations, but Western involvement in war was not a factor for Japan and Korea until the late nineteenth and the twentieth centuries.

During the long histories of Japan and Korea, there were many times that their respective experiences with warfare would intertwine, with military forces moving from the Korean peninsula to the Japanese islands and vice versa on a number of occasions in the past two millennia. For the most part, however, warfare in Japan and Korea went their separate ways.

Premodern Korea

The great Chinese dynasties sought to control the Korean peninsula as one of many areas on the periphery of Chinese civilization. Thus, China's Qin and Han dynasties (221–206 BCE and 206 BCE–220 CE, respectively) both made attempts to conquer the peninsula. The Korean kingdom of Koguryo (37 BCE–668 CE) defended itself adroitly, but the Han did establish a commandery in present-day P'yongyang. As the Han declined in the early third century CE, however, two other kingdoms on the peninsula rose to increasing prominence—Paekche (18 BCE–663 CE) in the west and Shilla (57 BCE–935 CE) in the east, with Shilla—aided by China's Tang dynasty (618–907 CE)—eventually incorporating the other two in the seventh century to

form a single state. Kaya, a small tribal confederation in southern Korea had been subsumed into Shilla in the sixth century. The relationship between the various Korean kingdoms and the clans on the islands of Japan is hotly argued. Japanese textbooks maintain that there was a Japanese military outpost in southern Korea and that Japanese forces were called upon to aid the various kingdoms in their conflicts with one another in the fourth and fifth centuries, but many scholars, both Korean and Japanese, have insisted that there is no evidence of a permanent Japanese outpost and dispute the nature of Japanese military activity. Most scholars agree on the major contributions Korean culture made to what came to be the dominant culture in Japan in the early centuries CE.

One aspect of Shilla's social structure that contributed to its attaining preeminence over its neighbors was the *hwarang*, an elite group of young warriors who lived by a moral code that emphasized loyalty, filial piety, and courage; it also opposed indiscriminate killing. The Shilla kingdom also established a strong naval defense of the peninsula's coastal regions.

The Rise of Koryo

Shilla gradually lost control over its territories in the ninth century, and the kingdoms of Later Koguryo and Later Paekche asserted independence. In 918 a general of the Later Koguryo kingdom announced the establishment of the Koryo kingdom (918–1392), and in 935 Koryo defeated the remnants of the Shilla state. Koryo also defeated Later Paekche, and in 936 the Korean peninsula was reunited. The Koryo rulers constructed a wall along their northern border to help keep out marauding nomadic Turks and Mongols,



Sato Masakiyo Conquers Korea (1874). Triptych print in which elaborately uniformed warriors also rein in a horse and tame a tiger. Attributed to Utagawa Yoshikata. Signed by Ishinsai Yoshikata, engraved by Horiko Kanegoro.

and they alternately allied with the Chinese Song dynasty (960–1279) and the Khitan Mongols to help preserve their independence.

Koryo began to break apart in the twelfth century; invaded by the Mongols in 1231, it was a vassal state of the Mongol Empire from 1270. Like Shilla, Koryo was a strong naval power; its navy made use of cannon and gunpowder in the late fourteenth century and used naval guns to turn back a Japanese maritime invasion in 1380, destroying more than five hundred Japanese battleships.

The Choson (Yi) Dynasty

Weakened by its dealings with the Mongols, the Koryo kingdom fell in 1392 to Yi Song-gye (1335–1408), a military leader who had risen to prominence battling the Mongols. Yi became the first king of the Choson dynasty (1392–1910).

Perhaps the most famous element in Choson's military history is the development and deployment of the turtle ships—armored warships—in the sixteenth century. They were developed by the military hero Yi Sun-shin (1545–1598), who used them to repel the invasions of the Japanese general Toyotomi Hideyoshi (1536/7–1598) not once but twice, in the

1590s, though aid from China was decisive in defeating those Japanese forces that made it to land.

Premodern Japan

During Japan's Nara and Heian periods (710–794 CE and 794–1185, respectively), the aristocratic ruling elite made use of subordinate military clans for protection and to extend Japan's frontiers east and north, pushing back the indigenous population, the ancestors of today's Ainu (originally Siberian people now found only in Hokkaido, Japan's northernmost major island). These military clans became more and more powerful, until in the late twelfth century one clan, the Taira, became the de facto rulers of Japan, only to be replaced by a rival clan, the Minamoto, whose leader, Minamoto Yoritomo (1147–1199), ruled Japan as supreme military commander, or shogun. The Kamakura period that followed (1185–1333), named for the seat of Minamoto power, witnessed the beginnings of a distinctive Japanese feudalism. Samurai, as members of the warrior class came to be known, ideally lived ascetic, disciplined lives guided by codes of loyalty and honor. They could carry two swords—a long sword for fighting and a short sword for ritual suicide to atone for failings and embarrassments.



Japanese swords are famous for their hardness and sharpness.

The Mongol Invasion

After establishing the Yuan dynasty (1279–1368) in China, Mongol leaders looked across the narrow waters at Japan. The result was two great, Mongol-ordered, mostly Chinese- and Korean-supplied invasions of Japan, whose defeat gave rise to the kamikaze legend. In 1274 Khubilai Khan (1215–1294) sent forty thousand men on nine hundred ships to Hakata Bay, on the southern island of Kyushu. The Mongol-Korean army overwhelmed the Japanese defenders with the famed Mongol cavalry, explosive missiles, and powerful composite bows. As the Japanese retreated to the fortress of Dazaifu, and the Mongols to their ships in the harbor, a great typhoon blew through and destroyed more than two hundred Mongol ships, causing the invaders to retreat to Korea and China. In 1281 Khubilai Khan sent a larger army, 140,000 men, back to Hakata Bay. The Japanese had prepared by constructing a stone defensive wall, but the Mongol invaders enjoyed early success. But several weeks after landing, yet another typhoon, which Japanese religious leaders called a divine wind, or *kamikaze*, blew through and once again destroyed much of the Mongol navy and ended this threat to Japan.

Ashikaga Rule

The economic and military strain of defending Japan from the Mongol attack contributed to weakening the Kamakura government, which in 1333 was overthrown by an imperial claimant determined to return de facto power to the imperial throne. The claimant's initial backer, the general Ashikaga Takauji (1305–1358), eventually betrayed the cause and established himself as shogun, but Ashikaga rule (also known as the Muromachi period, 1333–1573) was much more decentralized than Kamakura rule had been, and Japan descended into civil war in 1467 that lasted for more than a hundred years. Toward the end of this century of war, Portuguese ships

arrived bringing missionaries and firearms, which, by making it possible for a peasant foot soldier to kill a mounted warrior easily, portended the eventual end of the samurai class.

Reunification of Japan

In the 1570s, three great unifiers ended the century of warfare. Oda Nobunaga (1534–1582) officially brought the Ashikaga shogunate to an end with his capture of the capital city of Kyoto in 1573; he was proceeding to bring Japan under his sway when he was killed by a vassal. Toyotomi Hideyoshi, Nobunaga's best general, completed the job of reunifying Japan. Although himself of humble origins, Hideyoshi reasserted the division between warriors and nonwarriors, confiscating swords and firearms from all nonwarriors in 1588. Dreaming of vaster empires, Hideyoshi attacked Korea with an eye toward China; upon his death the Japanese evacuated Korea. Hideyoshi, like Nobunaga before him, left only an infant heir, and like Nobunaga, Hideyoshi's eventual successor was an able general, Tokugawa Ieyasu (1542–1616), who established a new shogunal government with its capital at the city of Edo (present-day Tokyo).

The most salient feature of Tokugawa foreign policy was its closing off of Japan from the rest of the world. The Dutch—the only Europeans permitted to trade with Japan after 1639—were allowed only on the tiny island of Deshima in Nagasaki harbor; the Chinese were permitted entrance to Nagasaki itself. All other contact between Japan and the rest of the world was forbidden. Trade with Korea was permitted on the islands of Tsushima between the two countries. With the suppression of a revolt of Christian peasants and masterless samurai in Shimabara (in western Kyushu) in 1637–1638, Japan entered a period of peace that lasted more than two hundred years.

Nineteenth-Century Warfare

The coming of the modern West to eastern Asia in the mid-nineteenth century helped precipitate a



Utagawa Kokunimasa, *Our Army's Great Victory at P'yongyang Castle* (1894). Japanese officers look at maps and review the progress of battle taking place outside the fortress at P'yongyang. Library of Congress.

major change in Japan. The Tokugawa shogunate (1600/1603–1868) had grown old and had lost energy, and the arrival of eight ships under U.S. commodore Matthew Perry in the mid-1850s, demanding trade, helped bring it down. Samurai from provinces that had been on the periphery of power during the Tokugawa shogunate orchestrated the overthrow of the shogunate and called for the reestablishment of the emperor to power. After this Meiji Restoration (1868), Japan set about securing itself from European domination by modernizing itself furiously—not least its military.

War with China and Russia

In 1894, Japan intervened in internal Korean politics to force a Chinese reaction, which brought about the brief Sino-Japanese War (1894–1895). The small but modern and well-led Japanese army and navy quickly defeated the larger, older, outdated, and poorly led Chinese forces, which resulted in the Treaty of Shimonoseki, through which Japan gained Taiwan and the Liaodong peninsula of Manchuria. Its acquisition of the latter brought about the Triple Intervention of Russia, Germany, and France to preserve Russia's interest in China's northeast. Tension between Russia and Japan continued for a decade, culminating in the

Russo-Japanese War (1904–1905). A Japanese fleet attacked the Russian fleet at anchor at Port Arthur in southern Manchuria; fighting continued for more than a year. Hard fighting and huge losses sapped the strength of both sides, and they agreed reluctantly to a U.S.-brokered peace (the Treaty of Portsmouth). Japan had demonstrated its might not only against other Asian nations, but against a Western power. The Treaty of Portsmouth recognized Japan's interests in Korea, and, emulating Western imperialism, in 1910 Japan annexed Korea.

The Second Sino-Japanese War and the Pacific War

In 1931–1932, the Japanese seized control of Manchuria from China; in 1937 the second, and much larger, Sino-Japanese conflict began. Japanese atrocities during that conflict, including a massacre of 100,000–300,000 in Nanjing, have made for cool relations between the two nations ever since.

Japan's surprise attack on the U.S. Navy at Pearl Harbor in 1941 was designed to keep the United States from interfering in Japan's plans to build a self-sufficient empire in Southeast Asia. Following the attack, Japan took control of the Philippines, Indochina, Thailand, Burma, and the Dutch West Indies,



Hanosuke Kuroki, *Japanese and Russian Cavalry Troops Clash Near Chonju, North P'yongyang Province, Korea (1904)*. Library of Congress.

as well as numerous islands in the Pacific. When the tide started turning against the Japanese, privations at home grew great; the government encouraged the people by emphasizing the strength of the “Japanese soul”; recalling the thirteenth-century victory over the Mongols, young recruits were transformed into kamikaze suicide pilots to attack enemy ships. But in 1945, after experiencing two atomic bombs, Japan surrendered. The U.S.-imposed constitution required Japan to foreswear all future military aggression. Although the constitution forbade it, Japan now maintains a very credible Self Defense Force with an army, navy, and air force.

The Korean War

In August 1945, to fulfill a promise made at the Yalta Conference and reiterated at the postwar Potsdam Conference, the Soviet Union transferred a great many divisions to the Far East, sliced through the weakened Japanese army in Manchuria, and quickly moved into northern Korea. Meanwhile, beginning on 15 September, the U.S. Army's Fifty-Fourth Corps liberated Korea south of the 38th parallel. Within several years there were highly antagonistic regimes on both sides of the tense border and, on 25 June 1950, war erupted when 135,000 troops from the

north, backed by Soviet T-34 tanks, invaded the more lightly armed south.

The Korean War had five phases. The North Koreans pushed south, and U.S. president Harry Truman committed U.S. armed forces to slow the North Korean rush and to maintain a perimeter around Pusan, in the southeast, as a base for reinforcements and supplies. Beginning on 15 September, the United States, the Republic of Korea (South Korea), and some United Nations forces broke out of the Pusan Perimeter to link up with a daring amphibious invasion at Inchon. This counteroffensive carried the U.N. forces up to the Yalu River separating Korea from China and the Soviet Union. When the United States ignored Chinese demands to halt, the new Communist rulers in Beijing sent in troops, and in this third phase veteran Chinese Communist divisions slipped behind and around isolated U.S. and South Korean forces, driving them back across and slightly below the 38th parallel. Truman relieved General Douglas MacArthur of his command, and in the fourth phase the U.N. forces, commanded by General Matthew Ridgway, drove the Communists back across the parallel by early spring 1951. The fifth phase consisted of a twenty-seven-month period to negotiate the truce that currently reigns on the peninsula, where tensions continue to exist, fanned

in the twenty-first century by fears of North Korean nuclear weapons.

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See also Japanese Empire; Korea; World War II

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Warfare—Logistics

The components that support strategies and tactics of warfare—such as equipment, transportation, food, and housing—are called *logistics*. Modern developments that have improved military logistics include banks and lending institutions, railroads, and computers. In recent years people have used the term *logistics* to refer to an approach to supply-chain management in business and industry, particularly with regard to multinational corporations, that is based on military procedures.

The term *logistics*, first used by the Swiss military theorist Baron Antoine-Henri de Jomini (1779–1869) in his *Summary of the Art of War* (1837–1838), embraces troop mobilization, reinforcement, and replacement; weapons, ammunition, and matériel production, procurement, transportation, and handling; catering and canteen services; construction engineering; organization of military and civilian labor forces; equipment and maintenance; medical services; housing; pay and welfare; mail; fuel; and transportation of troops and supplies. To Jomini logistics was of equal importance with strategy and tactics, but his more influential contemporary, the Prussian military strategist Carl von Clausewitz (1780–1831), saw logistics as subordinate to them.

As soon as human groups began to fight one another, they discovered that their ability to prevail over an opponent required careful attention to providing their fighters not only with weapons but also with continuous access to all the necessities of life and doing so in such a way that their fighters could maximize their power, their mobility, and the range in which they could be effective. If the fighting force was

self-contained, carrying all of its necessary supplies, it would be powerful and move quickly but only for short distances. If the fighting force relied on local supply, feeding on the agricultural production of the area of operations, it could operate only in fertile areas during or just at the end of growing seasons. If it was supplied from bases that already existed in its own rear area or that were constructed as the force moved, it would be powerful and could range far but not quickly.

Ancient Warfare

Early in the second millennium BCE the Assyrian Empire deployed an army of more than a hundred thousand men. This army had a central military barracks with arsenals of weapons and a system for procuring the enormous number of horses needed for cavalry, chariots, and pack trains. Moreover, it had access to the services of a government bureau that provided forced labor for military building projects. Moving within the empire, Assyrian troops were issued travel rations from provincial supply centers, but after they moved beyond its borders and into enemy territory they lived off the land, which both diminished their need for a supply train and damaged their enemy's agricultural infrastructure. As much as possible, their line of advance took advantage of rivers and other waterways to transport materials, especially the huge siege engines, which were devices used to attack enemy fortresses.

People know of King Alexander of Macedon (Alexander the Great, reigned 336–323 BCE) for his brilliant leadership in battle, but his fabulous conquests were in large measure because of his careful and



Captain Eugene C. Cheatham of Montclair, NJ, serving with the Fifth Air Force's 67th Tactical Reconnaissance Wing at an advanced Korean airbase in July 1951, interprets aerial photographs taken by photo-reconn aircraft. National Archives.

thorough logistical arrangements. When he marched into Asia, he made sure that his troops carried as much gear and supplies as possible, eliminating the need for a long and slow train of baggage carts. He stayed close to the sea as long as he could and used inland waterways as well to utilize the superior carrying capacity of ships over carts. Often his spies and advance scouts bribed enemy officials not to destroy warehouses or crops before Alexander's troops could seize them, and he kept these officials on when he conquered their territory to take advantage of their ability and expertise. Ranging as far as India, he still managed to keep a line of communication back to Greece and Macedon to enable him to govern the full extent of his conquests and maintain a steady supply of reinforcements. With such arrangements his army could march 24 kilometers a day and covered 18,000 kilometers in eight years.

The ancient Romans were famous for building roads whose extent and engineering were a major element in the Romans' ability to move and supply their armies and create an empire extending from Britain to southwest Asia. Less noted was their development of the important logistical function of medical care, which was aimed not only at caring for those wounded in battle but also at ensuring the general health of the troops. Permanent Roman army camps had bathhouses to foster cleanliness, and the water from these bathhouses was used to flush the sewers

and latrines, which are a major health problem for any large military force. Every army camp, every large fortress, and even many smaller fortresses had a hospital staffed by doctors expert in amputation of limbs, extraction of arrows, treatment of skull fractures, and other necessities of military medicine. Armies on the move had field orderlies to assist the wounded on the battlefield and move them to field hospitals. These medical services played an important part in maximizing the power of the Roman army.

Medieval Warfare

Before the early modern era the biggest problem of logistics was the provision of an adequate and constant food supply for men and horses. The Mongol conquests of the twelfth century CE in south Asia, Central Asia, southwest Asia, and Russia, as well as the Mongol attacks into Europe, were made possible not only by their tactical audacity and innovations, but also by the fact that their horses could travel 96 kilometers a day and subsist on grass, unlike European horses, which needed large supplies of grain. The Mongol penetration of Europe was halted west of the central European plain largely by the unavailability of sufficient pastureland. The significance of horses in logistics is obvious from the Agincourt campaign of 1415 when the English king, Henry V (c. 1386–1422), had to scour his realm for the twenty-five thousand horses needed to mount the cavalry portion of the six thousand men he took to France and to haul supplies for the entire force. Henry's logistics train also included 60 grooms, 86 yeomen (attendants), 120 laborers, 120 miners, 124 carpenters, and 20 surgeons. To finance this effort, Henry had to take loans and break up one of his crowns to use the pieces as collateral.

Modern Warfare

We should not be surprised, then, that one of the greatest logistical breakthroughs in warfare was the development of banks and other financial institutions that let rulers and states raise more money for military

War is the unfolding of miscalculations. • **Barbara Tuchman (1919–1989)**

supplies and payrolls and to pay back the money over longer periods of time. This breakthrough enabled European states during the seventeenth and eighteenth centuries to keep professional standing armies and to equip them well. Even so, the expense of these armies and their supplies meant that the armies were kept relatively small and that they fought with a constant eye on their lines of communication back to their bases. When mass armies were recruited by Emperor Napoleon Bonaparte (1769–1821), they could stay in the field only by supplementing their stores with foraging. When Napoleon's Grand Army of 400,000 men invaded Russia in 1812, however, the army could not find enough forage. Its horses and men died in droves before they reached Moscow, from which they had to retreat over territory that they had already picked clean; only 30,000 men survived.

The Industrial Revolution transformed warfare by providing deadlier weapons and the means for manufacturing them in huge quantities and shipping them more quickly and less expensively. No invention of the time was more important than the railroad. During France's 1859 war against Austria, France deployed 604,000 men and 129,000 horses by railroad to northern Italy in just eighty-five days. During the U.S. Civil War, which began two years later, campaigns were built around the movement of troops and supplies by railroad, and railroads became targets of military action. The Prussian chief of staff, Helmuth Karl von Moltke (1800–1891), incorporated railway schedules into his plans for troop mobilization, deployment, and resupply, insisting that resources should no longer be wasted on frontier fortifications but instead should be used for the strategic development of railroads.

The organization of the complex process of industrial production was also important for the development of logistics. Using structures and concepts drawn from business firms, the Union Army during the U.S. Civil War developed the modern model of military medical services, integrating battlefield assistance to the wounded, evacuation to field hospitals, organized surgical care, and careful record keeping

to provide a seamless and documented treatment of the wounded.

The Two World Wars

The impact of industrial organization and production upon logistics became glaringly apparent in World War I. The very outbreak of the war was dictated by German planning that tied troop mobilization, deployment, supply, and operations so closely together that Germany could not respond to any mobilization of troops by any European power in any other way than by attacking deeply into France through Belgium, a war by timetable that failed in part because German planners put more troops on roads and railroads than could be moved rapidly enough to keep to the plan. Hostilities having begun, Germany had to supply its armies in France, deep inside Russia, and later in Romania while sending munitions and matériel to its allies Austria-Hungary, Bulgaria, and Turkey.

Britain had to move troops and supplies constantly across the English Channel, bring troops to Europe from India and Africa, and send troops from Britain to Turkey, the Balkans, Italy, and southwest Asia while battling German submarines in the approaches to the British Isles to assure a constant and sufficient flow of food and raw materials. All of the belligerents needed maximum production from farms and factories to keep their economies functioning while making war on an undreamed-of scale. The edge of the Allied powers (Russia, France, England, Italy, United States) was clear: between 1915 and 1918 they outproduced the Central Powers (Germany, Austria-Hungary, Ottoman Empire, Bulgaria) in coal production by 2.3 billion metric tons to 1.2 billion; in crude steel production by 150 million metric tons to 75 million; in aircraft frame production by 110,549 to 52,269; in aircraft engine production by 149,646 to 45,358; and in shipbuilding by 1,491 to 765. World War II featured even more impressive logistical feats, with the Allies (France, England, China, Russia, United States) producing seven times as many planes as the Axis (Germany, Italy, Japan), five times as many

trucks and artillery pieces, and four times as many machine guns and tanks. This material was delivered to the Russians by convoys around Norway, and to the Chinese by trucks via the 560-kilometer-long mountainous Burma Road or by plane from India over 24,000-kilometer-high mountains.

The Contemporary Era

During the years after World War II the superpower confrontation demanded the development of nuclear weapons stockpiles and increasingly sophisticated delivery systems alongside the maintenance of large armies and stocks of conventional weapons. At the same time peripheral wars such as those in Korea, Vietnam, Algeria, Afghanistan, and the Falkland Islands placed severe pressures on the military capabilities of the large powers and raised problems of rapid deployment and the use of special forces. During the post-Vietnam era the United States developed AirLand, a system of combined operations capable of meeting a Soviet offensive in Europe or deploying appropriate forces to Third World conflicts. Using this new mode of warfare in the 1991 Gulf War, the United States shipped 540,000 troops with 417,000 metric tons of ammunition; 300,000 desert camouflage uniforms; 200,000 spare tires; and 150 million rations into the theater of operations in less than four months. During the 2003 Gulf War, the 101st Division—17,000 soldiers; 5,000 vehicles; 1,500 shipping containers; and more than 200 helicopters—moved from Fort Campbell, Kentucky, to a forward base in Kuwait in just six weeks.

The handling of such complex tasks with such rapidity reflects the impact of the computer age on logistics, and just as the elaboration of operations management during World War II transformed business operations during the postwar era, so the military management of an almost infinitely complex supply chain has carried over into business. During

the past decade *logistics* has become a management buzzword, and business firms, whose procedures have often been adapted to military use, are adapting procedures tested by the military to conduct business on a global scale.

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See also Military Strategy and Tactics; Warfare—Air; Warfare—Naval

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Warfare—Naval

The first recorded naval expedition took place about 4,500 years ago in Egypt. Although naval power has existed for millennia, it assumed indisputable importance with the wave of European exploration and colonization that began in the fifteenth century. Naval warfare has developed under three distinct phases—oars, sails, and steam—although new technologies such as batteries and nuclear power continue to develop.

Some form of naval power has existed since humans built their first cities along the great natural highways of the world: its rivers and seas. Navies developed to protect people, civilizations, and their waterways. When conflicts arose between nations, or when waterborne freebooters sought quick profit from those countries or their citizens, naval warfare often erupted.

Navies under Oars

The first record of a naval expedition is an Egyptian relief dating to 2450 BCE. Though each ship featured a large square sail, the vessel's single row of oarsmen propelled it into battle. An Egyptian temple carving of 1190 BCE depicts scenes from a large naval engagement against the Sea People. Archers provided ranged fire, stout bulwarks protected rowers, and spearmen in armor waited to fight their way aboard enemy vessels. The Ugarit Tablet, also dated to 1190 BCE, contains the first written report of a naval battle, fought between the Hittites and the Sea People off Cypress.

Despite the fact that navies arose throughout the Mediterranean, the topic of sea power is typically

associated with the rise of the Greek city-states because of the efforts of two early fifth century BCE historians, Herodotus, writing on the Persian Wars of the 490s and 480s BCE, and Thucydides, who wrote about the Peloponnesian War of 431–404 BCE. The navies described by Herodotus and Thucydides depended on galleys driven by one (unireme), two (bireme), or three (trireme) banks of oars. Also known as longships, these vessels featured high length-to-width ratios, relatively flat bottoms, bronze- or metal-sheathed wooden rams, and masts and sails for cruising. These galleys were extremely fragile and because of their shallow draught lacked holds to carry supplies. They typically operated within easy reach of land, both to shelter them from severe weather and to allow the crews to beach the vessels at night to forage, to water (the technical term for replenishing a ship's supply of water), and to prepare food. The roundship, of deeper draught, smaller length-to-width ration, and driven by sail and oars, served as the auxiliary vessel of the day. Their larger hulls transported troops and supplies. Roundships were often the critical element of any invasion (for example, the destruction by storm of a Persian support fleet in 492 BCE delayed an invasion of Greece by two years).

Though archery and boarding occurred during battles, the chief tactic of the time appears to have been ramming enemy vessels. Specific maneuvers emerged to support ramming, such as the *periplus* (the extension of the line of battle to flank enemy vessels), the *diekplus* (an attack in column to shear enemy oars and split the enemy battle line), and the *kyklos* (a circular defensive formation). Greeks also pioneered naval strategy, especially the interdiction of enemy supply lines through raiding or blockades



The battleship USS *Pennsylvania*, followed by a fleet of cruisers, supports an American landing in the Philippines in 1944.

and the naval support of invasions. Over time, other cultures placed their stamps upon the Age of Oars. For example, the Phoenicians developed superb navigational skills, while the Romans made ramming secondary to boarding, turning their superb legions into marines through the use of the *corvus* (a boarding ramp) and *harpax* (a machine to fire grapples).

Naval engagements under oars stretched across over four thousand years of recorded history, from the battles of Egyptians and Sea People to the last large fleet action between galleys at Lepanto in 1571 and beyond. Two events sounded the death knell of the oar-driven warship, the venturing of Europeans across the stormy Atlantic and the introduction of cannons. Together they would usher in a new era in naval warfare.

Navies under Sail

The powerful waves of the Atlantic called for a hardier construction than the gentler waters of the Mediterranean. The clinker-built longships of the Vikings served for raiding and eventual exploration and settlement of Iceland and Greenland, but it was the roundship that rapidly came to dominate European navies. Ideally suited for trade with their deep hulls, nations converted these merchant ships to warships in times

of conflict by adding a tower at the bow and stern. Soldiers supplemented the normal crew, ready to unleash arrows at the enemy before boarding; at Sluys in 1340, the English sent 250 ships against the French; all but three or four had formerly been merchantmen. Only with the development of the cannon would combat transition from an emphasis on melee to the use of the warship as a fire platform. The roundships stretched longer in relation to their beam, with cannons mounted along their sides to maximize firepower (thus firing “broadside”). Cannons, mounted on naval carriages that could be drawn inboard for rapid reloading, fired through closeable embrasures cut in the side of the vessel. The resulting shift in tactics was most noticeable during the confrontation between an English fleet relying on firepower and maneuver and a Spanish fleet more dependent on the older boarding techniques. This pivotal campaign of 1588 saw the Spanish Armada driven from the English Channel by a combination of English cannon and adverse weather.

Naval vessels also played the key role in opening the remainder of the world to European hegemony. Beginning in the late 1400s, Portugal’s naval vessels rounded Africa and began an exploitation of India and Asia that would be continued by, most notably, Great Britain. In the Western Hemisphere, Spain’s arrival in the New World signaled the beginning of

He is the best sailor who can steer within fewest points of the wind, and exact a motive power out of the greatest obstacles. • **Walter Scott (1771–1832)**

naval conflicts that lasted throughout the Age of Sail, as Spain struggled with England, France, and Holland for control of the new rich lands. As the Europeans squabbled among themselves, their American colonies rebelled, and in the process of rebellion found it necessary to rely on converted merchantmen, privateers (privately owned vessels sailing under a government commission known as a letter of marque), and allied naval forces to secure eventual victory.

The age of sail reached its apogee during the Napoleonic Wars of 1800–1815. Great Britain alone carried over a thousand vessels on its naval lists manned by more than 140,000 men and officers, and supported by the largest naval infrastructure in history. An estimated 20 percent of the adult population of England owed at least part of their livelihood to the British Admiralty by 1812, and the national treasury was rapidly depleted supporting that institution despite heavy tax rates and continued income from the largest merchant fleet in the world. The Battle of Trafalgar in 1805 confirmed the ascent of Britain's Royal Navy to world dominance. That dominance continued for another century, but the coal-fed fires of the Industrial Revolution soon eclipsed the Age of Sail.

Navies under Steam

Conservative naval hierarchies initially resisted use of the first steam engines, but by the mid-1800s, the advantages of an unwavering source of propulsion outweighed the disadvantages of dirty decks and space lost to coal bunkers. The Industrial Revolution created a pace of change in propulsion unheralded in earlier ages. In the 1830s steam engines driving side paddle wheels served as auxiliaries to sails. By the 1860s the navies of the American Civil War (1861–1865) developed ironclad hulls moved by steam-driven propellers. In the 1880s rapid improvement in steam engines allowed sails to drop to an auxiliary form of power. By the Spanish-American War of 1898 and the Russo-Japanese War of 1905, sails had disappeared from new warship classes. As World War I (1914–1918) approached, oil began to replace coal and the newest type of naval vessel, the

submarine, used electric batteries for subsurface propulsion. Less than fifty years later, nuclear powered warships began to move across, and beneath, the waves.

The Industrial Revolution also permitted changes in metallurgy, chemistry, and other sciences, which in turn accelerated change in all other aspects of naval technology. Whereas the ironclads of the American Civil War engaged at ranges of a few hundred yards or less, in 1905 the Japanese opened accurate fire on the Russians at over 5,000 yards. By the 1940s ships engaged at ranges triple those of 1905, and aircraft launched from carriers extended that range to hundreds of miles. By 2000 the use of ship- and air-launched missiles, as well as air-to-air refueling, moved the hypothetical engagement range well beyond 1,000 miles. Faced with ever deadlier weapons, strategies for ship protection were continually revised. At first designers fastened armor to wooden and iron hulls (ironclads). Later, steel hulls incorporated protective belts of armor across vital machinery and magazines, as well as thick turrets for guns. Increasingly after World War I, effective defense became more a matter of specialized weaponry in combination with lighter armor: sonar and depth charges against submarines, fighters to intercept enemy bombers, antimissile missiles and rapid-firing guns to destroy incoming warheads, and electronic countermeasures to baffle guidance systems.

The Next Wave

Navies will continue to exist and to change. Warships already feature automated guns, and satellites guide rockets with near perfect accuracy. But the next wave of technological developments cannot be accurately predicted. On the other hand, it is certain that when international conflict threatens, navies will feature prominently in its resolution.

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See also History; Maritime; Navigation; Piracy; Scientific Instruments

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Warfare— Post-Columbian Latin America

War is a constant theme in the history of Latin America. Soon after discovery of the New World in 1492, the Spanish and Portuguese fought and conquered the indigenous peoples. Between the fifteenth and twentieth centuries, wars for independence, indigenous uprisings, battles for rights to navigation and resources, and internal revolutions took place throughout the continent.

The collision of Eastern and Western Hemispheres that began in 1492 with the first voyage of Christopher Columbus unleashed a wide range of encounters on many planes, and war played a central role. The two largest wars of the age of sixteenth-century Iberian conquest in the Americas were won by Spain in Mexico (1519–1521) and in Peru (1532–1536). Historians generally attribute the final Spanish victory over the American empires to three major factors: (1) divisions among American peoples, some of whom opposed Mexican and Inca rule; (2) the effects of sudden, acute exposure to Eastern Hemisphere diseases, such as smallpox, to which Americans had no immunities; (3) the superior weapons and battlefield tactics of the Spaniards. The weapons advantages included steel-edged swords and pikes, crossbows, and cannons and infantry firearms. Armed with obsidian-tipped weapons, Mesoamerican warriors traditionally deployed in loose formations to capture victims for religious sacrifice, although Andeans, armed with clubs, deployed like Spaniards in massed infantry formations.

Portuguese colonization of Brazil began in 1500. The combination of disease, weapons technology, and tactics ensured the defeat of yet another group of indigenous Americans. Concerned about French

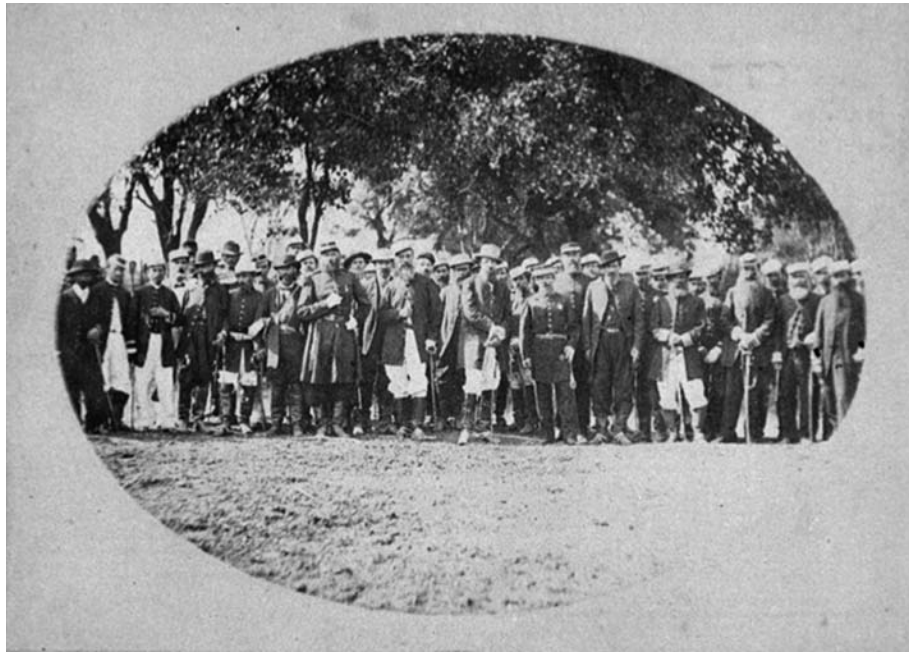
forays into Brazil, King João III of Portugal (reigned 1521–1557) redoubled colonization efforts in the 1520s. A final French incursion into present-day Rio de Janeiro was ejected by 1567. Latin America was divided between the overseas empires of Spain and Portugal.

Wars of the Colonial Powers

Spain and Portugal were concerned about preserving their American colonies and especially the bullion wealth that they produced, just as their rivals were interested in gaining access to them. Although it was not a major theater of operations during the Thirty Years War (1618–1648), England and Holland at times carried the war to the Western Hemisphere.

Armed ships of the Dutch East India Company forayed into the Pacific in 1614. That spurred improvements to fortifications of key Spanish harbors. Dutch and English activities in the Caribbean resulted in like efforts there. Dutch incursions into Brazil were eventually ejected, and in 1641 the Dutch capture of Luanda, Angola, was soon reversed, removing the threat to the transatlantic slave trade that had become the principal source of Brazilian plantation labor. The defensive posture assumed by the Iberian powers was for the most part successful, although a Dutch squadron once captured a Spanish treasure fleet off Cuba, and weakly defended Spanish Jamaica was lost to England.

The European powers fought a series of wars around the world throughout the eighteenth century, and the wealth of the Americas remained a central concern. Expanding British power heightened the threat to Spanish America. Technological and tactical



The Count d'Eu and Other Brazilian Officers who Took Part in the Paraguayan War (c. 1870). Photo by Albert Richard Dietze. National Library of Brazil.

developments in Europe were often mirrored in the Americas, but many American campaigns included guerrilla-style tactics as well as the fixed ranks characteristic of battle on the European peninsula. Small permanent American garrisons were often supplemented by militia units that also quelled internal rebellions.

British forces captured the Caribbean port city of Portobelo, in present-day Panama, immediately following the outbreak of the War of Jenkins's Ear between Britain and Spain in 1739. This conflict became enveloped in the War of the Austrian Succession (1740–1748). The heavy fortifications of Cartagena de Indias, in present-day Colombia, withstood a British siege in 1741. Another British squadron cruised the Pacific coast of Spanish America and then crossed to the Philippines. There it captured the annual Manila galleon, outbound from Acapulco and loaded with silver bullion.

During the Seven Years' War (1754–1763) Spain pushed Portugal out of Uruguay and went on to capture Rio Grande do Sul, the southernmost state in present-day Brazil. Britain captured Havana, Cuba, by taking the harbor fortifications from the landward sides. Also falling to British power was Manila, which prior to 1821 was administratively subordinate to Mexico City. Spain ceded Florida to Britain in exchange for Havana's return. Spain also received all

French territory west of the Mississippi River in North America, but at the price of the ejection of its French ally from the continent. Portugal later reestablished its town of Colônia in Uruguay but lost it again during the war that led to the independence of the United States (1776–1783). Spain provided monetary support to the rebels in North America and launched a successful campaign against the British that recovered Florida.

Rebellions and Independence Struggles

The Bourbon kings of Spain implemented political reforms that included heightened tax burdens on American subjects. Animosity increased between American-born white Spaniards and those born on the Iberian Peninsula. Consequently, Latin American colonies experienced many uprisings during the eighteenth century and later.

We can see many rebellions as responses to increased taxation and abuses by officials. Also important was cultural defense by anti-Spanish consciousness among indigenous villagers. Uprisings by African slaves occurred in areas where slave plantations were common. The larger rebellions often had multiple causes. Rebellions among Andean people often contained currents of Inca millenarianism, manifesting a desire to create an indigenous empire

One may know how to gain a victory, and know not how to use it. • **Pedro Calderon de la Barca (1600–1681)**

led by a descendant of the pre-1571 hereditary rulers known as Incas.

The most extensive of these rebellions took place in the Andes from 1781 to 1784. Some 15,000 regular and militia troops took the field against the Túpac Amaru II rebels, and an estimated 100,000 persons were killed during the rebellion. In the end royalist troops restored Spanish colonial authority. Rebels at times gained an initial advantage through surprise attacks, but they always suffered from a shortage of effective battlefield weapons. Although never the only factor, superior armaments enabled Spanish troops to defeat rebels in the end.

The prestige of the Iberian powers and the monarchs themselves provided a sort of final authority that held colonial rule together; Napoleón's invasion of Spain in 1808 upset this arrangement. Napoleon put his brother Joseph on the throne, wherefore guerrilla war broke out in Spain, while in the Americas, three separate independence movements arose. One was led by Simón Bolívar (1783–1830) and centered in present-day Colombia and Venezuela. José de San Martín (1778–1850) led another in Argentina and joined forces with Bolívar in Peru. The Mexican independence struggle erupted in 1810. Each conflict featured a large royalist faction that offered fierce resistance. Both sides had access to supplies of firearms and munitions, negating an important advantage enjoyed by royalists against earlier rebels. The conflicts were complex and protracted, but by 1824 all of Latin America except Cuba and Puerto Rico had achieved political independence.

Independence replaced two large colonial empires with a number of separate states. Each state faced many problems; prominent among them were disputes between liberals and conservatives that usually manifested themselves as conflicts over centralization of political power. Conflicts erupted within states over breakaway provinces and between states over borders and resources, some of which continue to the present.

The Portuguese king departed Rio de Janeiro in 1821 and left behind his son Pedro as prince regent. Pedro declared independence in 1822 and

implemented a centralist constitution. During the next twenty-five years five major armed rebellions occurred in different parts of Brazil, each one seeking to decentralize power. The Brazilian army defeated each in its turn. In 1835, the Brazilian government also suppressed a major slave uprising in Bahia.

Argentina failed to hold together the boundaries of the viceroyalty (the territory or jurisdiction of a ruler) of the Río de la Plata. The Bolívar faction in Peru created Bolivia out of Upper Peru. Paraguay, lying beyond effective reach of Buenos Aires, Argentina, achieved independence. Uruguay sought more local autonomy than Buenos Aires leaders wished to give, and the Spanish-Portuguese rivalry over that region reemerged as one between Argentina and Brazil. A lengthy conflict characterized by cavalry action followed. In 1828 Britain and France intervened to force the creation of a buffer state, not incidentally guaranteeing freedom of navigation on the Paraná and Uruguay rivers.

Wars against Indigenous Societies

Indigenous societies formed important parts of many Latin American states. Settled indigenous peoples had been largely incorporated into new nation-states in varying degrees of social subordination. Indigenous nomads resisted the onslaught of European-derived societies and attempted to maintain their ways of life. Argentina undertook its Campaign of the Desert (1833–1836) to eject the Pampas nations from lands intended for cattle ranching. Argentina achieved battlefield successes, but indigenous peoples continued to raid along the frontier of settlement. The Second Campaign of the Desert (1879) became largely aimed at Araucanian peoples who had migrated into Argentina because of Chilean military actions. Both Argentine campaigns ranged across large plains and were fought largely on horseback. During the second campaign especially, the Argentine army had superior weaponry and logistics and employed tactics similar to those used by the U.S. Army against Plains nations. Argentina's successful campaign resulted in the destruction of the indigenous nomads.



In a scene played out many times in modern Latin America, soldiers in El Salvador arrest students accused of revolting against the government.

Wars between Nation-States

Beset with internal conflicts between liberals and conservatives, Mexico also had to confront the westward-expanding United States. Mexico lost Texas to independence in 1836 and then faced U.S. pressure on California in the following decade. The United States declared war in 1846. After a land campaign in the north, the United States staged an amphibious landing at Veracruz and went on to capture Mexico City in September 1847. Mexico lost half of its territory. The U.S. victory can largely be attributed to the professionalism of its officer corps, effective use of mobile artillery, and state-of-the-art firearms. Internal conflicts between Mexican liberals and conservatives continued, leading to the War of the Reform (1857–1859). Liberal victory was followed by a conservative alliance with France, which in 1863 invaded Mexico and enthroned a puppet emperor. Liberals expelled the French in 1867.

In South America landlocked Paraguay disputed borders with all of its neighbors and sought expanded navigation rights to the Atlantic along the Paraná River. President Francisco Solano López (1827–1870) pressed his country's claims and embroiled it in a war against Argentina, Brazil, and Uruguay (1864–1870). Poorly equipped Paraguayan troops fought courageously but lost to the overwhelming force of its opponents; the male population of Paraguay was depleted by at least 50 percent.

Chile during the nineteenth century expanded to the north at the expense of Bolivia and Peru. At issue in the War of the Pacific (1879–1883) were mineral rights in

the nitrate-rich Atacama Desert. The Chilean army was outnumbered by its Bolivian and Peruvian opponents, but the Chileans were much better equipped and led by better-trained officers. Naval power was important in this war, although maintenance problems plagued the fleets of both sides. Victory gained for Chile the Atacama region and Peru's three southern provinces, of which northernmost Tacna was returned in 1929.

Loss of its Pacific coast turned Bolivia's attention toward the Paraná River route to the Atlantic. The unsettled Chaco region along the Paraguayan-Bolivian frontier contained oil and mineral reserves, and in 1932 Bolivia provoked a war with Paraguay over the Chaco region. Although Bolivia was expected to win because of its larger army and its aircraft, Bolivia's efforts to secure the region failed because soldiers from the highlands fell victim to disease when they entered the humid Paraguayan jungle and because Paraguayan generals deployed their forces effectively and kept them supplied by rail. Paraguay gained the lion's share of the spoils in the subsequent peace conference.

In the Caribbean, rebels started the third war for Cuban independence from Spain in 1895. Fierce guerrilla fighting continued for three years. Following an explosion that sank the U.S. battleship *Maine* in Havana, the United States declared war on Spain. Suffering defeats at sea and on land in Cuba, Puerto Rico, and the Philippines, Spain lost its last American and Asian colonies. The United States created a system of protectorates in the Caribbean and Central America that guarded the approaches to the Panama Canal (which opened in 1914).

Several Latin American states entered World War I, most notably Brazil, which was provoked by German attacks on its shipping. More countries declared war on the Axis powers (Germany, Italy, Japan) during World War II, including Mexico and Brazil, which allowed U.S. aircraft to use their airfields to combat the German submarine threat in the Atlantic. Brazil's army fought in Europe, and its navy escorted convoys across to Allied (United States, United Kingdom, France, Soviet Union, China) bases in Africa. A Mexican aircraft squadron fought in the Philippines during 1945.



In 1982 the military government of Argentina invaded the British Falkland Islands colony in the South Atlantic. Attempting to bolster public support for the military government, the junta (a group of persons controlling a government) sought to enforce Argentina's long-standing claim to the islands, which Argentina calls the "Malvinas." Despite the long sea lines of communication, a British expedition recaptured the islands. Argentine naval and air units achieved some success, but in general weaker Argentine forces faced British opponents who were trained to exacting North Atlantic Treaty Organization (NATO) standards. Britain's victory led to the fall of Argentina's military government.

Wars of Revolution

Between 1910 and 1920 Mexico experienced revolutionary upheaval and civil war. The Mexican Revolution began with the overthrow of Porfirio Díaz (1830–1915) and continued through a lengthy and complicated set of political twists and turns. Two short-lived successor regimes failed to consolidate power, and by 1914 a full-scale civil war raged across Mexico.

Three major factions emerged. South of Mexico City peasant followers of Emiliano Zapata (1879–1919) sought restoration of rural lands to their villages. Zapata's followers tended to fight on foot. The other two factions emerged in the north. Each drew heavily upon the cowboy population for its membership and made extensive use of horse cavalry. Throughout the revolution the railroad network constructed by the Díaz regime played a determining role in the ebb and flow of combat. The two northern factions also employed small aviation units. One northern faction was led by Francisco "Pancho" Villa (1873–1923), and the other by Álvaro Obregón (1880–1928), whose political loyalty lay with Venustiano Carranza (1859–1920). Villista and Carrancista forces both had access to U.S.-made weapons at first, but President Woodrow Wilson later cut off Villa's sources.

In April 1915 Villista and Carrancista forces clashed in two major battles around Celaya, northwest

of Mexico City. Villista cavalry mounted several charges against Carrancista machine-guns emplaced in barbed-wire defenses, resulting in decimation of Villa's forces. Retreating northward, Villa again faced Obregón at Aguascalientes on 10 July 1915, and suffered a crushing defeat that relegated the Villa faction to relative insignificance. A Carrancista column ejected Zapata's forces from Mexico City in the following month, and the Zapatistas retreated south into their home area of Morelos. Zapata himself fell victim to a trick and was assassinated in an ambush in 1919. The Zapatista forces lost cohesion and dissolved, ending the military aspects of the revolution. The Mexican Revolution was the largest-scale conflict in twentieth-century Latin America, but the revolution in Cuba affected many parts of the entire region.

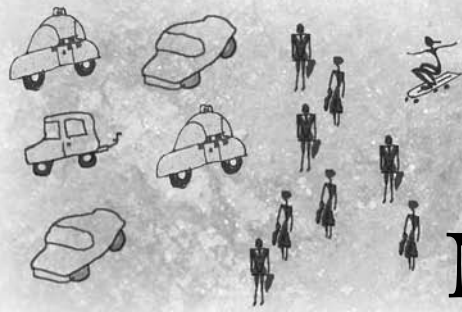
In 1956 Cuban exiles led by Fidel Castro (b. 1926) landed in eastern Cuba and began a guerrilla war from mountain bases against the dictatorship of Fulgencio Batista (1901–1973). The Cuban military was outfitted with U.S. equipment from World War II and also jet aircraft. The difficult terrain afforded the rebels adequate security, and they quickly gained the support of peasants in the region. Thousands of troops moved against hundreds of rebels, but the guerrilla strategy succeeded. Castro's forces swelled to seven thousand as the public reacted unfavorably to repressive tactics employed by the Batista regime. (When Castro victoriously entered Havana, he had not clearly allied himself with the Communist Soviet Union.) A key factor in the rebels' victory was their high morale and good discipline. Operation from a remote base (*foco*) was a common strategy, and the Cuban Revolution served as a model for other revolutionary forces. However, only in Nicaragua did such a revolutionary force actually gain political power. Castro's Argentine-born comrade, Ernesto "Che" Guevara (1928–1967), died in Bolivia leading a failed *foco*-based revolutionary guerrilla force.

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See also Guevara, Che; Revolution—Cuba; Revolution, Mexico

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Warfare— Post-Columbian North America to 1775

Warfare in North America after the 1492 arrival of Columbus in the West Indies determined the settlement pattern of European colonization and rule, as well as the pattern of European–Native American relations, for the next four hundred years. It also established what some historians have termed the *American way of war*: a combination of the “surprise and ambush” tactics of Native American warfare and the heavy firepower of European warfare.

Post-Columbian warfare from 1492 to 1775 in North America (what is today Canada, the United States, and the islands of the Caribbean) can be divided into three major types. The first type is the conflicts that were primarily between various Native American groups, the second is the campaigns of conquest conducted by Europeans against a variety of Native American tribal groupings, sometimes with other Native Americans allied to the Europeans. The third and most significant campaigns are those of Europeans against other Europeans with some supporting Native American allies on one or both sides. This article will focus on the second and third types and touch only briefly on the first, since much of that type of warfare is poorly documented at best.

Characteristics of Native Warfare

It is a commonly held misconception that the Native American style of warfare was more ceremonial or more of a dominance ritual than warfare as fought by the Europeans. Just as the Europeans waged war for territory and power, Native Americans primarily waged campaigns to expand or defend hunting-and-

gathering areas or regions of cultivation and to secure captives either to replace losses or to serve as slaves.

These native wars were characterized in North America by techniques suitable to a hunting-and-gathering culture, relying more on ambush and surprise attacks than on set-piece battles. Within those constraints, however, combat was ruthless and brutal with little concern for “noncombatant” casualties. Especially in surprise attacks on an enemy’s villages, women and children were not spared unless to be taken as captives. While war was seldom waged to intentionally annihilate an enemy tribe, often times the casualties would be significant enough to cause one side or the other to have to assimilate with neighboring groups, thus effectively ceasing to exist as a separate tribe.

One major exception to these general conditions is the creation of the Iroquois Confederation in the later years of the 1500s and the early 1600s, in what would become upstate New York. The Iroquois, while maintaining many of the characteristics of native warfare, were also in the midst of what can be called an “imperial” expansion of their own, conquering territory and subjugating neighboring tribal groups.

Characteristics of European Warfare

The Europeans in a sense had a much more stylized form of warfare with set-piece battles fought almost by arrangement and extended sieges of cities and fortresses. Like the Native Americans, Europeans fought primarily to expand or defend border provinces and to acquire coercive power over their neighbors. In the sixteenth and seventeenth centuries, this coercive power was often related to the religious beliefs of



Wilhelm Lamprecht, *Father Marquette and the Indians*. In 1673 the French Jesuit missionary, along with Louis Jolliet, mapped the northern portion of the Mississippi River. Haggerty Museum of Art at Marquette University, Milwaukee, WI.

the states or groups involved as the struggle between the emerging Protestant sects and the formerly hegemonic power of the Catholic Church intensified.

Battle was a difficult event to orchestrate with the armies taking hours to draw up in their combat formations, thus battle was sometimes engaged by mutual consent of the opposing commanders. Battle was waged by generally linear formations of infantry equipped with firearms and pike, with massed cavalry and relatively static artillery in support. Due to the disciplined and well-armed forces, casualties on one or both sides could equal or exceed 50 percent of the engaged armies. Due to the nature of seventeenth- and eighteenth-century maneuver and battle, the more prominent form of combat was the siege of a fortified city or independent fortress. These sieges had become very formalized with an almost mathematical precision to their course and outcome.

The “American Way of War”

In North America, these two conflicting styles would combine, resulting in a synthesized form of warfare that was characterized by both the surprise and ambush of Native American warfare and the heavy

firepower of European warfare. In addition, as the settlers saw their very survival at stake on the frontier, these conflicts took on the character of a total war of annihilation as opposed to the more limited goals of either Native American warfare or European state warfare. This intensity of conflict often surprised and shocked both Native American enemies and European observers. It is from these origins that the American tradition of total war and unconditional surrender arose.

The Impact of Disease

In addition to the increased intensity of warfare in North America, disease played a dramatic role in many of the conflicts as the Eurasian disease pool was introduced into North America among people who had no developed immunities. The impact of smallpox, measles, and other endemic diseases of Europe were devastating on the Native American populations, often resulting in near total collapse of the native tribes and the decimation of their populations. Likewise, however, certain diseases endemic in the Americas or tropical diseases, such as yellow fever and malaria, could lay low entire settlements or armies of Europeans.



The Impact of Technology

The technology of the Europeans had a profound impact on the Native Americans, both on the battlefield and within their varied cultures. The combination of horse, rider, armor, firearms, and steel weapons was formidable, especially in the early years of Spanish settlements and conquest. The only counter the Native Americans had was either to overwhelm their European opponents with numbers or to strike quickly from ambush and escape before the Europeans could effectively respond. The other problem that European technology created was a dependence on trade with the Europeans on the part of the hitherto self-sufficient Native American warriors. The guns that the Europeans introduced required powder and shot as well as either replacement or repair in the event of failure; the Native Americans were not sufficiently equipped culturally or technologically to produce their own or even to repair broken weapons in most cases.

Intertribal Warfare in North America

Although the European arrival, settlement, and advance caused the most intensive conflict in the post-Columbian New World, it would be a mistake to assume that conflict between Native Americans tribes died out. Instead, in some ways the presence and effect of the Europeans intensified this intertribal warfare.

One major source of conflict among the Native Americans was the rise of the Iroquois Confederacy, the dominant native power and a nascent empire on the rise in the northeastern part of what would become the United States. The case of the Iroquois is unusual in that initially five tribes, later six, banded together in pursuit of common goals in a power-sharing arrangement. The member tribes of the Iroquois Confederation agreed not to wage war on one another and combined their power to subdue their neighbors and to dominate trade in the region. The power of the Iroquois Confederation was felt north into New France and south as far as the Cherokee lands in the Carolinas, Tennessee, and Georgia. Though the

Iroquois rise predates European settlement in North America, the confederation continued to expand its area of influence, often playing one colonial power off against another to maintain its position.

Tribal warfare also continued along the edges of colonial areas as the various tribes fought over trading rights with the newcomers. European trade goods had a tremendous draw for the Native Americans, everything from firearms and steel axe heads to cloth and iron cooking pots, to say nothing of European or American distilled liquor. These trade goods fundamentally altered the traditional relationships between tribes. In order to gain control of the highly desired trade goods, the tribes needed access to both the Europeans and to the furs and other native products the Europeans desired in return. Thus wars broke out between tribes for control of this trade in addition to the ancient fights over hunting and agricultural territory and for slaves and honor.

Among the Europeans, the French were perhaps the most influential of the newcomers with their fur-trade-driven economy. The French courted the tribes with trade goods and alliances. As a result French influence spread far into the heart of the American continent with both the *voyager de bois* and French Jesuit missionaries active as far west as the trans-Mississippi region. They participated with their allies in intertribal warfare, often having a decisive impact despite their small numbers because of the technological advantages they possessed and brought to their allies.

The European arrival also set in motion intertribal warfare far from their actual zones of conflict as the effects of European arrival set in motion two powerful factors. As Eurasian diseases made their way across the continent, epidemics devastated some tribes, upsetting local balances of power, generating wars as the lesser-affected tribes expanded their territories into territories of the more severely affected tribes. The European arrival also set tribes in motion as they were displaced from east to west; this displacement also caused wars between tribes as the refugees pushed west. One result of these displacements was the arrival of such tribal groupings as the Lakota on



the Great Plains in the 1700s, having been pushed out of the woods of Wisconsin and eastern Minnesota by the Ojibwa (the Chippewa). The Lakota then pushed the Crow tribe off its territory, and the ripples moved west.

Horses, initially brought to the Americas by Spaniards, changed life and warfare on the high plains when runaways began to thrive on the prairie grasslands after about 1600. Indians were already familiar with bows and learned quickly how to shoot their arrows from the back of galloping horses. Suddenly, buffalo hunting became a way of life, agriculture diminished, and warfare became mobile as never before, turning into cavalry encounters between rival tribes seeking to secure their hunting grounds. Warlike Plains Indians met Spanish and American soldiers, even when armed with guns, on more nearly even terms than before, winning their last battle in 1876 against General Custer of the United States Cavalry.

Europeans against the Native Americans

With the beginnings of colonial activity and expansion of European powers into North America, each European country extended its power in service of its own interests. Thus the indigenous people faced encounters ranging from violent conquest and displacement to alliance and trade.

The Spaniards

The European campaigns against Native American tribes began with the earliest landings in the Caribbean by the Spanish. Small groups of Europeans were incredibly successful in the face of generally overwhelming numbers. The Spanish set the example for this both with their relatively easy conquest of the Caribbean Islands of Hispaniola and Cuba, as well the smaller islands and their later conquests in Mexico and Peru. The keys to their success were the differing approach to warfare between the Europeans and the Native Americans, the superior technology of

the Europeans, intertribal differences, and the impact of disease.

The initial Spanish forays into the North American continent were exploratory expeditions, which operated more as raids, searching for more wealth, as had been found in Mexico and Peru, and when not finding it, moving on. Oftentimes, their meandering was more the result of rumors spread by native leaders than deliberate routes planned by the explorers and conquistadors. The Spanish generated hostility by their incessant demands for food and gold that resulted in the local natives offering various levels of noncooperation or resistance. These early expeditions, especially the efforts of Hernando de Soto, beginning in Florida and wandering as far north perhaps as the Carolinas and then west to the Mississippi Valley, were unsuccessful in locating any vast new areas of riches. However, both de Soto's expedition and Coronado's through the American Southwest as far north as Kansas did provide valuable information on the native peoples and basic weather and terrain conditions.

Subsequent Spanish expeditions established settlements in Florida and Southwest, especially in New Mexico. These settlements were a combination of military outposts and missionary churches. The Spanish were generally able to overawe the natives with firearms, steel, and cavalry, to which the native tribes of the Southeast and Southwest had no effective answer. The Spaniards were very careful to prevent firearms and, initially, horses from falling into the hands of the Native Americans.

The relatively easy, though at times violent and bloody, conquest of the borderlands was tested in 1680 by a widespread uprising of the Pueblo Indians. Drought and high temperatures as well as increasing Spanish demands on the Pueblos, combined with a series of successful raids by Apaches, Navajos, and Plains Indians, resulted in the first unified uprising against the Spanish in New Mexico. It would be thirteen years before another expedition would reconquer the province of New Mexico. By 1700 the Spanish had again occupied the Pueblo territory and reestablished

settlements, decimating the Pueblo population in the process. After 1700 the Spanish continued to expand the area under their direct control, and while they met continued opposition from native groups, the basic pattern remained the same, small numbers of Spaniards overawing larger numbers of natives. However, when the natives were incited and supplied, as well as supported, by other Europeans, the conflict took on the characteristics of an imperial border war.

The French

The French in New France and the Mississippi River Basin had a much different experience in that the French were not interested in large-scale settlement and agriculture or mining. Instead, they were interested in the fur trade, which required the cooperation of the Native Americans. Therefore, with few exceptions the French chose to establish very good relations with the natives and in fact offered their active support against their friends' traditional enemies, such as the Iroquois. Thus, very quickly the warfare on the French frontiers adopted the characteristics of imperial border warfare, with both Europeans and Native Americans on both sides of the conflict.

The Dutch

The Dutch established settlements in what is today New York prior to the settlement of the English Pilgrims and Puritans in New England. The Dutch, while interested in settlement and agriculture, were also very interested in the fur trade, which resulted in a bifurcated policy, on one hand displacing Native Americans in the Hudson River Valley, and on the other operating as suppliers and sometime allies to the Iroquois of the northern and western frontier areas. Dutch penetration into the Connecticut River Valley in the 1630s helped to bring on the Pequot War, which was primarily but not exclusively fought by English settlers against the Pequot tribe.

The English (British after 1701)

The British were almost exclusively interested in acquiring land for agricultural use, which entailed the displacement of the local native tribes and much resultant warfare. The English settlers brought from England the tradition of the militia; all military-age males were required to provide their own weapons and train a specific number of days a year and were liable for service within the colony. The English settlements relied on this militia force for both its defensive capability and its offensive capability against Native Americans and other threats to the security of the colony.

The most significant problem the English settlements faced was their dispersal on farms and in small villages along the frontier. As the frontier advanced inland, the Native Americans had a ready and vulnerable set of targets to strike at with their traditional raid and ambush tactics. The English responded by fortifying houses in the villages, launching periodic punitive campaigns against the Native Americans, and conducting active militia patrols and ambushes along likely Indian approaches during times of trouble. The English faced repeated uprisings and minor wars with native tribes from 1622 in Virginia until 1675, in both King Philip's War in New England and Bacon's Rebellion in Virginia, as well as many other conflicts along their expanding frontiers.

Imperial Warfare in North America

Various forms of conflict between European powers in North America and the waters along its coasts and in the Caribbean began in the middle portion of the 1500s as the Dutch rebelled against Habsburg Spanish rule. Their naval and privateer forces, later joined by English privateers, attacked Spanish settlements and treasure ships. About a century later, the Anglo-Dutch Wars of the 1650s and early 1660s also slipped over into North America, with the English gaining control of the Dutch settlements along the Hudson River from Albany in the north to New Amsterdam in the south. The English renamed the colony



and the major port city at the mouth of the Hudson: New York.

It was, however, between the French and the English that the longest, most costly, and in the end most significant of these imperial wars was waged. Between 1689 and 1763, the English and the French faced off in a series of four separate yet interrelated conflicts. These conflicts were characterized by a blending of frontier-type warfare, reminiscent of native warfare with numerous bloody but brief ambushes and raids along the frontier, and the more traditional European-style confrontation of siege and set-piece battle, though the numbers involved in these battles were generally very small compared with their European counterparts.

These wars grew in scope and intensity throughout the period. By 1763 the British had committed a significant portion of their regular army to the colonial struggle in North America, but not before they generated increasing colonial resentment for what were perceived as disappointments, broken promises, and outright betrayals of the colonial cause. Early on, the British colonists had determined that their security would never be insured and their ability to expand into the interior would be constrained until the French had been driven from both Canada and the Ohio and Mississippi river basins. For the colonists this was not a case of a series of imperial border wars between the mother countries, their colonists, and their native allies. It was instead a war of survival, and in order to survive, the French and Indian threat had to be destroyed at its source: the French settlements along the St. Lawrence and the fur trading posts along the lakes and rivers of the interior. It was not until 1758 that the British government under William Pitt the Elder adopted the same view.

It was during the fourth and final war, the Seven Years' War in Europe or the French and Indian War in North America, that all the components of warfare in North America came together: extended large-scale border ambushes and raids conducted by Native Americans allied with local militia or European regulars, the largest of these being Braddock's

defeat on the Monongahela River in 1755; large-scale European-style sieges of Fort William Henry, Louisburg, and Quebec (though Louisburg had been besieged several times before); and, finally, the single largest European-style set-piece battle fought out on the Plains of Abraham near Quebec, which signaled the end of French rule in North America (though the peace treaty would not be signed for another four years).

The final significant aspect of post-Columbian warfare in North America occurred shortly after the Treaty of Paris in 1763 when unrest among former French-aligned Native American tribes broke out in what is commonly and mistakenly referred to as Pontiac's Rebellion. In an attempt to pacify the Indians, reduce costs, and minimize frontier warfare, the British adopted what is known as the Proclamation of 1763, which attempted to limit colonial expansion. It failed to limit expansion and only further inflamed colonial resentment already high over British hesitancy in the long period of warfare, newly reimposed mercantilist policies, and newly enacted taxes on the colonies to pay for the cost of the wars. In the end all this combined to produce the American Revolution in 1775.

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See also Biological Exchanges; Columbian Exchange; Dutch Empire; English Empire; French Empire; Fur Trade; Spanish Empire

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Warfare— Pre-Columbian Mesoamerica and North America

The earliest evidence of specialized arms for warfare in Mesoamerica dates to post-1150 BCE in Mexico. While North American weapons were used primarily for hunting (at least before 900 CE), Mesoamerican weaponry emphasized hand-to-hand combat and was designed to capture and kill people. Despite this greater emphasis on weapons, perhaps the most crucial element of Mesoamerican warfare was organization and discipline.

The identifiable history of specialized weaponry in pre-Columbian North and Middle America begins some three thousand years ago against a backdrop of knives, spears, and atlatls (spear throwers). These implements probably formed part of the tool inventory that accompanied the first migrants into the New World. Although they could be turned to martial use, they were primarily used for hunting animals. Armed conflicts at this point probably involved clashes between rival groups, with the weaker fleeing from the without engaging in sustained confrontations.

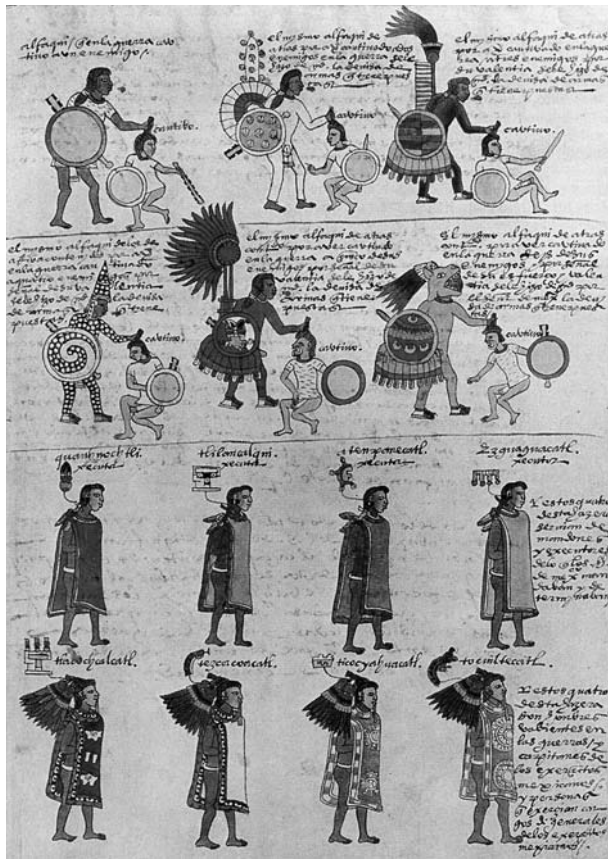
Emergence of Warfare

Warfare became more important after the development of the settled, agricultural communities that became widespread in Mexico between 2500 and 1400 BCE, but much later further north. (Although this article covers both North America and Mesoamerica, it will concentrate on Mesoamerica, as the development of complex society, including warfare, was more developed much earlier there, and the archaeological record is richer.) The creation

of settlements paralleled the growth of political complexity and specialized weapons, which do not emerge in isolation but require complex social support. The earliest evidence of such weaponry occurs with the Olmecs of the southern Mexican Gulf coast after 1150 BCE.

Hunting tools such as atlatls were used, but it was clubs, maces, and stone-tipped spears that emerged as the most important weapons. Clubs, maces, and spears used as staff weapons (a blade set on a staff, such as a halberd in Europe) are quintessentially martial arms. Designed to capture and kill people, these arms required specialized training.

These weapons also emphasized hand-to-hand combat; spears were used for thrusting and slashing rather than throwing, and clubs and maces were used as crushers. Hand-to-hand shock weapons, not projectiles, dominated early Olmec battlefields. Defensive arms—shields, helmets, and armor—were rare among the Olmecs, perhaps reflecting their monopoly of specialized weapons of war. Whether the Olmecs employed their forces individually or in organized formations is unknown, but given the low populations of Olmec settlements—with maximum populations of about 1,500 to 2,500 people per settlement—Olmec armies were almost certainly small. Some soldiers may have accompanied merchants traveling throughout Mesoamerica, though they were for the most part employed domestically, a fact that is more easily understood when one realizes that typical march rates without roads averaged approximately 19 kilometers per day. Even merchants used dirt trails because formal stone roads had yet to be developed. The appearance of slings and spherical stone and clay shot by 900 BCE gave the Olmecs an



Folio 65 (recto) from the Aztec *Codex Mendoza*, created circa 1541. The attire worn by warriors corresponds to their military achievement; the top half depicts men intending to become priests, the bottom shows imperial officers.

effective projectile capability, which, combined with their shock tactics, let them dominate the battlefield for the next half millennium. And their way of war spread with them.

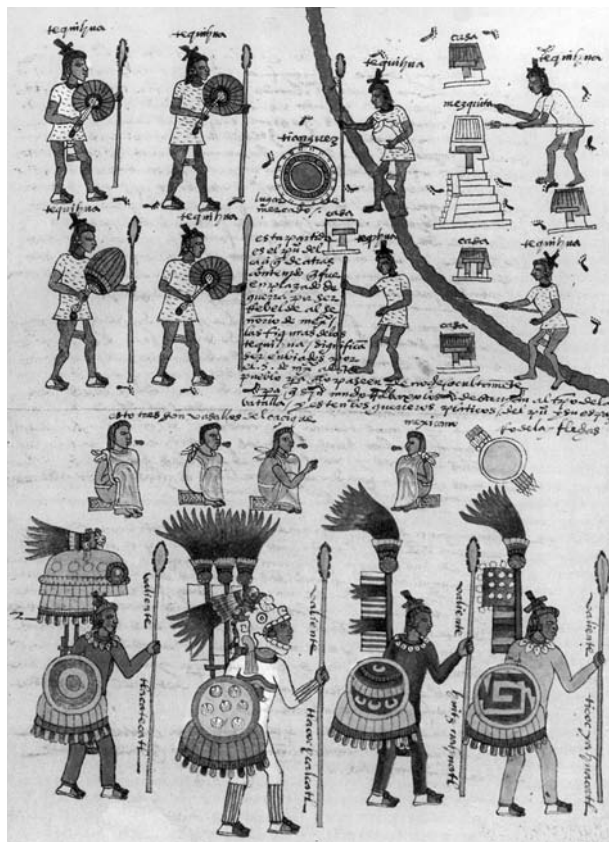
The Olmecs had stretched over much of central Mexico and down the Pacific coast as far as El Salvador, but around 550–500 BCE, they began withdrawing from these outlying settlements and apparently retreated back into their heartland on the Gulf coast of southern Veracruz / northern Tabasco. Following the Olmec withdrawal after 500 BCE, thrusting spears dominated elite warfare in Mesoamerica. Clubs persisted among nonurban groups, but along with maces they became less common as the use of

helmets and large wood, cane, and leather shields spread. Faced with these defenses, warriors turned from clubs and maces to longer, lighter cutting, and penetrating arms. Armor also reduced the effectiveness of slings. The appearance of large bodies of opposing soldiers also suggests the emergence of formations. Specialized fortifications also emerged: there were fortifications at smaller sites for protection, but larger ones arose to dominate local regions. Walls at least tripled the strength of defenders, minimized logistical problems, and permitted the use of a larger percentage of the populace. Walls give defenders a major advantage over attackers by giving them places from which to fight with maximum protection—and with food and other supplies close at hand—while forcing the attackers to expose themselves with little or no protection. Some walls were accompanied by extensive dry moats, but many were hilltop fortifications whose altitude multiplied the difficulty of assaults.

Organizational Innovation at Teotihuacán

The next major development was organizational, combining units with reinforcing arms. At Teotihuacán, the great city of central Mexico that flourished from approximately 150 CE to between 650 and 750, some soldiers used thrusting spears and bucklers that increased mobility, while others wielded atlatls and darts with rectangular shields that offered less mobility but greater protection. These shock and projectile weapons units reinforced each other, firing on the enemy from a distance (the effective range of an atlatl was approximately 53 to 63 meters), while the spearmen closed in for hand-to-hand combat. Superior helmets of cotton quilted between fabric also appeared, affording enough protection to permit the use of smaller shields.

Using complementary units halved the number of combatants who could be brought to bear at any one time, but Teotihuacán extended military training beyond the elite, allowing it to field far larger armies than was possible when warfare was the domain of



Folio 67 recto of the *Codex Mendoza*: (top) warriors scout a town at night in preparation for an attack; (middle) negotiations after surrender; (bottom) high-ranking commanders.

the elite only. Teotihuacán's more open system was not adopted in other cities in Mesoamerica, but its arms were, which perhaps accounted for Teotihuacan subsequently adopting armor. By 500 CE, two types of quilted cotton armor some five-to-eight centimeters thick were in wide use in Teotihuacán's armies. One was a full-body armor that covered all the limbs; the other was a quilted tunic reaching the knees. Both types were proof against atlatl darts fired from a distance, most spear thrusts, and virtually all stones fired from a sling.

Armor, however, was extremely costly, as all the cotton had to be imported and extensively worked, so it was probably worn by only a minority. A greater problem was that it restricted the wearers' mobility.

The advantages armor did offer were not enough to stop the tide from turning against Teotihuacán, which fell by 650–750 CE.

During Teotihuacán's heyday, permanent settlements had also emerged in North America, and by 600, bows and arrows had spread throughout North America. At this time, there were no bows and arrows in Mesoamerica; they arrived around 1100 or shortly thereafter. Their use spread southward from the north, presumably having come originally from Asia. Bows were mainly hunting tools, but they could be used as weapons that could strike effectively at a distance and from ambush. So while there is little evidence of sustained combat in North America, clashes became more deadly.

With Teotihuacán's demise, sizable organized armies largely vanished. Among the Maya, where armor was rare, clubs and maces persisted, often coupled with bucklers, while spearmen used long, easily transportable flexible shields. Stone-pointed thrusting spears continued to dominate, but some now boasted serrated blades running down both side of the shafts as far as a foot to produce longer slashing surfaces while remaining light.

Maya innovations spread into central Mexico around 700 CE. Thrusting spears were adopted, along with round shields carried on the left wrist to free that hand, but armor was gone. Combat was lighter and more mobile, but unsuited to large-scale conquest, and was associated with groups in hilltop fortifications rather than with conventional armies.

Developments in North America

Warfare was becoming endemic in North America after 900 CE, owing at least in part to the increased reliance on a better array of crops (notably corn), which led to larger, more tightly-knit and clustered settlements and the political leadership that comes with them. Armed with bows and arrows, nomadic groups preyed on the settled, and settled groups also clashed with each other. As time went by,



warfare became more organized and complex, especially in the Southwest and Southeast after 1000 CE. Many settlements became centralized, defensive sites were occupied, and military societies emerged, though with the exception of what may have been oak swords, little new weaponry was developed. In the Southeast, no armor emerged, but bladed clubs were used, indicating specialized warrior groups, and major towns now had palisades, all signs of more centralized polities. Heads were taken as trophies.

Developments in Mesoamerica, 900–1200

The next major shift in central Mexico came with the Toltecs, the major power in the region from approximately 900 to 1200. The Toltecs combined atlatls, knives, and a curved, bladed, wooden short sword with round shields and light body armor. The wrist-borne shields freed the left hand to carry darts, which soldiers could fire until they met the enemy, whereupon they shifted to swords: a single combatant thus had both projectile power prior to closing and a light shock weapon. Fortification declined with the rise of this offensive emphasis.

Arms and armors did not change significantly in the Maya area at that time, except as they were introduced from central Mexico. But one development had a significant military consequence. In some areas, Maya roads built for all-weather, swift movements were used to link internal political regions militarily.

Siege craft was never well developed in Mesoamerica, owing to logistical constraints that rendered it extremely difficult to maintain an attack on a distant region unless walls could not be quickly breeched or scaled with ladders. There is evidence of a stationary siege tower built to pour counterfire on the defenders of a pyramid temple in tenth-century Yucatán, but generally combat comprised the clash of opposing armies, and Toltec light infantry

dominated the battlefield until their downfall. The Toltec demise may have been hastened by the influx of peoples from the ever-drier north, who brought bows and arrows into central Mexico for the first time and disrupted the flow of trade with their hit-and-run tactics, against which large conventional armies were ill suited.

Aztec Warfare

The Aztecs, who became established in central Mexico in the early 1300s and whose empire flourished from 1430 to 1521, made the last major weapons innovations. Under their empire, a preindustrial military complex supplied the imperial center with materials not available locally, or manufactured elsewhere. The main Aztec projectiles were arrows shot from bows and darts shot from atlatls, augmented by slingers. Arrows could reach well over a hundred meters—and sling stones much farther—but the effective range of atlatl darts (as mentioned earlier, about 60 meters) limited the beginning of all barrages to that range. The principle shock weapons were long, straight oak broadswords with obsidian blades glued into grooves on both sides, and thrusting spears with bladed extended heads. These arms culminated a long developmental history in which faster, lighter arms with increasingly greater cutting surface were substituted for slower, heavier crushing weapons. Knives persisted, but were used principally for the coup de grâce. Armor consisted of quilted cotton jerkins, covering only the trunk of the body, leaving limbs unencumbered and the head free, which could be covered by a full suit of feathers or leather according to accomplishment. Warriors also carried 60-centimeter round shields on the left wrist. Where cotton was scarce, maguey (fiber from agave plants) was also fabricated into armor, but the long, straight fiber lacked the resilience and warmth of cotton. In west Mexico, where clubs and maces persisted, warriors protected themselves with barrel armor—a cylindrical body encasement presumably made of leather.

City walls and hilltop strongholds continued into Aztec times, but construction limitations rendered it too costly to enclose large areas. Built in a lake, the Aztec capital of Tenochtitlán lacked the need for extensive defenses, though the causeways that linked it to the shore had both fortifications and removable wooden bridges.

By Aztec times, if not far earlier, chili fires were used to smoke out fortified defenders, provided the wind cooperated. Poisons were known, but not used in battle, so blowguns were relegated to birding and sport. Where there were sizable bodies of water, battles were fought from rafts and canoes. More importantly, especially in the Valley of Mexico, canoe transports were crucial for deploying soldiers quickly and efficiently throughout the lake system. By the time of the Spanish conquest, some canoes were armored with wooden defensive works that were impermeable to projectiles.

The Importance of Organization

Despite the great emphasis placed on weaponry, perhaps the most crucial element in warfare in Mesoamerica was organization. Marshaling, dispatching, and supplying an army of considerable size for any distance or duration required great planning and coordination. Human porters bearing supplies accompanied armies in the vanguard (the body of the army); tribute empires were organized to maintain roads and provide foodstuffs to armies en route, allowing imperial forces to travel farther and faster than their opponents; and cartographers mapped out routes, nightly stops, obstacles, and water sources to permit the march and coordinate the timely meeting of multiple armies at the target.

What distinguished Mexican imperial combat from combat in North America was less technological than organizational. More effective weapons are less important than disciplining an army to sustain an assault in the face of opposition; that task requires a political structure capable not merely of

training soldiers, but of punishing them if they fail to carry out commands. Politics with the power to execute soldiers for disobedience emerged in Mexico but not in North America; those politics had a decisive advantage over their competitors.

In North America, chiefdoms dominated the Southeast beginning after 900 CE, and wars were waged for status and political domination, but the chiefdoms of the Southwest had disintegrated after 1200 CE, and pueblos had emerged from the wreckage. (We use the term *pueblos* to refer to the settled tribal communities of the Southwest, but chiefdom is a political term that reflects the power of the chief, which was greater than that exercised by the puebloan societies after the collapse around 1200 CE.) There too warfare played a role, though for the pueblos wars were often defensive engagements against increasing numbers of nomadic groups. The golden age of North American Indian warfare emerged only after the arrival of Europeans, their arms, and horses. But even then, in the absence of Mesoamerican-style centralized political authority, individual goals, surprise attacks, and hit-and-run tactics dominated the battlefield, not sustained combat in the face of determined opposition.

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See also Aztec Empire; Mesoamerica

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Warfare— Pre-Columbian South America

Indigenous South Americans apparently waged war for many of the same reasons as other peoples: to control land, natural resources, human labor, and trade. Most of what we know about Andean warfare in South America comes from carvings and pottery, and it indicates an emphasis on violence. Less clear is whether the apparent predatory and cannibalistic behaviors in Amazonia were aggravated by European colonialism.

South America was a relatively isolated continent before 1492. It thus provides us with interesting opportunities to compare world-historical processes in different continents that were largely or completely independent of each other. Our information on warfare in pre-Columbian South America comes primarily from three sources: archaeology, ethnohistory (that is, indigenous peoples' own historiography), and contact period history. The bulk of this information is from the Andes. To make sense of these various kinds of information, it is useful to organize it both regionally and chronologically, as well as in terms of a coherent framework of interpretation. The two macroregional divisions considered here are the Andean area and Amazonia.

The Andean Area

The Andean mountain range that runs along the entire extent of western South America saw the development of many complex societies such as chiefdoms, states, and empires during three and a half millennia before the Europeans arrived. The Spaniards who in 1532 conquered the Inca Empire encountered the

last of these complex indigenous societies. Like its many predecessors, the Inca state can be understood as an attempt to control the resources, human labor, and flows of goods in the central Andean area. The varied geography of the region had for thousands of years stimulated trade between the arid coast, the mountains, and the tropical rainforests in the eastern lowlands. Attempts to politically control such trade through military means can be traced in northern Peru to the Initial Period of pottery use (1800–800 BCE). A powerful theocratic state based in the Casma valley on the north coast appears to have maintained trade relations with the north-central highlands and the tropical forest areas beyond. Toward the end of the Initial Period, the Casma polity collapsed, and the area was invaded by its former trading partners in the highlands, associated with the site of Chavín de Huántar on the upper Marañón River on the eastern slope of the Andes. This initiated the first of three major pre-Columbian attempts by highland societies to take advantage of their middleman position between coast and jungle to gain political power. The carved monoliths at Cerro Sechín, a ceremonial center from this period in the Casma valley, show armed men and their dismembered victims, indicating an emphasis on violence, but we do not know if they represent war scenes or ritual sacrifice. As sites in this period are not fortified, it appears that social integration was achieved more by economic and ritual means than by violent coercion.

During the Early Horizon (800–200 BCE), the highland Chavín polity exerted influence over much of Peru. The traditional view is that the widespread distribution of Chavín art designs reflects a religious cult that spread by peaceful means, but defensive



Stone wall, Sacsayhuaman Incan ruins in modern-day Cuzco, Peru. The cliff-side location of this structure would have provided excellent protection against invaders. Photo by Kevin Connors (www.morguefile.com).

fortifications on the north coast suggest that military confrontations also occurred. Conflicts may have arisen regarding control of trans-Andean trade routes conveying Ecuadorian *Spondylus* shell and tropical forest produce, or of coca-producing zones, following a pattern known from later periods. Trophy heads appear not only on north coast pottery, but also on chavinoid Paracas textiles on the south coast and in the art of Pukara in the Titicaca basin. Skull fractures indicating blows to the head occur among the mummies at Paracas. The Chavín interaction sphere began to disintegrate in the third century BCE.

In the Early Intermediate Period (200 BCE–600 CE) the decidedly more militaristic Moche state controlled much of the north coast and built heavy fortifications against a highland polity based at Cajamarca. Such defensive architecture typically consisted of hilltop bastions with walls, moats, and stores of sling stones, but as they lacked water they appear to have been built as protection against brief raids rather than long-term sieges. Trophy heads occur on Moche ornaments, and the pottery shows many realistic war scenes, with warriors in helmets with maces and shields, and the sacrifice of prisoners. Recuay pottery from the adjacent highlands also shows warriors with clubs, shields, or trophy heads. Moche expansion relied on a mixture of military conquest and voluntary conversion of local chiefs, a pattern that continues through later expansions including the Inca. Prestigious older polities were sometimes incorporated peacefully by

indirect rule. Examples of this include the Casma area within the Moche state and the oracle of Pachacamac on the central coast, venerated throughout its existence up until the arrival of the Spaniards. On the south coast, Nazca pottery shows trophy heads and later also militaristic motifs, but the area seems not to have been subjected to centralized state rule. Toward the end of the period, the expansion of the Tiwanaku polity in the Titicaca basin shows little direct indication of military conquest, but there is evidence of human sacrifice and the taking of subject peoples' sacred objects. In northwest Argentina, warriors and trophy heads appear as artistic themes at this time.

In the Middle Horizon (600–1000 CE), a short-lived but powerful state based at Wari in the Mantaro basin, in the south-central highlands, seems to have controlled the south and central coasts in their entirety and almost all of the Peruvian highlands from the city of Pikillaqta in the south to Cajamarca in the north. Like its southern counterpart Tiwanaku, Wari based much of its power at the periphery of its domain on dispersed administrative centers that regularly hosted ceremonial feasts for local leaders. Although some sites suggest a military presence, such as on the boundary of Tiwanaku in the southern highlands, relations with earlier polities in the northern highlands and on the coast show little evidence of militarism. As in earlier periods, however, there is evidence of human sacrifice and ritual decapitation. During this period, the Moche state declined and shifted its capital farther north. The Wari Empire collapsed around 800 CE and Tiwanaku about two centuries later.

In the Late Intermediate Period (1000–1476 CE), the collapse of Wari and Tiwanaku left smaller polities warring with their neighbors throughout southern and central Peru. One of these was the emergent Inca state based in the Cuzco valley on the southern boundary of the former Wari Empire. The endemic warfare called for militaristic leadership in Cuzco as elsewhere. Most archaeological sites from this period are fortified or located on easily defensible hilltops. Coastal and highland groups in central Peru fought over access to the best coca-producing lands at intermediate elevations. In the north, the old Moche state



revived as the expansive coastal empire of Chimor (or Chimú), based at the metropolis of Chan Chan. Like earlier north coast polities, Chimor controlled the crucial maritime trade in *Spondylus* shell from Ecuador.

In the Late Horizon (1476–1532 CE), the Inca state expanded through a combination of diplomacy and militarism to create an empire stretching from Ecuador to central Chile. The military history of this expansion has been reconstructed in some detail, thanks to native Quechua historiography recorded by sixteenth-century Spanish chroniclers and to archaeology. Over the course of less than a century, the Inca were able to assimilate or subdue hundreds of states, chiefdoms, and ethnic groups, including the old kingdoms of the Titicaca Basin, the Chanka and Wanka polities of the Wari heartland, the empire of Chimor, and finally even most of modern Ecuador, the source of the prestigious *Spondylus* shell. Further expansion failed when Inca armies faced simpler but warlike societies in unfavorable environments in northern Ecuador, the eastern lowlands, Argentina (Chiriguano), and central Chile (Mapuche). On the frontier in northern Ecuador, the Inca used fortresses from earlier polities in the area, while on the southeast frontier in Argentina they built a series of new fortresses to stave off attacks from the Chaco tribes. When Francisco Pizarro (c. 1475–1541) and his 260 Spanish soldiers arrived, the Inca Empire was divided by a civil war between two sons of the former emperor, of which the victorious Atawallpa, destined to be executed by Pizarro in 1533, was based at Quito. Building on native narratives, the chroniclers' accounts of this civil war, battle by battle, are the most detailed description of pre-Columbian warfare in existence. Recruitment to Inca armies was by a general draft apparently aligned with the decimal administrative system, which divided the population into groups of ten, one hundred, and so on. Weapons included slings, bows and arrows, bolas, spears, spear-throwers, lances, axes, and bludgeons. Armor and shields were also used.

Some general conclusions on the occurrence of warfare in the pre-Columbian Andes can be drawn. There seems to have been a distinctly Andean tradition of diplomacy through voluntary conversion and indirect rule that, in many cases, offered means of control other than military conquest. In the periods we call horizons, when large parts of the area were well integrated ideologically, whether or not this was achieved with the aid of military force, there was comparatively little warfare, except at the borders of the unified territories. In the intermediate periods, following the disintegration of such polities, there was much more conflict between different local populations and ethnic groups. Conflicts often seem to have involved rivalry over the control of strategic resources or trade routes. The emergence of new power centers generally occurred on the periphery of previous polities, challenging older centers and contributing to their decline. Warfare, like the nonviolent practice of power it complemented, was always embedded in religious or symbolic meanings and often had a ritual aspect, such as head-hunting and human sacrifice. This is evident even in the Inca period, for instance from accounts of divination and sacrifice in preparation for battle, and from reports that the skins of defeated enemies (e.g., defiant Kañari warlords from Ecuador or rebellious lords from the Titicaca area) could be fashioned into drums played at festivals, and their skulls into drinking cups. The obsession with ritualized warfare, human sacrifice, and cannibalism that has been attributed to the Chibcha-speaking chiefdoms of the Colombian Andes probably had much in common with early instances of theocratic warfare in the central Andes.

Amazonia

Our relative lack of information on pre-Columbian warfare in Amazonia is due partly to the very much poorer archaeological record, owing to the tropical climate and the dominance of organic materials in the material culture of Amazonian groups, and partly to the fact that the social fabric of the region was

Force, and fraud, are in war the two cardinal virtues. • **Thomas Hobbes (1588–1679)**

fundamentally transformed by European epidemics for over a century before the arrival of potential chroniclers. The little information that we have includes archaeological discoveries of defensive ditches around villages on the Río Negro and the upper Xingú River, and the eyewitness account, written by the friar Gaspar de Carvajál in 1542, of an unintentional expedition down the Amazon from Ecuador to the Atlantic which at various points encountered flotillas of canoes laden with warriors or riverbank armies equipped with spears, shields, bows and arrows, or blowguns with poisoned darts. Historical and ethnographical data can probably be used to make some inferences about pre-Columbian patterns, but they remain uncertain. From the first millennium BCE, Arawak-speaking peoples inhabited much of the fertile floodplains and the wet savannas from Orinoco in Venezuela to the Llanos de Mojos in Bolivia. Many of these societies were populous chiefdoms engaged in riverine trade and intensive agriculture. The Arawaks are to this day unusual in prohibiting endo-warfare (war among themselves), which is quite common in other linguistic families. The floodplain societies were the first to succumb to European epidemics and slave raids. Linguistic groups such as Caribs and Tupí have been described as warlike and prone to cannibalism, but it is hard to say how much of the warfare observed by early Europeans in the region was a response to upheavals following their arrival, as decimated and enfeebled riverine groups were subjected to systematic predation by previously marginal groups. The ideology of predation that has been posited as common to most Amazonian Indians, and as generative of endemic warfare and ritual cannibalism, probably has pre-Columbian roots but may have been exacerbated during the colonial period. Feuding among simpler groups has commonly involved raiding for women (bride capture), head-hunting, and accusations of sorcery, whereas the more complex pre-Columbian chiefdoms would have competed over floodplain areas and trade in prestige goods such as metal objects from the Andes. Carvajál reports that the Tupí-speaking Omagua on the upper Amazon took prisoners of war

from inland groups, keeping some as slaves and taking head trophies from others. He also notes that they had spear-throwers with gold and silver inlays, which were probably of Andean origin.

In sum, warfare generally had quite different cultural meanings to the indigenous South Americans and to the European conquistadors of the sixteenth century, which in part explains the incapacity of the former to resist the latter. On the other hand, it seems generally possible to relate the occurrence of warfare to similar kinds of historical processes, for instance the struggle to control important resources or trade routes, and the shifting balance of power between centers and peripheries in regional or global systems of exchange.

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See also Andean States; Amazonia, Ancient; Art—Pre-Columbian Central and South America; Inca Empire

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Warfare— South Asia

South Asia's first recorded civilization utilized citadels and walled cities almost five thousand years ago, indicating a need for military protection. Warfare has been a constant in its history ever since, whether states fought to establish regional empires or foreign armies invaded to colonize. The region may not have achieved political stability yet; India and Pakistan have fought four wars since being partitioned from British India in 1947.

Throughout most of its long history, South Asia has consisted of a multitude of states, all vying against one another for power, territory, and domination. At times, certain states have expanded outward from their core areas to form India-wide or regional empires, such as the Maurya Empire (c. 324–c. 200 BCE), the Cola Empire (850–1279 CE), or Vijayanagara (c. 1346–1565 CE). South Asian empires have also been erected by foreign invaders, as in the case of the dynasties of the Delhi sultanate (1192–1526), the Mughal Empire (1526–1857), and the British (c. 1850–1947). All these contests have involved warfare.

2600 BCE–1720s CE

Very little is known of the military aspects of the first recorded South Asian civilization—the Harappan civilization (c. 2500–1900 BCE)—since its script has not yet been deciphered. That it possessed citadels and walled cities seems to indicate a need for military protection. The Harappans had rudimentary bronze weaponry, mostly swords, spearheads, and arrowheads. Most probably, their enemies were not formidable in terms of either ability or numbers. Although

it was initially thought that the Harappan civilization was destroyed by the invading Indo-Aryan tribes, current research posits that environmental factors caused its demise around 1900 BCE.

The Coming of the Indo-Aryans

From about 1500 BCE, seminomadic, pastoralist, and Sanskrit-speaking Aryan tribespeople began penetrating South Asia from the northwest. Although they possessed sophisticated military technology in the form of the light two-wheeled war chariot, the incoming Aryans were not a disciplined army led by a great leader on a campaign of swift conquest. Indeed, the Aryan “conquest” was more of a migration, measured in generations rather than in years. The numerous Aryan tribes—about forty are mentioned in the Rig Veda, a sacred text dating from the second millennium BCE, if not earlier—were not peaceful. They were in constant conflict with one another, mostly over cattle, which was how they measured relative wealth and power. (The ancient Sanskrit word for *fighting* literally means “to search for cows.”) The mythical conflict between the Kauravas and the Pandavas, which forms the central narrative of the epic *Mahabharata*, has a factual kernel, probably originating as a tribal war over cattle and land in what is now northern Punjab.

When not fighting amongst themselves, the Aryan tribes fought the indigenous Dasas. We know that the Dasas had many forts, because the Rig Veda often refers to Indra, the main Aryan god, as Purandaradasa—“destroyer of the Dasa forts.” Dasa forts may well have been wooden, for Aryan hymns often call upon Agni, the fire god, to help defeat the Dasas. In the

Rig Veda, a war between two Aryan tribal groupings was won by a King Sudasa, whose name indicates that some Dasas had already been assimilated into Aryan culture. Evidence of Aryan attempts to invade and settle peninsular India is contained in the other great Indian epic, the *Ramayana*, which tells the story of the Aryan Prince Rama's expedition to Lanka (Sri Lanka) to rescue his wife Sita, who has been abducted by the evil demon king, Ravana. Rama was aided by the monkey-god Hanuman; some see in Hanuman and his people a reference to the aboriginal tribes or the Dravidian peoples of southern India.

By 500 BCE, the mixing of the Aryan and indigenous peoples had resulted in the distinctive *varna* (caste) social pattern, which most resembled the estates or orders of medieval Europe, and set the template for what became Hinduism. Here, the second-ranking Kshatriyas were the *varna* of warriors and kings. Yet, throughout the traditional period, considerable social mobility existed, especially in warfare. Lower *varna* men fought in the Mauryan armies, alongside charioteers and elephants, and by the eleventh century, it was not uncommon for men from the lowest Vaishya (merchant) or Shudra (labourer) *varnas* to assume Kshatriya or Rajput (literally, "son of a king") status through military service. Indian peasantry supplemented their agrarian incomes by soldiering, which was seen as an honorable profession. A military labor market, mediated by military entrepreneurs known as Jama'dars, became a feature of precolonial India.

Magadha and the Maurya Empire

Kingdoms had developed on the Gangetic plain by 500 BCE. One of these, Magadha, straddling the Ganges River in modern-day Bihar, was responsible for introducing the war elephant into South Asian warfare. Elephants soon became as important as chariots in South Asian warfare. Besides becoming the traditional mount of rajas, elephants were used to trample and slaughter enemy troops, batter down enemy forts, for transport, and as archery platforms. But elephants were expensive and difficult to maintain, and only the richer Indian polities could afford large numbers of

them. Archery was also well developed by 500 BCE. Indian archers used double-curved, composite wood-and-horn bows, which had a range of about 100–120 meters. In battle, archers on foot were shielded by a rank of javelin-armed infantry. The absence of swift horses in South Asia resulted in the transformation of the two-wheeled chariot into the four-wheeled armored chariot carrying many more archers. Thus, though their offensive power increased, their battlefield mobility was impeded. Magadha also developed the catapult.

Magadha became the basis for the Maurya Empire (c. 324–c. 200 BCE), during which time the *Arthashastra*, a classic work of Indian statecraft that adopted an amoral, realist approach to war and diplomacy, appeared. Reputedly authored by the philosopher and imperial adviser Kautilya (flourished 300 BCE), it included details on military organization, strategy, tactics, and logistics, and stressed the value of effective espionage and bribery. That the Mughal emperor Aurangzeb (1618–1707; reigned 1658–1707) wanted to abolish the special fund for bribing enemy forts, and that the British under Robert Clive (1725–1774) defeated the forces of the nawab (provincial governor) of Bengal at Palasi (1757) through bribery demonstrates the remarkable continuity of Kautilyan strategies.

Campaigns

Throughout this period, campaigns of the Indian empires, both north and south, were essentially similar. Armies were moving cities, complete with large bazaars to handle supply. War elephants were the most important component until about 1100 CE. They were displaced by the heavy cavalry of the Muslim invaders, who reintroduced the stirrup—originally invented in South Asia in the first century—to warfare there. The stirrup, by anchoring the rider firmly to the horse, made cavalry a true shock weapon, and more useful than elephants in battle.

Siege engines, and after about 1350, large bombards and cannon—which required industrial and financial capacity that only the large empires could sustain—were highly unwieldy, requiring



Tulsi (the elder) and Jagjivan, *Battle Scene with Boats on the Ganges* (1590–1595). Opaque watercolour and gold on paper. Collection Victoria and Albert Museum.

hundreds of pack oxen. This meant that the progress of an imperial army was painfully slow, about 8 kilometers per day even in Mughal times. Given the nine-month-long, monsoon-delimited campaigning season, an imperial army's typical reach was between 1,080 and 1,200 kilometers. Campaigns were also slowed by the nature of the frontiers, which were imprecise bands of territory between two core areas, inhabited by petty rajas who would either have to be co-opted or subdued before the invading army could proceed. Battles were short and confused affairs, the onus being on individual heroic prowess rather than

on disciplined maneuver. If a king or commander were killed or captured, then as in *chaturanga*, the precursor to chess that was popular among members of the Kshatriya class, his army was considered defeated.

Traditional Indic warfare was land based. The only exception to this was the Colas, who, under Rajaraja I (reigned 985–1014) and his successor Rajendra I (reigned 1014–1044), took to the sea to conquer Sri Lanka and Srivijaya (an empire located on the islands of Sumatra and Java). The strategic vision impelling these seaborne campaigns was the control of South-east Asian maritime trade.

The Mansabdari System

Traditional Indic polities were segmentary, essentially “military confederation[s] of many chieftains cooperating under the leadership of the biggest among them” (Stein 1980, 55). Loyalty was a problem. The Mughals met this challenge with the *mansabdari* system, which entailed granting a specified rank to a noble and entitling the noble to revenue from an assigned area of land. *Mansabdari* ranks carried with them the duty to provide a specified number of cavalrymen for battle. A rank was not hereditary, however, and could be revoked at the emperor’s pleasure. The *mansabdari* system was an early attempt at creating military professionalism in India.

Colonial Warfare, 1720–1947

European penetration of India, which had far-reaching military consequences, began in the 1600s, with the appearance of European trading companies on India’s shores. Initially, the armed forces of the main contenders—the English and the French East India companies—were not a serious threat. But by the 1720s the French, balking at the high cost and low survivability of European soldiery in Asia, were recruiting Indian musketeers, whom they called *sepoys*, after the Persian word *spahi* (soldier), and training them in the latest European tactical doctrine of close-order drill and volley firing. Battles such as Adyar River in 1746 and Buxar in 1764 proved that small sepoy detachments could defeat much larger Indian hosts. The British copied the French, and both countries took advantage of the political flux resulting from the Mughal Empire’s decline to become players in South Asian geopolitics.

The English proved more successful at this, defeating the French twice (1744–1748 and 1749–1754). They then turned their attention to defeating the Indian polities, winning wars against Mysore (1767–1769, 1780–1784, 1790–1792, 1799), the Marathas (1775–1782, 1803–1805, 1817–1818), the Gurkhas (1814–1816), and the Sikhs (1845–1846, 1848–1849). Each of these wars resulted in

the widening of the English East India Company’s (EIC’s) territory. The Marathas and the Sikhs were formidable foes who adopted Western tactics and weaponry. To fight them, the EIC tapped into the military labor market to vastly increase the size of their land forces. By 1796 these numbered 57,000 sepoys, bolstered by an additional 13,000 British troops; by 1856 there were 226,352 sepoys and 38,502 British troops. These were distributed amongst the three “presidency” armies of Bengal, Bombay (now Mumbai), and Madras. These armies only cooperated during wartime; otherwise they were fairly autonomous. This autonomy extended to recruitment. While the Bombay and Madras armies recruited Indians of many communities and castes, the Bengal army, which was also the largest, increasingly recruited Brahmans (that is, people of the highest-status *varna*) of the Gangetic heartland. The EIC ensured that sepoy wages were regularly paid, in contrast to the rather haphazard arrangements obtained in the Indian polities. This increased the incentive for Indians to become EIC sepoys. The EIC state financed its land forces by resorting to military fiscalism: it used its army to accrue territory, the revenue from which was used to finance its army.

The Uprising of 1857–1858

By the mid-nineteenth century, sepoy units were commanded by British officers, with a subordinate Indian officer class acting as a crucial liaison between the British officer and the Indian private soldiers, but effectively barred from higher command. In 1857 the Bengal Army’s Hindu and Muslim sepoys rose up against their British officers. The mutiny was sparked by the fears of the sepoys that the British were conspiring to make them transgress their religion through the introduction of new weaponry lubricated with animal fat, which was forbidden by religious law to both Hindus and Muslims. But the military mutiny quickly became a generalized revolt against the EIC. Cantonment (garrison) towns such as Lucknow and Kanpur



became centers of revolt, as did the old imperial city of Delhi, where sepoys gathered with vague ideas of restoring the Mughal Empire. The heavily outnumbered British were caught completely off guard. Had the mutinous sepoys attacked Calcutta (Kolkata), the capital of British India, they might have won. As it was, the British were able to rally, relying on Punjabi sepoys and on reinforcements that arrived by sea. That quelling the uprising took a full two years speaks to its seriousness and to the military prowess of the Indian leaders such as Rani (Queen) Lakshmi Bai (1835–1858) of Jhansi, and Tantia Topi (c. 1819–1859).

After the “Mutiny,” as the British termed it, the British Crown took over the Indian army. Measures were undertaken to prevent another mutiny. The ratio of British to Indian troops was set at one to three, and recruitment, even in the Bombay and Madras armies, was focused more towards the northwest. The Indian military was thus separated from Indian society. British authorities justified this on the basis of the “martial races” ideology, a mixture of practical concerns and Victorian ethnography, which held that in India, “only certain clans and classes...[had]...the physical courage necessary for the warrior” (MacMunn 1911, 129). These “martial races” included Sikhs, “Punjabi Musalmans” and Nepali Gurkhas. To further ensure against mutinies, the ethnic composition of army units was strictly monitored.

South Asian Forces Abroad

During the late nineteenth century, South Asian warfare centered on the Indo-Afghan frontier, the scene of the “Great Game,” a rivalry between the Russian and British empires. Over twenty campaigns and the Second Afghan War (1878–1880) were fought in largely fruitless attempts to control the area’s tribes. During this time the cost of the Indian army, which amounted to about 30 percent of the Indian budget, was entirely borne by Indians. Indian forces also participated in military efforts in many parts of the British Empire, mainly in Africa and Asia.

This overseas deployment was greatly increased during World War I (1914–1918), in which India, as a British imperial possession, was committed to the Allies. The unified Indian army’s Meerut and Lahore divisions, as Britain’s strategic reserve, were deployed on the western front (France) in 1914–1915. Sepoys also saw action in the disastrous Mesopotamian campaign (1915–1916), in east Africa (1915–1918), and in Palestine (1917–1918). The prospect of fighting their Ottoman coreligionists caused Muslim sepoys at Singapore to mutiny in 1915. Sepoy recruitment skyrocketed, reaching ten thousand men a month by 1915. By 1918 India had recruited 1.4 million men for the Allied war effort, many from classes previously deemed “unmartial.” In 1917 Indians were allowed into the Indian army’s officer corps, which had, until then, been “...properly reserved for the governing race” (Sundaram 2002, 75).

After World War I, the army reverted to its frontier warfare role. It was also used to disperse Indian nationalist disturbances, most notoriously at Amritsar in 1919. Some sepoys’ refusal to fire on nationalist demonstrators at Meerut in 1930 indicates that they were becoming nationalist themselves. This period also witnessed the setting up of officer training for Indians in India itself. The British strongly preferred “martial-race” Indians (such as Sikhs and Punjabi Muslims) as officers, and posted them to only 7.5 percent of the army.

During World War II the Indian army again ballooned—to 2.2 million men—and men from nonmartial groups were recruited in increasing numbers, though Indian nationalists resented being once again dragged into war without being consulted. Though the Indian army fought in the North African and Italian campaigns, its most significant deployments were in Malaya in 1941–1942 and in Myanmar (Burma) in 1941–1945. Malaya was a harsh battleground for the Indian army, which was ill-trained and ill-equipped for jungle warfare; forty-five thousand Indian *jawans* (soldiers) were captured by the Japanese. Out of this group was formed the Indian National Army (INA), a force allied to the Japanese,

whose aim was to gain Indian independence from Britain. Though not a significant military threat, the very existence of such a force was further proof of the upwelling of nationalist feelings in the military, and of the fact that, once the war was over, *jawans* would not stand for continued British rule. After shattering defeats, the Indian army overhauled itself in 1943–1944, and met and defeated the Japanese invasion of northeastern India in 1944. Whereas in 1939 there were only eleven Indian majors, by 1945, 40 percent of the Army's officers were Indian, and there were Indian brigadiers.

South Asian Warfare since 1947

The partition of British India into the sovereign states of India and Pakistan in 1947 resulted in the partition of the old Indian army, endemic warfare between the two new states (centered mainly around the border area of Kashmir), and differing models of civil-military relations. Broadly, the army was divided on a two-to-one ratio, with two units going to India for every one going to Pakistan. Partition gave Pakistan most of the cantonments and training facilities, but it gave India the war industries. Between 1947 and 1999, India and Pakistan fought four wars, one of which, in 1971, led to the independence of East Pakistan as the nation of Bangladesh. Two of the wars have been stalemates and two have been Indian victories. These wars have been short, reflecting the immense cost of modern warfare for developing countries. Insurgency still continues in Kashmir, which has been unofficially partitioned. Though the military officers of both countries are still mostly drawn from the "martial races," their civil-military relations are radically different. Whereas the Indian military has been effectively subordinated to the civilian democratic government, Pakistan has been subjected to long periods of military rule (1958–1972, 1977–1988; 1998–2007). Though both countries now possess nuclear weapons, India is reasonably stable. Pakistan, however, is being assailed by the Taliban on one side, and its own army's Inter-Services-Intelligence agency on the other, and it is

dangerously close to becoming a failed state, which could threaten the stability and security of the entire region.

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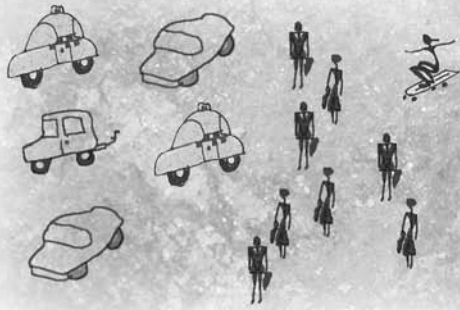
See also European Expansion; Mughal Empire; Sikhism; Trading Patterns—Indian Ocean

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Warfare— Southeast Asia

Indigenous warfare has been an important component of Southeast Asian society. Methods of warfare changed and improved over time, as did the purpose of armed conflict, whether religious, political, or social. Warfare in Southeast Asia depended more on attaining booty and political objectives, and less on expanding territory and disseminating culture.

Before foreign intervention and the introduction of firearms to Southeast Asian societies in the fifteenth and sixteenth centuries, headhunting was a prevalent form of conflict both on the mainland and in archipelagic Southeast Asia. Headhunting raids allowed male warriors to prove their manhood and indicate preparation for marriage. Failure in these raids was considered a disgrace and damaged men's social status. Armed conflict was carried out in the context of ceremonies to honor and glorify ancestors and spirits. Religion was a justification for warfare as well. Buddhism was active in Southeast Asian societies, and Buddhist leaders waged war whenever there was a threat from competing religions or whenever they felt that the religion's influence was declining.

Interpretations of Warfare

European nations that established a commercial presence in Southeast Asia during the fifteenth and sixteenth centuries viewed warfare differently from the indigenous inhabitants. The Vietnamese considered war as a means to an end, but the end was the attainment of material goods and war captives for human labor purposes, not territorial ambition.

Similarly, on the islands of Bali and Java, prisoners of war were used as slaves and exported between 1650 and 1830. This was a common feature of warfare in most Southeast Asian countries. The objective was booty and political control and not territorial ambition or diffusion of civilization. One sought to control an enemy capital and its nearby communities to secure material and human resources rather than to change individuals' ways of life.

Between 1407 and 1427, Ming China defeated Vietnam and occupied the country, including its capital, Hanoi. The Vietnamese studied the advanced military techniques and the bureaucracy and government of the Ming. Eventually the Vietnamese drove out the Chinese, but as a result of Ming influence, the Vietnamese came to believe—as the Ming Chinese did—that war should be used to civilize barbarous cultures. The Vietnamese used force against their southern and northern neighbors, the Chams and Tai. Exploration of new lands and their annexation were further justifications for warfare that the Vietnamese and other Southeast Asian civilizations slowly adopted.

The tactical use of terrain in combat was critical in waging conflict. Vietnamese armies used the terrain to achieve success on the battlefield during their wars against the Chams and Tai. In campaigns against the Chams, Vietnamese commanders relied on amphibious assaults and regular troop movements on flat coastal areas. Against the Tai, who occupied valleys and mountain regions, Vietnamese armies conducted quick strikes and flanking movements in order to avoid becoming trapped and isolated in the mountains.



Y. Pranishnikoff, *Military Cadets of Tonquin, North Indochina* (1899). The Chinese relinquished rights to French-occupied Tonquin (now Tonkin, Vietnam) in 1875; it became part of French Indochina in 1887. New York Public Library.

Foreign Influence and Methods of War

European and Chinese governments occupied and dominated parts of Southeast Asia as far back as the fifteenth century. They brought with them new weapons that altered indigenous warfare. Firearms, although not common, were available by the fifteenth century from both sources and allowed Southeast Asian societies allied to the Europeans or Chinese to subdue their less well-equipped neighbors. Bows, arrows, lances, blowpipes, and animals such as horses and elephants were gradually replaced with cannons and muskets. Kingdoms in Malaysia and Indonesia retained traditional weapons while adopting new ones in order to maintain tradition. Firearms were mythologized in a positive manner.

Twentieth-century warfare in Southeast Asia saw a new concept emerge. Guerrilla and protracted conflict was prevalent as a means to defeat imperialism and

enhance nationalist sentiment. Filipino rebels made use of guerrilla raids against U.S. troops during the early 1900s but were eventually conquered. During the Japanese occupation of China and Southeast Asia in the 1930s and 1940s, Chinese nationalists and rebels used guerrilla tactics and foreign aid from the West to achieve victory and end foreign domination. Guerrilla warfare flourished during the Cold War as indigenous Communist forces attempted to unify their countries under a Soviet brand of Communism or their own style of socialist government.

The Vietnamese defeat of the French at Dien Bien Phu in 1954 and their eventual strategic victory over the United States in the Vietnam War (1959–1975) showed how successful guerrilla warfare and manipulation of public opinion could be in overthrowing foreign domination. The involvement of the United States in Vietnam introduced changes in the conduct of war and foreign affairs in general. Now the consensus is that nations should have clear objectives, a popular



Army of the Republic of Vietnam (ARVN) Prisoner of War Repatriation. Prisoners of war shed their prison garb and shout political slogans as they returned for repatriation on 13 March 1973. National Archives.

base of support, approval from the world community, and credibility if they are to wage a war successfully.

Terrorist activities by Islamic fundamentalists in the late 1990s and into the early twenty-first century have continued the earlier trend toward guerrilla warfare and protracted conflict. Western powers such as the United States continue to support, either directly or indirectly, low-level warfare against those deemed terrorists or insurgents.

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Warfare— Steppe Nomads

The nomadic pastoralists of the Central Asian steppes played a major role in Eurasian warfare from nearly six thousand years ago until the early eighteenth century. Their wars, internal and external, shaped patterns of politics, trade, and cultural exchange throughout the Eurasian world, and they produced some of the most successful and fearsome conquerors world history has known.

The foundation of nomadic military interaction with, and success against, their sedentary neighbors was the geography of the steppes. A vast sea of grass stretching from the northwest frontiers of China to north of the Black Sea, with an extension into modern Hungary, the steppes are too dry for traditional methods of agriculture: rainfall is insufficient and the rivers too unreliable for irrigation. But the grasses of the plains can support vast herds of grazing animals, and these formed the basis for the nomad's pastoral mode of subsistence. Cattle, sheep, and goats provided meat, milk, skins, and wool for clothing and shelter; animal bones and tendons were used in constructing tents and above all in the manufacture of the composite recurved bow that was the nomads' main weapon in hunting, herding, and war. One other animal held the key to nomadic efficiency in herding and combat: the horse. Horses were apparently first domesticated in the area north of the Black Sea as long as six thousand years ago; they and the oxen that drew the carts that carried the nomads' tents and possessions let entire peoples migrate from summer to winter grazing lands and to entirely new lands in response to outside pressures. Horses also gave steppe armies tremendous tactical and strategic mobility.

Mobility and firepower, wielded by people accustomed to constant travel, camping, occasional short rations, and periodic violent competition with other nomads for the best grazing land—that is, accustomed to constant military campaigning as a lifestyle rather than as an aberration from settled life—gave nomadic peoples significant military potential vis-à-vis their sedentary agriculturalist neighbors outside the steppes. At the same time, the limitations of pastoralism necessitated at least indirect contact with sedentary populations: nomads needed at least a few agricultural products to supplement their diet. They also desired certain products, most importantly cloth and metal implements, whose fixed capital requirements for production made them difficult for nomadic peoples to produce. Thus nomadic peoples tended to get what they wanted from agricultural societies by trading, raiding, tribute (bribes to deter raids), or conquest. This was the fundamental economic backdrop to steppe nomads' warfare with people beyond the steppes.

Geography and State Formation

Nomadic warfare was in the first instance intertribal, aimed at other nomads in competition for grazing lands, as mentioned earlier. Because the pastoral way of life supports a far less-dense population than agriculture, individual tribes could rarely muster sufficient manpower to pose a serious threat to sedentary states. Hindered by their meager surplus wealth and scattered population base, steppe peoples rarely generated political formations more complex than individual tribes. The paradoxical result was that nomadic coalitions (and therefore the nomadic

military threat) were most likely in close proximity to rich settled states. Trading and small-scale raiding along the border might generate a sufficient flow of prestige goods to a successful steppe leader to allow him to build a larger coalition of tribes through a combination of alliances built on gifts and intimidation of others based on those alliances. This larger coalition's army could then extract a larger flow of goods from the sedentary state (and could draw attention from sedentary armies, increasing the pressure for defensive cooperation), allowing the coalition to grow, and so on. Large coalitions subsumed, at least for a time, their constituent tribes into chiefdoms and at least once, under the Mongols, into a fully fledged nomadic state, though such coalition chiefdoms tended to be fragile and to break up in the face of serious reverses or succession crises. Thus warfare and strong war leaders were crucial to state formation on the steppes.

Another aspect of steppe geography tended to concentrate such state formation at the eastern end of the steppe. Here the Mongolian plain abutted the northwest frontier of the Chinese civilization, which from the second century BCE was consistently organized into a rich and periodically aggressive state. In addition, migration of hunter-gatherers from the forests and tundra to the north generated new tribes and pressures more intensely here than farther west. The largest and most powerful nomadic coalitions therefore tended to arise here. Losers (either internally or in conflicts with China) were pushed westward, generating the east-to-west migrations that usually characterized steppe populations and that sometimes became nomadic incursions into settled lands at the outlets of the steppes into Persia and Europe. If the Silk Roads across the steppes connected Eurasia commercially, then the pressures of warfare and state formation on the steppes connected Eurasia militarily.

Nomadic Warfare: Tactics and Strategy

The tactical effectiveness of nomadic warfare was based in the first instance, as noted above, on the

combination of mobility and firepower that horses and composite bows gave to steppe peoples. In the hands of a practiced archer, the bow, a short but powerful weapon made from a combination of wood, horn, and sinew glued together and strung against its natural curve, could send light arrows several hundred yards with some accuracy or direct heavier arrows over shorter ranges with dangerous penetrating power. Nomadic horse archers were skilled at harassing enemy formations from a distance, retreating when counterattacks were launched, only to return to the attack when the enemy advance became scattered or disorganized. Feigned flights were thus a standard part of the nomadic tactical repertoire. Elite nomadic warriors—tribal nobles and the favored forces of larger coalitions—often wore armor that included some sewn-on metal plates and was heavier than the leather and raw silk protection worn by regular horse-riding archers; the elite forces also wielded lances and even swords. This heavier element in nomadic armies could engage in hand-to-hand combat, delivering a decisive charge against an enemy softened up by archery. Nomadic armies often drew up for battle in a broad, shallow crescent formation, the wings thrown forward with the aim of encircling the enemy flanks. But flexibility was the key nomadic strength in combat, as they used their mobility to create chances to “herd and cull” the formations of sedentary armies using the skills they practiced on mass animal hunts on the steppes.

Still, in the right terrain and under competent leadership, sedentary armies could sometimes defeat nomadic forces in battle, using their often superior weight of armor, weaponry, and numbers to break nomadic lines in hand-to-hand fighting.

What increased the challenge posed by nomadic forces was their operational mobility and above all their strategic trump card: their base in the steppes. The armies of sedentary states, which inevitably included large numbers of infantry, could not hope to keep up with the purely cavalry forces of the steppes: the latter could outrun pursuit and avoid battle when it suited their purposes, raiding and withdrawing before



opposition could arrive on the scene. The Mongols deployed this advantage offensively, using their efficient communication system to bring several units to a battlefield from different directions, often inducing panic in their enemies and giving them the impression of being surrounded by “hordes” far larger than they in fact were (the Mongols, like other nomads, often fought outnumbered against sedentary armies). But mobility was most useful defensively, in combination with the logistics of steppe warfare. When threatened by superior forces, nomadic forces could simply withdraw onto the steppes. It was very difficult for a large infantry army to follow them into this terrain because the land could not support armies that lived on grain supplies. Carting supplies in was both prohibitively expensive and subject to severe range restrictions, as the oxen or horses used to pull carts of food also had to be fed. Thus, beyond perhaps a four days’ march from a supply depot, even armies with large supply trains ran out of food—never mind that water supplies were also often problematic. Attempts to push beyond this limitation consistently ended in disaster. For four and a half millennia, consequently, steppe nomads raided and conquered from a base itself immune to conquest except by other nomads. Because nomadic strategy and tactics were so firmly based in the nomadic lifestyle, sedentary generals could not adopt them easily. Adoption of nomadic techniques therefore usually required use of nomadic allies by sedentary states, an arrangement that carried its own dangers.

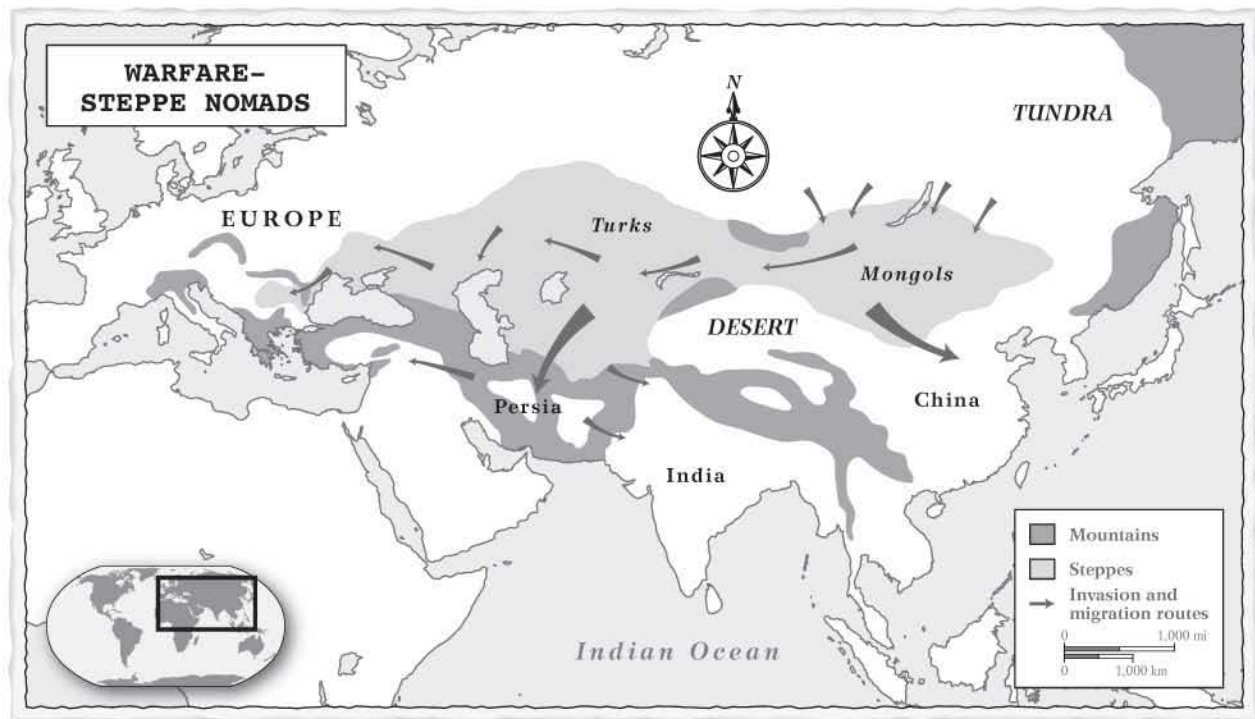
Given this immunity, the military measures sedentary states took against nomadic threats often centered on various forms of fortifications, since the major weakness of most nomadic armies (the Mongols being a partial exception) was, inevitably, siege warfare. Not only were city fortifications built up on the steppe frontier, but some states built larger systems of fortification such as the various walls that came to form the Great Wall of China. These were designed less to keep the nomads out (virtually an impossibility) than to slow them on their advance and return from a raid, thereby allowing a defensive force to

bring them to battle. But fortifications were also expensive.

Cycles of Nomadic Military History

The relationship that developed between nomadic peoples and their sedentary neighbors as a result of these military dynamics tended to follow a cyclical pattern. Small-scale raiding and trading resulted in both increasing acculturation of the nomads to the political norms of the sedentary society and increasing political organization on the steppes. Both results tended to facilitate large-scale alliance with or conquest of the sedentary state and temporary union of the nomadic and sedentary worlds. But the economic and cultural incompatibility of the two worlds led to renewed split, and the cycle started over. Overall, the long-term trend was toward growth of the sedentary world at the expense of the nomadic world. This was fundamentally a matter of demography: agriculture supported far more people than pastoralism, and the advantage grew over time. But it was also a matter of technology. Gunpowder weapons, in combination with fortifications, paradoxically both contributed to and helped end the last great age of nomadic conquests.

Broadly, the stages of nomadic history may be outlined as follows. A classical age, from the first appearance of nomads such as the Xiongnu in China and the Scythians in the west through the late second century CE, and the decline of the Parthian Empire in the first decades of the third century CE, established the patterns of interaction between the nomadic and sedentary worlds. Between the third century and the twelfth century, larger nomadic coalitions of Uygurs in the east and Turks in the west dominated the steppes, with peaks of invasion and conquest of sedentary areas in the seventh and eleventh centuries. Then in the thirteenth and fourteenth centuries, the Mongols under Chinggis (Genghis) Khan (c. 1160–1227) and his successors created the largest land empire in history. Their extraordinary success rested in part on Chinggis Khan’s remarkable ability to reshape the tribal political structure of nearly the



entire steppe world to his advantage, creating the basis for a longer-lasting nomadic political structure than hitherto. Still, the Mongol Empire fractured among Chinggis's grandsons and then drifted apart as the Mongols acculturated to their conquered populations. Finally, with the spread of gunpowder technology from the fifteenth century (a somewhat ironic result, in part, of the trade connections promoted by the Pax Mongolica), there appeared a set of hybrid states and military forces, including the Ottomans, the Mughals, the Muscovites, and the Manchus, who managed to wed nomadic cavalry forces to cannon and musket-wielding infantry. Though initially this combination facilitated the renewed conquest of vast sedentary areas by nomadic-led forces, it also proved to be the combination that allowed the empires thus created to tame, once and for all, their own nomadic frontiers. By the early eighteenth century, the remaining steppe nomads, hemmed in by fortifications, guns, and co-opted light cavalry forces of nomadic origin, passed out of the realm of military effectiveness for good.

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See also Chinggis Khan; Horses; Steppe Confederations

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Warsaw Pact

The Warsaw Pact, officially known as the “Treaty of Friendship, Co-Operation, and Mutual Assistance” among the seven socialist states of post-World War II Europe (Poland, Hungary, Czechoslovakia, Romania, Bulgaria, Albania, and the Soviet Union), was the Soviet Union’s most significant multinational military alliance from 1955 until its collapse in 1991.

As the Red Army (later called the Soviet Army) swept through the eastern part of Europe at the end of World War II, it incorporated more than a half million troops from countries in eastern Europe into its forces. By 1949, by which time the Cold War between the Soviet Union and the United States was already well established, the Soviets had concluded bilateral military alliances with each of these Eastern European countries, all of which were by then Communist. The alliances permitted 1 million Soviet troops to remain in the region and subordinated the armed forces of the satellite countries to Soviet military authorities. During the early 1950s the European allies of the United States, seeking to find a way to defend themselves against a possible Soviet attack, decided that they would have to rearm the recently defeated Germany, that is, the newly created Federal Republic of Germany (West Germany). In 1954, after an effort to create a completely European military force failed, the United States joined fifteen other countries to create the North Atlantic Treaty Organization (NATO). To counter this alliance, on 1 May 1955, the Soviets created the Warsaw Treaty Organization (WTO), which is often referred to as the Warsaw Pact, transforming the formerly bilateral alliances into an international organization.

The members of the Warsaw Pact claimed that it was formed in the postwar spirit of creating effective international organizations. In fact, the Soviets made no effort to create a truly cooperative, multinational force. They dealt with their allies primarily in the old bilateral forms, thus inhibiting the possibility of the Eastern Europeans allying among themselves on sensitive issues. While the Soviets devised strategy and designated their own troops as the primary combat units, the Eastern European militaries managed the war games, mobilized forces, or acted as Soviet proxies in furnishing Third World countries with arms. The fundamental strategic plan of the Warsaw Pact, that is, of the Soviet Union, was to achieve a quick victory over NATO forces after any attack. In fact, documents recovered after the collapse of the German Democratic Republic (East Germany) suggest that few people outside of a narrow elite were aware of the details of NATO’s defense in depth, rendering the Warsaw Pact’s strategic plan doubtful at best.

The most serious crises that the pact confronted were the Hungarian Revolution, the Prague Spring, and the Solidarity movement: in 1956, when a serious revolt broke out in Hungary, the Soviets, without consulting their allies, crushed it with 200,000 troops. In 1968, when the Czechoslovak government introduced reforms such as greater freedom of the press, the Soviets reacted by occupying Czechoslovakia with Warsaw Pact forces consisting of twenty-three Soviet divisions supplemented by five Eastern European divisions and a small group from Bulgaria. This preponderance of Soviet forces clearly demonstrated the actual position of the Eastern European allies in the organization, as well as the coercive nature

The outcome of the war is in our hands; the outcome of words is in the council. • **Homer (ninth–eighth? c. BCE)**

of Communist rule in general. In 1981, the Soviets were spared the difficult choice of whether to use WTO forces to invade Poland, where the Solidarity movement was challenging the government, when the Polish leadership itself imposed martial law. These three crises, especially the last two, led to increasing disillusionment among the Eastern European allies. The Romanians did not send any troops to help put down the Prague Spring in 1968 and shortly thereafter insisted that Soviet troops leave their country. Albania, which had already become inactive, completely withdrew in 1968 also. During the 1980s, meetings of the Political Consultative Committee, allegedly the highest organ of the WTO, often provided the increasingly restive Eastern European allies a forum for voicing their views.

In 1989 the sudden and unexpected collapse of Communism in all the Warsaw Pact countries except the Soviet Union quickly made the pact obsolete. When East Germany joined the Federal Republic of Germany, the futility of maintaining the WTO became manifest. On 1 July 1991, Vaclav Havel,

president of Czechoslovakia, declared the Warsaw Treaty Organization dissolved. The fact that Havel was a former dissident lent a peculiar irony to the end of this not particularly effective alliance.

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See also Eastern Europe; Russian Soviet Empire

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Waste Management

Humans have always created waste. Throughout history it has been left behind, dropped into streets, dumped in waterways, covered with dirt, composted, incinerated, and recycled. Advances have been made globally to confront the complex problems of waste generation, collection, disposal, and materials recovery, but finding a way to manage solid waste in order to preserve resources and minimize pollution is a continuing challenge.

Over the years and around the world, solid waste—garbage, trash, or rubbish—has been abundant, cumbersome, and often polluting. But many factors besides waste itself combine to produce a waste problem, including perception and the conditions under which people live. The greatest refuse-management problems exist in cities. Waste also has social and cultural meaning; what societies retain and what they throw away says a great deal about them and the values they place on material goods.

Before the Industrial Revolution

Humans began abandoning the nomadic life around 10,000 BCE. Tribes that followed game left their wastes behind. In towns and cities such habits could not be tolerated by the citizenry, but methods of dealing effectively with refuse took time. In ancient Troy, food and human wastes were sometimes dropped on the floors of houses or dumped into the streets. When the stench became unbearable, people covered the droppings with a fresh supply of dirt or clay. In the streets, pigs, dogs, birds, and rodents ate the organic material. The debris accumulation in Troy amounted

to about 1.5 meters per century, and as much as 4 meters per century in other cultures.

While the state of sanitation was appalling in many parts of the ancient world, there were some signs of progress. In Mohenjo Daro, founded in the Indus Valley about 2500 BCE, central planning led to the construction of built-in home rubbish chutes and to the institution of scavenger services. In Heracleopolis, founded in Egypt about 2100 BCE, wastes were collected in areas inhabited by the privileged but dumped primarily in the Nile River. About the same time, the homes of the Sea Kings in Crete had bathrooms connected to trunk sewers, and by 1500 BCE the island had land set aside for disposal of garbage.

Religion sometimes was important in enforcing sanitary practices. About 1600 BCE, Moses wrote a sanitary law code under which Jews were expected to bury their waste far from living quarters. The Talmud required that the streets of Jerusalem be washed daily despite the scarcity of water.

In the classical period, waste plagued even the high culture of Athens. About 500 BCE, Greeks organized the first municipal dumps in the Western world, and the Council of Athens began enforcing an ordinance requiring scavengers to dispose of wastes no less than 1.5 kilometers from the city walls. Athens also issued the first known edict against throwing garbage into the streets and established compost pits.

Ancient Mayans in the New World also placed their organic waste in dumps and used broken pottery and stones as fill. Records from second-century BCE China reveal “sanitary police” who were charged with removing animal and human carcasses and “traffic police” responsible for street sweeping.



Ancient Roman public toilets (latrines), Ostia Antica. Rome's aqueduct system provided a stream of non-potable drinking water to flush away waste.

Because of its size and dense population, Rome faced sanitation problems unheard of elsewhere. While garbage collection and disposal were well organized by the standards of the day, they did not meet the city's needs. General collection was restricted to state-sponsored events, and property owners were responsible for cleaning the abutting streets—although the laws were not always enforced. Wealthy Romans used slaves to dispose of their wastes, and some independent scavengers gathered garbage and excreta for a fee and sold the material as fertilizer. When Rome's power waned, the quality of the city's environment deteriorated.

As western Europe deurbanized in the Middle Ages—due in great degree to widespread plagues—people were spared the massive waste problems experienced by densely populated cities. Despite the crudity of medieval dwellings and living conditions, the eventual rise of new cities was accompanied by greater attention to health practices. Cities began paving and cleaning streets at the end of the twelfth century.

The migration of rural peoples to urban places also meant the migration of hogs, geese, ducks, and horses into the cities. In 1131 a law was passed prohibiting swine from running loose in Paris after young King Philip was killed in a riding accident caused by an unattended pig. But animals continued to roam the streets as scavengers. In the great Islamic cities and in China, however, public areas were better maintained than in Europe during the Middle Ages and the Renaissance.

Industrial Age Waste Problems

With the onset of the Industrial Revolution in the 1760s, urban sanitation took a turn for the worse, first in England then on the European continent. The inability to house the growing population migrating to the industrial centers led to serious overcrowding and health problems. As late as 1843, a major section of Manchester had only one toilet for every 212 people.

English cities, however, were the first to establish city services to confront the problems. (Some research suggests that Vienna established a refuse collection system that was one of the earliest on record in the eighteenth century.) While it is easy to exaggerate the range and quality of services provided, the largest industrial cities in England and elsewhere had rudimentary public works and public health agencies by the early nineteenth century.

The rise of public health science was crucial. Cholera epidemics ravaged England in the early nineteenth century, and in the late 1820s many people accepted chronic dysentery and other endemic diseases as normal. The 1842 Poor Law Commission's *Report on the Sanitary Condition of the Labouring Population of Great Britain*, authored by Edwin Chadwick, came to the conclusion that communicable disease was related to filthy environmental conditions. The filth—or miasmatic—theory of disease was the most significant force for promoting environmental sanitation until the twentieth century, when the germ theory identified bacteria as the culprit in spreading communicable diseases.

While Europe was in the throes of its Industrial Revolution, the United States was just emerging as a nation. Many of the European lessons about sanitation, therefore, were not applied immediately. Early America was highly decentralized, and the smaller towns and cities did not face the enormous waste problems of London or Paris. Yet habits of neglect affected these communities too. Casting rubbish and garbage into the streets was done casually and regularly, despite the fact that crude sanitary regulations were common by the late seventeenth century in



major towns. In 1634 Boston officials prohibited residents from throwing fish or garbage near the common landing. In 1657 the burghers of New Amsterdam passed laws against casting waste into streets.

By and large, sanitation in preindustrial America was determined by local circumstances. Some city leaders placed a high priority on city cleanliness, applying the principles of environmental sanitation. Others simply ignored the problem. Individuals or private scavengers usually collected refuse. Boards of health were slow in developing, understaffed, and limited in power. It was not until 1866 that New York City became the first American city to establish a systematic public health code.

The solid waste problem became a serious issue in American cities during the Industrial Revolution. Crowded cities produced mounds of garbage. Coal mines left hills of slag. Pigs or turkeys still roamed the streets and alleys in some towns looking for scraps; horses dumped tons of manure into thoroughfares; and rivers, lakes, and the oceans became sinks for tons of urban discards.

Boston authorities estimated that in 1890 scavenging teams collected approximately 350,000 loads of garbage, ashes, rubbish, and street sweepings. In Chicago 225 street teams gathered approximately 1,500 cubic meters of refuse daily. In Manhattan in 1900, scavengers collected an average of 555 tonnes of garbage daily. Because of seasonal variations in available fruits and vegetables, that amount increased to about 1,000 tonnes daily in July and August. One hundred years later, the United States produces more than 226 million tonnes of municipal solid waste each year, and possibly as much as 350 million tonnes per year. This represents almost 2 kilograms per person per day.

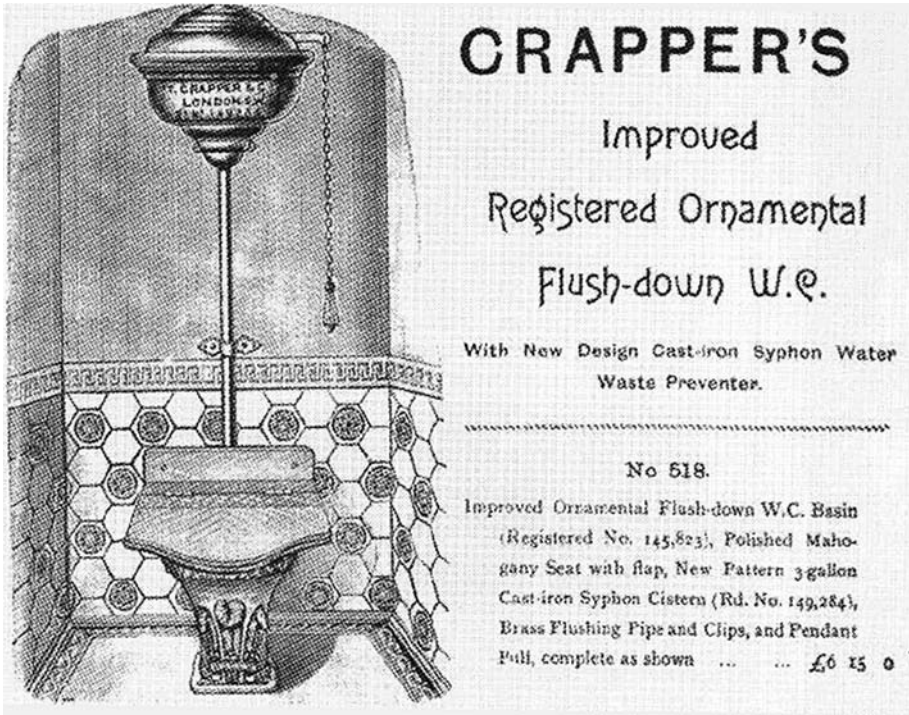
The Worldwide Waste Stream

Unfortunately, the United States is a leader in many categories associated with municipal solid waste generation, although the waste problem is not restricted to the United States. While the composition of solid waste varies considerably throughout Europe, organic

material and paper dominate the waste stream. These two categories account for between 50 and 80 percent of residential waste materials. Glass, plastics, and metals make up as little as 10 percent to as much as 25 percent. In Eastern Europe, organic materials are more plentiful than glass, plastics, and metals. Overall figures suggest substantially less use of packaging material in Europe as a whole, for example, than in the United States.

Affluence is a strong dictator of waste volume and variety. For example, in higher-income economies in Israel, Saudi Arabia, and the United Arab Emirates, abandoned cars, furniture, and packaging are openly discarded. In Asia, paper and plastics waste are generally greatest in Tokyo and Singapore, while very low in Beijing and Shanghai (due in part to recovery and recycling). On the Indian subcontinent, organic and inert matter dominates waste disposal, and per capita per day disposal rarely exceeds 0.8 kilograms. The same is true for African cities, where waste is high in organic material and also rarely exceeds 0.8 kilograms. Waste in Latin America generally is high in organic material, but can average 1 kilogram per day.

While the discards of nineteenth-century America were largely food wastes, wood and coal ash, rubbish, and horse manure, the current waste stream includes a complex mix of hard-to-replace and recyclable materials, as well as a variety of toxic substances to a much greater extent than anywhere else in the world. Of all current discards, paper, plastics, and aluminum have increased the most. Paper makes up about 38 percent of the U.S. waste stream; plastics, 11 percent; metals and glass, 19 percent; and yard waste, 12 percent. Solid waste collection and disposal place great strain on local economies, particularly when revenue streams constrict, government priorities change due to political shifts, and support from other governmental entities are diverted elsewhere. There is an informal dimension to the solid waste economy, however, that rarely finds its way to the balance sheet. In countries with thousands of low-income and middle-income people, solid waste often is a major source of income—collected, sorted, and



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Late-nineteenth-century advertisement for a Thomas Crapper & Company water closet, with a patented siphon water-waste preventer.

resold by those who turn the discards of the more affluent into a livelihood.

Waste Management: Public and Private

The way solid waste is managed—or mismanaged—is crucial to the success of collection and disposal practices. Beginning in the late nineteenth century, a major concern of city government in the United States was to determine responsibility for delivering needed services such as refuse collection and disposal. For many years, the question was whether public or private service was better. Between the 1890s and the 1960s, publicly managed systems dominated. In the early twenty-first century, the United States has a mixed system of service providers in the solid waste field, with the trend toward increased privatization. Whatever the system, local governments in North America in general retain primary responsibility for managing or overseeing solid waste management. In Canada the approach favors more decentralization than in the United States.

The recent interest in “integrated waste management” systems, that is, systems that will use some or all disposal options, requires cooperation between public and private parties. In the United States, the

Environmental Protection Agency’s promotion of integrated waste management also suggests a significant role for the federal government in setting a national agenda for solid waste, as well as having an expanded regulatory function.

Since the 1960s, the U.S. federal government has played a greater role in addressing the waste problem, underscoring its significance as an environmental issue with national repercussions. The 1965 Solid Waste Disposal Act was the first major federal law to recognize solid waste as a national problem. Since that time new laws have been added, shifting attention among issues of recycling, resource recovery, conversion of waste to energy, hazardous wastes, and more traditional concerns over municipal solid wastes.

While the United States seeks to implement an integrated solid waste management system, western Europe leads the world in such an endeavor. Governments in all western European countries are required to design their systems around integrated models with waste prevention at the core. While the public sector has been at the center of these programs for years, private companies increasingly carry out waste management services. Even in Eastern Europe where state-run programs have been the norm, private companies



are making headway. In many countries, legislation to improve solid waste management at the highest levels is insufficient, and private sector initiatives increasingly compete with governments to carry out of waste services.

Especially since the 1960s and 1970s, privatization of solid waste collection and disposal proved to be an alternative to municipal service—a form of outsourcing often seen as a way for cities to get out from under an onerous service obligation. While private collection and disposal always has been part of the service mix throughout the world, a relatively new dimension is the development of solid waste conglomerates often with international reach. In the United States, for example, consolidation accounted for much of the industry's growth in the 1990s with some companies becoming international businesses.

Collection Practices

Collection of solid wastes has been made difficult throughout the world by the growing volumes and kinds of materials discarded, the larger populations to be served, and the greater distances that sanitation workers are required to cover. There is no “best” method of collection. Before 1900, some American cities chose to collect unseparated discards, and others experimented with source separation. Historically, collections were most frequent in the business districts, less frequent in outlying areas or poorer neighborhoods. As more affluent suburbs grew, cities diverted collection teams from inner-city routes to upper- and middle-class neighborhoods.

After World War II, technical advances helped to ease the problems of collection, especially in the United States and Europe, with the introduction of compaction vehicles and transfer stations (used as central drop-off points for collected refuse). But over the years collection remained heavily dependent on hand labor in many parts of the world. No matter the method, collection is difficult because it is costly and does not serve every citizen equally well, especially the poor. Surveys estimate that from 70

to 90 percent of the cost of solid waste service in the United States goes for collection. Equally high or higher collection ratios can be found in other areas such as Africa.

Collection of wastes is an imposing task throughout the world. In some cities, such as Kathmandu, Nepal, there is no formal waste collection service of any kind. In Mexico City, the national government controls collection and disposal arrangements, and does not allow private contractors to operate. Throughout Latin America collection coverage is reasonably good in the large cities such as Buenos Aires, São Paulo, Rio de Janeiro, Caracas, Santiago, and Havana, although it is uncertain whether squatter settlements receive adequate collection service. Privatizing collection operations, which became more popular in the United States in the 1960s, also has caught on in several large cities in Latin America.

Conditions in Europe vary greatly. In western Europe and Scandinavia collection is frequent and highly mechanized; in eastern Europe, where much of the housing is multifamily apartments, quality of service is uneven. Like Europe, industrialized countries of Asia—Australia, New Zealand, Hong Kong, Japan, and Singapore—have waste collection in their cities that is mechanized and capital intensive. In developing countries much of collection is done by hand labor, with the exception of some large cities that maintain motorized collection fleets. In the poorest countries, collection rates may not exceed 50 percent and may not extend to the poor.

Privatization also is gaining a foothold in some countries. Most interestingly in east Asia and the Pacific, women often manage garbage in the household, pay for collection service, separate recyclables, and sell items to private waste collectors. In south and west Asia, for example, labor unrest and civil disturbances have affected municipal service periodically. In much of Africa the municipality, through a combination of motorized vehicles, animal-drawn carts, and human-drawn wheelbarrows and pushcarts, carries out collection. As in many developing regions, transfer stations are uncommon and collection reliability is often low.

Disposal Options: Landfills and Incinerators

Modern sanitary landfills evolved from those originating in Great Britain in the 1920s, and American attempts in the 1930s in New York City, San Francisco, and especially Fresno, California. The sanitary landfill is composed of systematically dug trenches, where layers of solid waste alternate with layers of dirt. The trenches are then covered with a layer of dirt so that odors could not escape and rodents and other vermin could not enter. Newer landfills utilize plastic liners to retard leaching and monitoring devices to detect methane emissions and various other pollutants.

Through the 1950s and 1960s engineers and waste managers believed that the sanitary landfill was the most economical and safest form of disposal. By the 1970s, experts began to doubt that landfills could serve the future needs of cities, not only because of the paucity of land but also because of citizen resistance and increasingly rigid environmental standards. The NIMBY syndrome—Not in My Back Yard—spread across the country as some neighborhoods refused to act as dumping grounds for the whole community. Many times sanitary landfills did not live up to their name, becoming a haven for insects and rodents, threatening groundwater, producing methane gas linked to ozone depletion, and containing various hazardous materials. In some cases, the placing of dumps in minority neighborhoods was and is challenged as a form of environmental racism. In the 1980s, the siting of hazardous or potentially hazardous waste facilities in the neighborhoods of people of color helped to inspire a form of “ecopopulism” in American cities under the rubric of the “environmental justice movement.” At first, such efforts at confronting social and environmental injustice with strong racial and class overtones remained in an American context, but in time similar concerns over intentional placements of unwanted facilities grew beyond “NIMBYism” elsewhere to articulate similar concerns.

By recent estimates, 55 to 70 percent of the waste generated in North America ends up in landfills. But

the total number of sites in the United States particularly declined through the late 1980s and 1990s substantially, from approximately 8,000 in 1988 to 2,300 in 1999. The major reason for the decline, in addition to siting problems, is Subtitle D of the Resource Conservation and Recovery Act (1976), which set and enforced rigorous national standards for municipal solid waste (MSW) landfills in the 1990s. In essence, newer, larger, but fewer landfills could meet the new standards, while smaller and older ones simply stopped operating.

The lack of sites in the United States, especially in the East and parts of the Midwest, forced several states to export their garbage. New York is the top exporter with 5.0 million tonnes per year, followed by New Jersey and Missouri (1.6 million tonnes) and Maryland (1.4 million tonnes). The major importer of waste is Pennsylvania with 9.0 million tons per year followed at some distance by Virginia (3.5 million tonnes) and Michigan (2.8 million tonnes).

There is a clear split between northern and southern/eastern Europe in the use of landfills. In some northern European countries landfill practices parallel current U.S. experience with approximately half of the waste finding its way to landfills. In Greece, Spain, Hungary, and Poland, virtually all collected waste goes into the ground. Many of the landfills in Europe are of the small, uncontrolled municipal type, but efforts are being made to shift toward larger regional types. Unlike the U.S., NIMBYism is unlikely to influence the siting of landfills.

Landfilling has been the cheapest and most typical form of disposal in east Asia and the Pacific. But in countries such as Australia, Japan, and Singapore, costs have risen sharply in recent years. In developing countries, open dumping rather than sanitary landfilling has dominated disposal practices. The same is true in south and west Asia and in much of Africa. Egypt and South Africa tried to upgrade landfills, but this objective has yet to achieve success. Waste pickers—sometimes operating under municipal authority or on their own—work the open dumps to find materials to utilize or sell. Ocean dumping is still common in these regions as well,

The world is too much with us; late and soon, / getting and spending, we lay waste our powers: / Little we see in Nature that is ours. • William Wordsworth (1770–1850)

although the practice is banned or restricted in most places.

The use of landfills—many of them private—in Latin America and the Caribbean is on the rise, especially in large cities. These sites, however, more closely resemble controlled dumps than sanitary landfills. In Mexico, for example, there are nearly one hundred controlled disposal sites, but only about 10 percent (mostly in the north) can be considered sanitary landfills. Waste pickers also are common in Latin America, and while attempts have been made to prevent them from entering the dumps, such efforts normally fail.

Of the available alternatives, incineration has had the strongest following. The first systematic incineration of refuse at the municipal level was tested in Nottingham, England, in 1874. Two years later in Manchester, Alfred Fryer built an improved “destructor,” and subsequently the British led in the technology’s development for several decades. The British were the first to attempt to convert the heat from burning waste into steam to produce electricity. The first American “cremators” were built in 1885.

Two types of combustion facilities—both with roots in the late nineteenth and early twentieth centuries—were developed in the late nineteenth and early twentieth century. The first is a mass burn unit used to reduce the total volume of waste; the second is the waste-to-energy facility, pioneered by the British, meant to produce steam to generate electricity or to be sold directly to customers as a heating source. Waste-to-energy became popular in the United States in the 1970s in the wake of the energy crisis, but it did not gain widespread support, nor did incineration in general.

Despite the fact that incineration drastically reduces the volume of waste, the cost of the technology and chronic problems with air pollution made it a weak competitor in contests with the sanitary landfill. In the 1990s, however, incineration rebounded, especially built on the hope of an improved competitive edge because of rising landfill fees and the promise of cleaner energy production. In 1996, 110

combustors with energy recovery were in operation in the United States with a capacity to burn up to approximately 90,000 tonnes of MSW per day; the number is much lower in Canada. Overall, waste-to-energy incineration handles approximately 10–15 percent of the solid waste stream in North America.

Incineration also has a checkered history internationally. In Africa any kind of burning and waste-to-energy—except medical waste incineration—are little used because of high costs. The same is true in Latin America. In Asia, only cities in the most industrialized countries use modern incinerator technology. Japan leads the way; Tokyo has thirteen incinerators. The increasing lack of landfill space and the dense population has put Japan on the forefront of incineration use and development. In developing countries, many problems have arisen with imported incinerators. Some units do not operate at high enough temperatures to destroy pathogens and the high moisture content in the waste, and they contribute substantial air pollution.

Europe’s commitment to incineration since the early successes in England has been mixed. Northern European countries, particularly Sweden, rely heavily on mass-burn incineration in association with energy generation. In western Europe anywhere from 35 to 80 percent of residential waste is incinerated. The lack of landfill space and energy needs have been powerful forces in promoting the burning of waste, but not without controversy. Emissions of acid gases, heavy metals, dioxin, and mercury have caused serious concern, and have led the European Union to enforce stringent emissions standards for incinerators. Older incinerators that do not generate energy are being phased out.

European countries have been active in producing by-products from incineration residue, using fly ash, for example, in a variety of road products. Europeans also have led the way in developing refuse-derived fuels. The experiences in eastern Europe have been less successful, especially because of the older incineration facilities in use and the inability to upgrade or replace them.

Recycling and Recovery

Only in the last several years has recycling emerged as an alternative disposal strategy to landfilling and incineration, particularly in the United States. Once regarded as a grassroots method of source reduction and a protest against over consumption in a “throw-away society,” recycling arose in the 1980s as a disposal method in its own right. In 1988 about 1,000 communities in the United States had curbside collection service; in 2000 the number exceeded 7,000. The province of Ontario initiated its first curbside program in 1983, and by 1987 at least forty-one communities had such programs in Canada. The EPA estimated that recycling and composting diverted 52 million tonnes of material away from landfills and incinerators in the United States in 1996 (up from 31 million tonnes in 1990), with the most typical recyclables being aluminum cans, batteries, paper and paperboard, and yard trimmings.

A major goal of many communities and the United States in general is to increase the recycling rate, which stood at 10 percent in the late 1980s. The EPA's 1988 draft report on solid waste called for a national recycling goal of 25 percent by 1992. In the late 1990s, the EPA raised the goal to at least 35 percent of MSW by 2005, and called for reducing the generation of solid waste to about 2 kilograms per capita per day. The actual rate of recycling in the late 1990s was about 20 to 25 percent in North America.

The U.S. experience with recycling, while vastly changed from years past, falls short of recycling and recovery efforts in other parts of the industrialized world. Germany and Denmark, in particular, have aggressive recycling policies. Denmark, for example, recycles about 65 percent of its waste. One of the most unique aspects of recovery of materials in western Europe is the pervasive idea of “producer responsibility” for proper disposal of packaging and other products. Recycling and recovery in southern and eastern Europe and in other parts of the world is more uneven. Throughout Latin America and the Caribbean, materials recovery is extensive with recycling

programs in all large cities and most moderate-sized communities. In smaller towns and rural areas, where much of the waste is organic, composting is the only form of recovery in use. Centralized composting has not been successful in Latin America as a rule, however. By contrast, backyard composting is more widespread in Australia, Japan, and New Zealand. In Asia a large portion of household organic waste is fed to animals. The large composting plants that were so prevalent throughout developing countries in Asia—including those pioneered in India—are out of use and not working at full capacity.

In east Asia and the Pacific, formal and informal source separation and recycling programs are practiced. The highest degree of waste reduction takes place in the thriving urban areas of Australia, New Zealand, Japan, Korea, and Hong Kong. There also are waste recovery programs and recycling efforts sponsored by cities and national ministries in the People's Republic of China and Vietnam.

Informal waste picking is widespread throughout the world, particularly in developing countries. In several locations, such as in south and west Asia and Africa, there are informal networks of pickers, buyers, traders, and recyclers in place of formal public systems or private companies. Materials recovery takes on a different form in the developing world as opposed to highly industrialized regions. For the former, materials recovery becomes a necessity in areas of poorly paid or unemployed people and in areas where resources are scarce. In industrialized areas, materials recovery is an attempt to lessen the wastefulness of growing economies and reduce environmental costs.

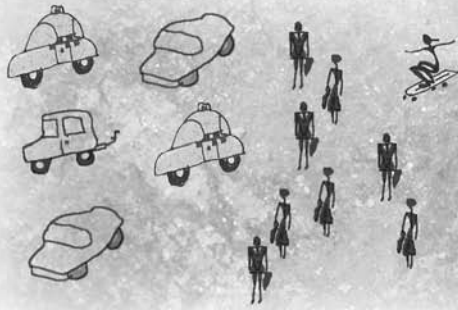
The waste problem is a part of life—ancient and modern. Strides have been made throughout the world to confront the complex problems of waste generation, collection, disposal, and materials recovery. Finding a way to manage solid waste in order to preserve resources and minimize pollution is a constant challenge.

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See also Population and the Environment

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Water

Water is essential for life. In addition to consumption, water is used for travel, power generation, hygiene, recreation, agriculture, industry, ritual, and more. While water covers about three-quarters of the Earth's surface, less than 2 percent of it is fit to drink. Access to water continues to play a crucial role in the location and movement of peoples and communities.

Water covers nearly 75 percent of the Earth's surface and is an integral component of every living being. Fresh water is essential for human survival; while a person can live for weeks without food, one can only survive a few days without water. Throughout history, the location of available water has played an important role in human development and influenced settlement patterns and farming, social customs, religion, transportation, and power generation.

Settlement

The availability of fresh water for human and animal consumption and crop irrigation has influenced human settlement for many millennia. Even though water covers much of the Earth's surface, less than 2 percent of it is potable. While many different peoples have learned to adapt to harsh or unforgiving environments, water from natural springs, rivers, or rainfall is a necessity for survival. During the early history of humans, the availability of water played an important factor in their survival strategy.

During the Neolithic Age, hunters and gatherers stopped migrating, built permanent dwellings, and became farmers and herdsman. When they chose a

site to build their towns, it was usually near an available water source, such as a river or lake. One of the oldest towns, Catalhuyuk in Turkey, serves as a model for these early Neolithic sites. Catalhuyuk, which was established around 7500 BCE, was located very close to several standing bodies of water, and archaeologists believe water was available near the town all year round. Its farmlands appear to be several kilometers farther away from the town than the water supply, underscoring the importance of easy access to water. This model can also be seen at other Neolithic sites, like Choirokoitia in Cyprus, which dates to 7000 BCE.

As the population steadily increased during the period from the Neolithic Age to the Iron Age, settlements began appearing in areas where water was not readily available in large quantities or was not available throughout the year. To survive in these regions, humans had to find ways to adapt their survival strategy to provide enough water to sustain life. One of the most widely practiced solutions was to collect water during times when it was plentiful for use at a later time when it was scarce. Different cultures found various ways to accomplish this. In Greece, Italy, and Mesopotamia, the farmers relied on winter rains to provide enough rainfall to allow summer "drought farming." The winter rains provided enough water that farmers could successfully grow crops with minor modifications to their schedule. They would plant their crops in the early spring while the soil was still well watered from the winter rains and harvest them in the early summer before all the moisture was lost from the soil due to warm and arid summer weather patterns. Inhabitants in these regions relied on natural springs and rainwater collected in large cisterns



People socialize while drawing water from the community well in a village in India. Photo by Klaus Klostermaier.

to ensure an adequate drinking-water supply for the summer and fall months.

In Arabia, the Nabataeans used a system of rock-cut channels and pipes to collect rainwater for storage in underground cisterns, which were lined with waterproof cement. In Egypt, the Nile provided water for irrigating fields, and the annual flooding of the river deposited new soil on the fields and prevented soil depletion. In the Hellenistic Age, an elaborate system of irrigation ditches was implemented to expand the amount of cultivable land. This irrigation system continued to develop and expand through the Roman, Byzantine, and Islamic periods.

In ancient Persia farmers developed the underground irrigation systems known as *qanats* as early as the first millennium BCE as a method for delivering water to their crops. A *qanat* was an underground enclosed canal that collected groundwater in the mountains and carried it to fields in low-lying areas using gravity. Along the length of the *qanat*, shafts would be placed at regular intervals to allow access to the water channel for cleaning and repair. *Qanats* often involved extensive engineering, were up to 40 kilometers in length, and were buried up to 100 meters below the surface. This system of irrigation was adopted by the Arabs and Byzantines. There are more than forty thousand known *qanats* in Iran with many still in use today.

Collecting and storing water for long periods often created a new problem when the water became impure or collected sediment. Many ancient civilizations developed techniques for purifying stored water in an attempt to produce better drinking water. Ancient Sanskrit writings dating to 2000 BCE describe different methods for purifying water by boiling or using sand or charcoal for filtering out impurities. Egyptian tomb paintings depict a device for filtering water that allowed sediment and other impurities to settle to the bottom of a collection device, allowing the clear water to be collected from the top.

While farmers needed to live near water sources for crop irrigation, as cities grew larger they also needed water for the sustenance of their citizens and for maintaining sanitary conditions in the city. Cities depended upon engineers to design systems for delivering water from its source across many miles to its final destinations in the city. Both Rome and Constantinople developed impressive aqueduct systems for bringing water to numerous baths, fountains, and private houses. During the third century CE, Rome had nine functioning aqueducts, which provided over 3 million gallons of water each day to the city. The longest of these aqueducts was more than 95 kilometers in length. The beginning of the aqueducts was simply a channel cut into the earth with a slight downward gradient that used gravity to move the water toward Rome. As the aqueduct left

the hills and approached the city the water channel was carried on raised arches, often more than thirty meters above ground. These channels were 1 meter wide and 1.8 meters high so that workers could enter the channel for cleaning. Three of the aqueducts are still functioning today.

Social Aspects

Water has also played an important role in social customs. Bathing was an important ritual in ancient Greece and Rome. Public baths became common in Greece starting in the fifth century BCE. Adopted by the Romans, bathing became an important social aspect of everyday Roman life by the first century CE, and an important center for social interaction between citizens. Every town would have at least one public bathing structure, and houses of wealthier citizens would have private baths. These bathing complexes would have rooms with differing water temperatures: cold water, tepid, and hot water baths. Larger complexes even had large swimming pools. As the Roman Empire expanded in the second and third centuries CE, these complexes became more and more elaborate with vaulted ceilings, glass windows, exotic artwork, and intricate plumbing systems. The baths built by the Roman emperor Caracalla (Marcus Aurelius Antoninus) in 217 CE could accommodate over 1,600 bathers at the same time. These

bathing complexes were an important tool for the spread of Roman culture and ideas throughout the empire. Bathing is still an important aspect of some modern cultures like Japan and Finland.

Religion

In ancient Greece and Rome, water was an important element in religious rites. Natural springs were considered powerful locations and often became cult worship sites. Along with fire, water was used as a purification element in birth, marriage, death, and sacrificial ceremonies. The idea of water as a tool to purify or remove evil is reinforced by the numerous flood stories from around the globe that recount how god(s) cleansed the Earth of evildoers and made a fresh start with a chosen one, such as Noah in the Old Testament, Deucalion in Greek mythology, Utnapishtim in the *Epic of Gilgamesh*, or the East African story of Tumbainot.

In Greek philosophy and cosmology, water was considered to be one of the four basic elements of the universe in addition to fire, air, and earth. The pre-Socratic philosopher Thales of Miletus, writing in the late fifth century BCE, believed the principal element of all things was water, and everything else in the universe was a creation of water.

In Zoroastrianism, cultivation of the soil was praised and any action that promoted cultivation



Paolo Uccello, *Flood and Waters Subsiding* (1447–1448). The fresco, in Santa Maria Novella in Florence, illustrates the Old Testament story of Noah and the ark.



Humans throughout history traveled waterways large and small as they explored and settled the Earth. In this early-twentieth-century photo, a traveler and his guide raft down the Amazon River in South America.

vation was encouraged. This motivated the Sasanian kings who ruled Persia (modern-day Iran) from the third to seventh centuries CE to build dams and extensive irrigation systems.

In early Christianity, water was seen as a symbol of purification and life. In Byzantine church liturgy, the blessing of the water was an important ritual and was believed by the church leaders to commemorate Jesus Christ's baptism by John the Baptist. Water remains an important purifying element in modern religions. In many modern Christian sects, baptism (either by sprinkling or immersion) in water to wash away earthly sin is an initiation rite of the faith. In Islam, believers wash their hands, arms, feet, and head to cleanse themselves before praying. Judaism also uses water to purify believers and to cleanse them after coming into contact with unclean items, such as a dead body.

Transportation and Empires

With so much of the Earth covered by water, boats have been a necessity for exploration and travel.

Travel via water transport, until modern times, has been faster and less expensive than travel overland. The edict issued by the Roman emperor Diocletian in 301 BCE, which was designed to control maximum prices, provides historians with enough information to formulate standard costs of transportation during this period. The document shows transporting goods overland cost between 30 and 50 percent more than sending them by boat. Travel time was also significantly less, provided the weather was favorable.

As commerce increased, merchants and nations tried to find ways to increase the speed and capacity of ships. This led to the development of the carrack and caravel, ship types that could carry larger cargoes and sail faster and required fewer sailors. Another method of shortening the time of sea travel was the creation of canals that linked major bodies of water, eliminating circumnavigation. This led to the building of the Grand Canal (486 BCE), Erie Canal (1825 CE), Suez Canal (1869), Corinthian Canal (1893), Panama Canal (1914), and Rhine-Danube Canal (1992).

Cities or nations whose citizens became skilled at seamanship or building boats were able to capitalize on this and create large empires, commercially or militarily. By the eighth century BCE, the Phoenicians were able to create a trading network that included the entire Mediterranean Sea and as a result spread Phoenician culture to many different regions. The success of the Phoenicians was repeated on a smaller scale by the Venetians in the Mediterranean and the Hanseatic League in the Baltic Sea in the thirteenth and fourteenth centuries CE.

Cultures that relied on overseas transportation for their commercial goods often developed a strong navy to protect their commercial interests. In the fifth century BCE, the city-state of Athens was able to use its strong maritime presence in the Aegean to create the Athenian Empire. In the fifteenth century CE, England was able to use the development of its mercantilist policies to create both a strong merchant marine and a strong navy. England was able to use its naval power to further its political



policies abroad and build up an empire that spanned the globe.

Water Power

Water has also been used to drive machines and create energy. One of the earliest inventions was a waterwheel that used falling or flowing water to drive a shaft that would then turn the mill. Ancient Greeks and Romans were the first to use waterwheels to power mills for grinding grain into flour, and this practice continued through the medieval period.

With the development of a successful steam engine in the early eighteenth century, the use of waterwheels declined. In the United States during the eighteenth and nineteenth centuries, waterwheels were used to supply power to sawmills, grain mills, and textile factories. In 1882 the first power plant that derived its energy from water was constructed in Wisconsin. By the early 1940s hydroelectric power provided nearly 40 percent of U.S. energy consumption. Today, Canada, New Zealand, Norway, Switzerland, and Sweden depend heavily upon hydroelectric power.

Water in the Twenty-First Century

Since the mid-1980s many nations have come to realize that water is not a limitless commodity and that steps have to be taken in order to protect this valuable resource for future generations. In the twenty-first century several key water issues have emerged. First, as the world's population increases, more countries are unable to meet the increased demand for drinking water. Second, industrialization leads to increased pollution, which further decreases the amount of available drinking water. Third, continued urbanization and deforestation have led to increased flooding and soil erosion. Fourth, as countries look to augment their existing water supply, conflicts over water sharing, particularly of international rivers, have increased. Increased public awareness about these important environmental issues has resulted in the formation of international agencies

that are attempting to solve these problems and implement water resource management plans.

While access to clean water is an increasing concern, it is thought that there is currently enough water for everyone. The problem is the inefficient and ineffective management of water resources. As such, every year millions of people die from waterborne diseases because of their lack of essential access to a clean water supply. Some of the possible remedies to water shortages and inequities include recycling and redistribution.

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See also Desertification; Navigation; Oceans and Seas; Rivers; Sailing Ships; Salinization; Transportation—Overview; Waste Management; Water Energy; Water Management

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Water Energy

Mechanical (kinetic) energy of flowing or falling water was traditionally converted to rotary motion by a variety of waterwheels, and, starting in the 1880s, by water turbines that have been used to turn generators. Unlike fossil fuels, this form of electricity generation does not produce air pollution directly, but its other environmental impacts have become a matter of considerable controversy.

It is not known by how many generations or centuries the origins of waterwheels predate the first reference to their existence by Antipater of Thessalonica, who wrote during the first century BCE about their use in grain milling. A millennium later such simple devices were common in parts of Europe: in 1086 the *Domesday Book* listed 5,624 mills in southern and eastern England, one for every 350 people. The usual arrangement was to channel flowing water through a sloping wooden trough onto wooden paddles, often fitted to a sturdy shaft that was directly attached to a millstone above. Vertical waterwheels, first mentioned by Vitruvius in 27 BCE, were much more efficient. All of them turned the millstones by right-angle gears, but they were propelled in three distinct ways.

Wheels and Turbines

Undershot wheels were driven by kinetic energy of moving water. As doubling the speed boosts the capacity eightfold, they were preferably located on swift-flowing streams. The best designs could eventually convert 35–45 percent of water's kinetic energy

into useful rotary motion. Breast wheels were powered by a combination of flowing and falling water and operated with heads between 2 and 5 meters. Overshot wheels were driven primarily by the weight of descending water and hence could be located on streams with placid water flows. With heads over 3 meters their conversion efficiencies were commonly in excess of 60 percent with peaks of up to 85 percent. Wheels, as well as shafts and gears, were almost completely wooden until the beginning of the eighteenth century; hubs and shafts were the first iron parts and the first all-iron wheel was built early in the nineteenth century.

Besides the wheels fixed in streams there were also floating wheels on barges and tidal mills and common uses of waterwheels eventually expanded far beyond grain milling to power machines ranging from wood saws and oil presses to furnace bellows and forge hammers, and to mechanize manufacturing processes ranging from wire pulling to tile glazing. Even as their uses widened, capacities of waterwheels remained limited, averaging less than 4 kilowatts in early eighteenth-century Europe. Post-1750 innovations led to a rapid increase of individual capacities as arrays of waterwheels, sometimes rating in excess of 1 megawatt (one megawatt equals one thousand kilowatts), became the leading prime movers of expanded mass manufacturing in Europe and North America. In 1832, Benoit Fourneyron's invention of the reaction turbine ushered in the era of much more powerful water-driven machines. James B. Francis designed an inward-flow turbine in 1847, Lester A. Pelton patented his jet-driven turbine in 1889, and Viktor Kaplan introduced his axial flow turbines in 1920.



Energy can be generated from hydroelectric dams. Here power lines carry electricity generated from a river.

Hydroelectricity

The first water turbines were used merely to replace waterwheels as the prime movers in many industries, but by the late 1880s the machine began to be coupled with generators to produce electricity. The first American hydroelectric plant was built in 1882 in Wisconsin. More than century later, water turns turbines that supply almost 20 percent of the world's electricity. In dozens of tropical countries, water power is the dominant means of electricity production.

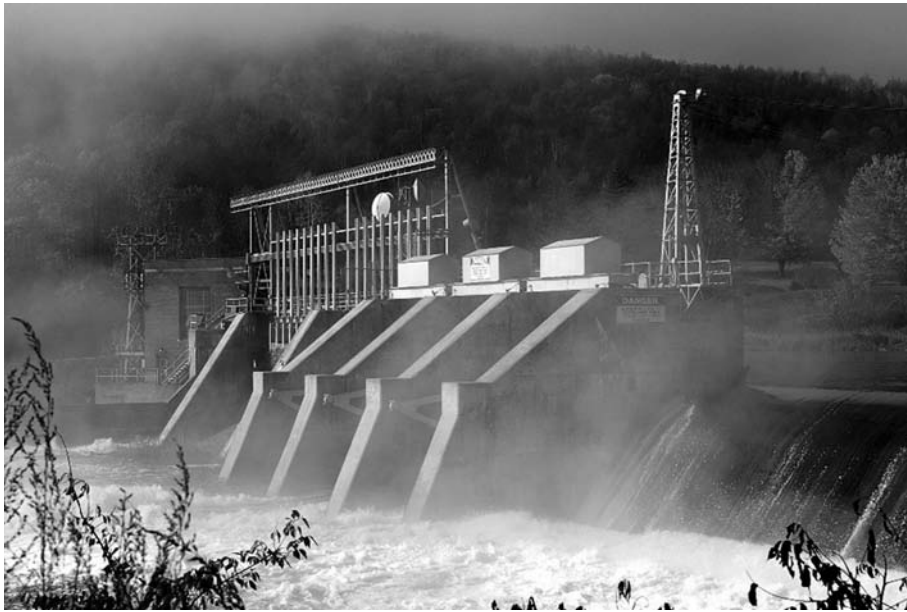
Most of the world's hydro energy remains to be tapped. Worldwide total of economically feasible hydro generation is over 8 petawatt-hours (PWh, that is 10¹⁵—one quadrillion—watt-hours) or roughly three times the currently exploited total. Europe has the highest share of exploited capacity (more than 45 percent), Africa the lowest (below 4 percent). The greatest boom in construction of large dams took place during the 1960s and 1970s, with about five thousand new structures built per decade.

Advantages and Drawbacks

The air pollution advantage of hydropower is the most obvious one: if coal-fired power plants were to generate electricity that is currently produced worldwide

by running water, the global emissions of carbon dioxide and sulfur dioxide would be, respectively, 15 percent and 35 percent higher. Hydrogeneration also has low operating costs, and its spinning reserve (zero load synchronized to the system) in particular is an excellent way to cover peak loads created by sudden increases in demand. Moreover, many reservoirs built primarily for hydrogeneration have multiple uses—serving as sources of irrigation and drinking water, as protection against flooding, and as resources for aquaculture and recreation. But during the closing years of the twentieth century, large dams were widely seen as economically dubious, socially disruptive, and environmentally harmful.

Displacement of a large number of usually poor people has been the most contentious matter. Construction of large dams dislocated at least 40 million people during the twentieth century (some estimates go as high as 80 million), and during the early 1990s, when the work began on three hundred new large dams began every year, the annual total reached 4 million people. China and India, the two countries that have built nearly 60 percent of the world's large dams, had to relocate most people: more than 10 million in China and at least 16 million in India. Large hydro projects also have a multitude of undesirable environmental impacts, and recent studies of these



A hydroelectric dam on the Connecticut River between Vermont and New Hampshire, seen through the mist of the rushing water.

previously ignored changes have helped to weaken the case for hydrogeneration as a clean source of renewable energy and a highly acceptable substitute for fossil fuels.

Perhaps the most surprising finding is that large reservoirs in warm climates are significant sources of greenhouse gases emitted by decaying vegetation. Water storage behind large dams has increased the average age of river runoff and lowered the temperature of downstream flows. Several of the world's largest rivers have reservoir-induced aging of runoff exceeding six months or even one year (Colorado, Rio Grande del Norte, Nile, Volta). Many tropical reservoirs create excellent breeding sites for malaria mosquitoes and for the schistosomiasis-carrying snails, and most dams present insurmountable obstacles to the movement of migratory fish. Multiple dams have caused river channel fragmentation that now affects more than three-quarters of the world's largest streams.

Other environmental impacts caused by large dams now include massive reduction of aquatic biodiversity both upstream and downstream, increased evaporative losses from large reservoirs in arid climates, invasion of tropical reservoirs by aquatic weeds, reduced dissolved oxygen and hydrogen sulfide toxicity in reservoir waters, and excessive silting. The last problem is particularly noticeable in tropical and monsoonal climates. China's Huang (Yellow) River, flowing through the world's most erodible area, and India's

Himalayan rivers carry enormous silt loads. Silt deposition in reservoirs has effects far downstream as it cuts the global sediment flow in rivers by more than 25 percent, and reduces the amount of material, organic matter, and nutrients available for alluvial plains and coastal wetlands downstream, and hence increases coastal erosion.

The ultimate life span of large dams remains unknown. Many have already served well past their designed economic life of fifty years but silting and structural degradation will shorten the useful life of many others. As a significant share of the Western public sentiment has turned against new hydro projects, some governments took action. Sweden has banned further hydrostations on most of its rivers, and Norway has postponed all construction plans. Since 1998, the decommissioning rate for large U.S. dams has overtaken the construction rate. Major hydro projects of the twenty-first century will thus be built only in Asia, Latin America, and Africa.

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See also Water; Water Management

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In the world there is nothing more submissive and weak than water. Yet for attacking that which is hard and strong nothing can surpass it. • **Laozi (sixth century BCE)**

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Water Management

Water has many essential uses, including in agriculture, industry, recreation, and domestic consumption, most of which require fresh water (as opposed to saltwater). Only 3 percent of Earth's water supply is fresh, and most of that is frozen. While fresh water is a renewable resource, supply is limited while demand is increasing. This requires careful management of existing water resources.

Land-based life on Earth revolves around sweet (nonsalty) water. Domesticated plants require a regular and sufficient supply of sweet water. People must manage this water resource; they also must manage the supply of sweet water for humans, for domesticated animals, and for manufacturing.

Most of the surface of our planet is water, but most of it is too salty for use by organisms living on land. But the hydrological cycle (the sequence of conditions by which water passes from vapor in the atmosphere through precipitation onto land or water surfaces and back into the atmosphere) provides a continuous supply of sweet water in the form of rain and snow. After precipitation hits the ground it either runs off on the surface, as rivers and other streams, or soaks into the soil. From the point of view of a farmer cultivating fields in a fixed place, the water environment is sweet, with water running on the surface, water in the top layer of the soil (soil water), and water deeper underground (groundwater).

As is true for most life processes, an ideal amount of water exists for the farmer. The environmental supply of water is variable, however, fluctuating from place to place and from time to time on daily, monthly, and

yearly schedules. Combining the need for an ideal amount of water with the unending fluctuation yields three kinds of conditions: about right, too much, and too little. "About right" rarely occurs.

Water has several physical characteristics that are relevant for managing a farm. First, water is liquid and flows easily. Thus all water responds to gravity and naturally flows downhill. It always takes the shortest possible route. Water is easy to move if a downhill path can be found. But because water is a liquid, a sealed container must be used if a person wants to lift it. Second, water is heavy. Lifting it requires not only a sealed container but also considerable energy. Third, water is an excellent solvent. One of the major functions of water in the life of the green plant is to dissolve nutrients (from the soil) and transport them into the plant, but water can also dissolve poisons (including salts). Fourth, water can carry many solid particles in suspension. Erosion of the landscape by running water transports such solid particles downstream.

The farmer wants sweet water for plants in the right amounts, at the right times, moving at the right speeds, and containing the right components (dissolved, suspended). Irrigation is the technology that increases the water supply to plants, and drainage is the technology that reduces the water supply to plants.

The major energy sources for moving water are gravity, human muscle, animal muscle, wind, and heat engines (mechanisms, such as internal combustion engines, that convert heat energy into mechanical or electrical energy). For irrigation we supply water at a high point, and for drainage we remove it at a low point.



The dam at Simatai in March 2004. This Great Wall tourist location to the far north of Beijing is an example of the Chinese commitment to dam building.

Irrigation

The elements of a canal irrigation system are an intake, where ditches tap into a water source; a main canal (sometimes many kilometers long); and a series of branch canals that deliver water to the farmer's fields. Movable gates may control water flow into the branch canals, or the system may be designed so that water flows in every channel simultaneously.

The ditches move the water from the source to the fields. The technology for digging these ditches is simple and has been invented virtually everywhere. People use digging sticks, shovels made of wood, and hoes made of stone to loosen the dirt. Such tools are old and widespread. People use baskets to move the loosened dirt. Because water responds so quickly to gravity, people can easily test whether a ditch has the right slope and change the slope if they have made errors.

Most irrigation systems are what we call “run of the river,” meaning that the water available to them is what is in the river (the source) at the time. The construction problems are obvious (water must flow downhill, dirt must be moved), and the solutions have been invented many times. A significant problem with irrigation systems is variation in environmental moisture. For example, a drought can reduce a river's water supply to a trickle, posing a threat to crops.

One solution to such variation is to store water in a reservoir; however, water storage was quite rare in early world history. The city of Jawa in the Jordanian desert had a storage dam by about 4000 BCE. Tank irrigation systems that stored water behind a small dam were widespread in southern and southeastern Asia by the first millennium BCE. Roman engineers built many small storage dams of masonry, but these dams may have been meant for domestic use rather than for irrigation. An early dam in the Americas was the Purron Dam in Mexico, dated to about 800 BCE. That dam was made of earth and at its maximum was 19 meters tall. The dam was in operation for approximately one thousand years and could store more than 3 million cubic meters of water. Purron was one of only two storage dams known to have existed in the highland area of Mexico. Since the late nineteenth century people have built many massive storage dams in most parts of the world. Machinery and modern materials—and a plentiful supply of money—have been central to these efforts.

Early irrigation systems built with simple tools were probably widely distributed. Their existence is difficult to document because all subsequent irrigation systems in the same place used the same routes for the ditches. Thus researchers have difficulty finding and dating the earliest occurrence. Scholars, however, think they have evidence of irrigation early in

all of the world's civilizations. Irrigation may have existed during Neolithic times as well. The tools to build such systems were already available, as was the social organization. Only so many effective designs of an irrigation system exist, and they have existed around the world during all time periods.

Drainage

Drainage systems are the reverse of irrigation systems. Irrigation systems move large amounts of water to the top of the fields, and then break it down into smaller and smaller packages for distribution to fields. Drainage systems collect small amounts of water at many places high up in the system, combine these small amounts into larger and larger channels, and collect the total at the bottom of the field system. The problem then is where to put the drainage water; if it accumulates it can flood the lower fields. The drainage water so collected is eventually put into a large body of water (a river, the ocean), and often people can use gravity to put it there. Gravity works well as an energy source, and ditches again are used to channel the water. Another technology for draining water is tile pipes. The pipes, with holes in them, are installed in ditches in the fields and then covered up. The lower end of the pipes must drain into something, usually a riverbed. Tile pipes are effective and virtually invisible to all but the most discerning eye.

Another way to drain water is to dig dirt out of a swamp and pile it up so that the top is above the water level, producing what are often called "raised fields." These fields can vary in size from a few square meters at the edge of a swamp to thousands of hectares. Among the earliest water management systems using raised fields were in highland New Guinea, dated to about 5000 BCE.

Lifting Water

Because of water's weight and liquid nature, people had difficulty lifting water for many millennia. People used human muscle to lift small amounts of water in pots to water individual plants in the

Valley of Oaxaca, Mexico, about 2000 BCE. In Egypt they could lift larger amounts with the *shadoof* (a beam on top of a pole with a counterweight at one end and a container for the water on the other end). Human muscle powered the *shadoof*. Wells (vertical shafts from the surface down to the water table) have been dug for a long time, but extracting large amounts of water has been difficult. People have used large domesticated animals to power the raising of larger amounts of water, but the output has not been substantial.

In the dry mountain belt from Turkey to western China, horizontal wells (called *qanats* or *foggara*) were widespread. A shaft was dug from the point of use (often an oasis) into a mountain, gently sloping upward, until the shaft met with water-bearing earth. Then a vertical shaft was dug down to the horizontal shaft to remove dirt and to gain access for repairs. Horizontal wells could exceed 60 kilometers in length. They could provide water for centuries if properly maintained.

The first major innovation that increased people's ability to lift water was the windmill, which became prominent in northwestern Europe during the thirteenth century. The Dutch reclaimed low land from the sea by building protective dikes, and they then drained the water out of the low land behind the dikes. They ganged together large windmills to lift the water out of the low land and dump it into the sea or a river outside the dikes. The height to which water could be raised was limited, however, and the windmills could operate only when the wind was the right speed.

With the advent of the heat engine during the Industrial Revolution the limits on lifting water were eliminated. One of the first tasks given to steam engines was to drive pumps that drained water from flooded coal mines. Later uses included pumping drainage water out of a basin and lifting water for irrigation. Water could be lifted from a surface source (such as a river or lake) or from a deep well. Today a great deal of irrigation water is acquired from deep underground; this could not be done without the heat engine to drive a pump.

With the introduction of the internal combustion engine, small pump and driver (an engine that powers the pump) sets became feasible, even to the point that farmers could own such sets and move them around the farm to where they were needed. Although such sets save labor, they are expensive in terms of energy.

A modern innovation in irrigation technology is the pressurized system. Two major forms are used: sprinkler systems and drip systems. In sprinkler systems a pump and driver pressurize water, which is then moved through a series of pipes that is above the level of the plants that are to be irrigated. These pipes have multiple nozzles, and the water distribution mimics light rain. There are two major advantages of this system: (1) water use is much more efficient (more than 90 percent of the water reaches the crop root zone; by contrast, ditches have efficiency as low as 50 percent), and (2) no need exists to sculpt the surface of the soil, thus saving labor and energy. A small computer can operate a number of these sprinkler systems, saving even more labor. These systems also can deliver chemicals (fertilizers, pesticides) in the water. The major disadvantage is that the technology is energy intensive. Sprinkler systems are used throughout much of the world; people flying at 10,000 meters in an airplane can see the green circles made by a rotary sprinkler system.

The other form of pressurized system is drip irrigation. Developed mainly in Israel (where the need to conserve water is great), drip irrigation uses long hoses with holes in them that are buried in the root zone. Water is forced through the hoses and exits the hoses through the holes. Fertilizer and pesticides can be added to the water, thus delivering them directly to the root zone. These systems are even more efficient than sprinkler systems, approaching zero-percent water loss, and they save on the labor to apply fertilizer and pesticide. A major disadvantage is the cost in energy to run the system. Another disadvantage is that the holes in the pipes can clog, which requires that the hoses be exposed; this means excavating them, with possible damage to the crops.

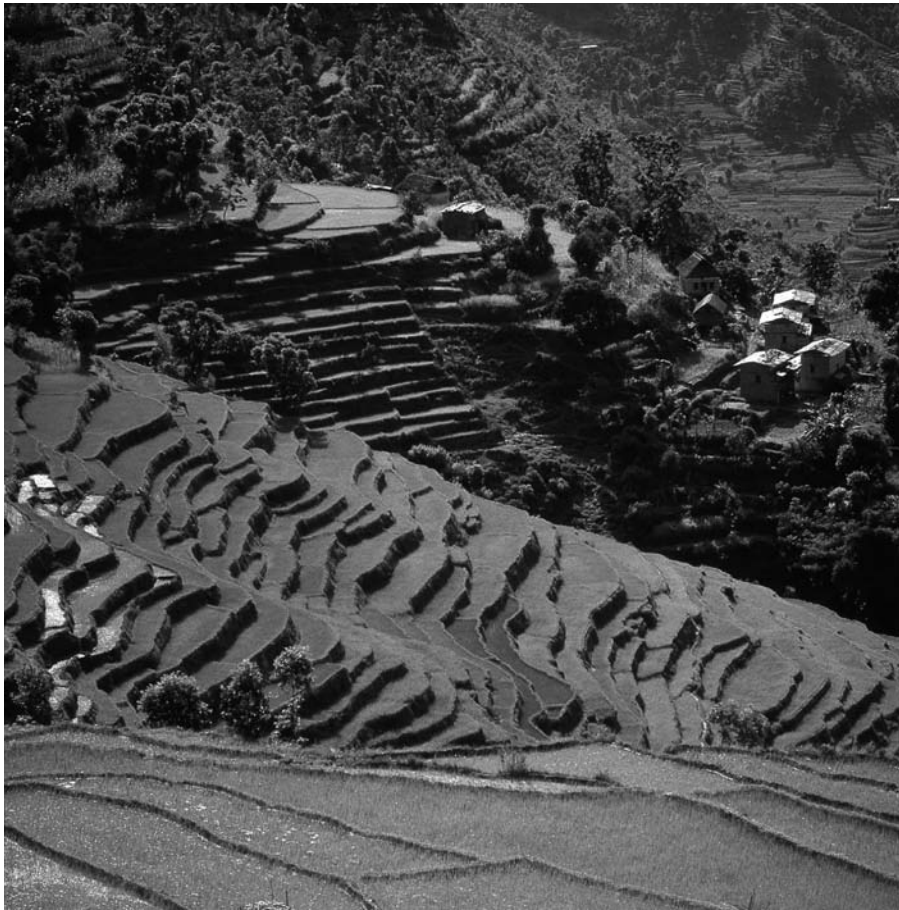
Water Management in History

People have used irrigation systems and drainage systems to manage water for thousands of years and have built and operated such systems without writing and without scientific laboratories. The relationship between water stress (too much, too little) and the health of a green plant is obvious to most observers. People can use simple tools, easily made, to loosen and move dirt to dig ditches. A modern scientific understanding of water, green plants, soil, solutions, the hydrological cycle, and photosynthesis began during the nineteenth century and is still generating knowledge. People needed instruments (microscope, thermometer, balance) and the disciplines of physics, chemistry, anatomy, and physiology to achieve the scientific knowledge that we now have.

The impact of irrigation and drainage on world history has been great. Irrigation and drainage permit people to grow crops where otherwise it would be difficult or impossible. The growing of crops in turn permits a larger, denser population. These technologies have been important in the birth of cities and have played a role in economic surplus, full-time division of labor, metal tools, astronomy, and eventually other sciences. But people also built and operated water management systems for millennia in areas that did not necessarily establish cities and acquire writing (such as New Guinea in the Malay Archipelago and the Hohokam people in Arizona).

Irrigation and drainage change the water balance of the landscape, and along with agriculture they change the plants and animals there. In order to safely grow domesticated plants and animals, people often have wanted to eliminate native plants and especially animals that are dangerous. Entire landscapes have been changed in ways that we could call domestication. At the same time, however, we have provided habitats for small, dangerous life forms that generate and carry diseases, such as malaria. The blessings are mixed.

The simple tools and knowledge needed to build and operate irrigation systems and drainage systems exist everywhere, and traditionally there was little variation in the forms of such systems. With the



Multiple hand-built terraces and rice paddies in the Nepal Middle Mountains east of Kathmandu are a remarkable feat of engineering; the irrigation system demonstrates how indigenous peoples prove to be outstanding soil conservationists. Photo by Jack D. Ives.

Industrial Revolution, however, European colonial powers built large storage dams during the nineteenth and twentieth centuries. Storage dams were not new, but the scale of them was. The practice of lifting water with heat engines diffused widely. Today people everywhere use heat engines linked to pumps, replacing traditional systems. Significantly, the technology is also manufactured just about everywhere.

The Future

The future of water management is unclear. World population is growing, and such growth will increase the demands for food and space for buildings. A substantial portion of the world's food is now grown with irrigation, and this portion will only increase in the near future. An easy way to gain space to build is to drain wetlands. With industrial technology and (cheap) energy, we have the technical capacity to build and operate large water management systems.

But the best places for storage dams have already been taken, and finding new sources of water will be

increasingly difficult. The draining of wetlands has significant environmental consequences. Industrial populations are voracious users of water (for toilets, manufacturing, mining, irrigation, recreation, etc.), and thus pressure to limit the amount of water that farmers can use is growing. Multiple uses of sweet water (for navigation, recreation, biological diversity) grow in number and in intensity. No clear way exists to solve the water problems that occur in nearly every nation. One technical solution is to increase the efficiency of our water use, and science and technology will be crucial in that solution. The problems are not just technical ones—the beliefs and expectations of the consumers of water are also relevant and far less understood than are the properties of dirt, plants, and water.

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See also Agricultural Societies; Desertification; Oceans and Seas; Rivers; Water Energy

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Western civilization is a historical concept with a recent origin and uncertain future. The term became a secular equivalent in the United States to “Latin Christendom,” but it never took firm hold in Europe, where national differences loomed too large. As globalization advances, the separateness of local civilizations blurs; historians, reflecting their times, have begun to emphasize transcivilizational connections while questioning the coherence of Western or any other regional civilization.

The word *civilization* entered English from the French in the late eighteenth century, and initially meant polite behavior, just as it did in French. It referred to manners that permitted a person to find his or her proper place in polite society; that meant using words and gestures to defer to superiors, snub inferiors, and climb as high as one could by peaceable means. Bearing, conversation, and clothing all mattered; so did wealth, and familiarity with art, literature, and music also helped to improve a person’s claim to be civilized. It differed from older courtly ideals inasmuch as no monarch set the tone or conferred formal rank. Civilization instead was an urban upper-class phenomenon whose exact definition evolved in accordance with prevailing opinions among those who participated in polite society.

To begin with, such behavior was conceived as potentially universal. To be sure, civilization was most perfectly expressed in Parisian drawing rooms, theaters, and other public places, with London a close rival. But privileged urban circles in Germany, Russia, and other European countries did their best to imitate French manners, often going so far as to read

and speak French and import the latest fashions from Paris. This sort of “civilization,” however contagious it proved to be, was limited to narrow elites, even within France itself. Even before the eighteenth century ended, a reaction set in among Germans, some of whom preferred to believe that their language and culture embodied a unique spirit that was incompatible with French “civilized” ways of thinking and acting.



Camille Léopold Cabaillet-Lasalle, *Le Salon de 1874*. Oil on canvas. Parisian drawing rooms, theaters, and salons embodied the original late-eighteenth-century meaning of the word “civilization”: polite behavior.



A World War I propaganda poster by Frederick Strothmann depicts a German soldier as a “Hun” with a blood dripping from his bayonet and fingers. Library of Congress.

Early in the eighteenth century, patriotic Germans persuaded themselves that German *Kultur* was intrinsically superior to French *civilization*, and Russian Slavophiles soon argued for the superiority of the Slavic soul over more westerly versions of *Kultur* and *civilization*. Meanwhile in France and England, easy and rapid imperial expansion in Africa and Asia seemed evidence of their superiority to other peoples; and the term *civilization* was broadened to describe the achievements of British, French, and European society as a whole. French and British empires were the most extensive, and both countries were situated in western Europe; but no one made much of that geographical detail. (The words *West/Western* as cultural entities are typically capitalized, while *west/western* as geographic distinctions are commonly lowercase.) Before World War I, by and large, *civilization* was

conceived as unitary, centered in Europe, and destined to illuminate and eventually improve the lives of other peoples in colonial (and ex-colonial lands like the United States) as they learned the skills and style of civilized behavior from contacts with civilized Europeans.

This intellectual landscape altered abruptly during World War I. In particular, the concept of Western civilization came to the fore in the English-speaking world when defense of “Western civilization” against the attacking Germans became a theme of British propaganda. In an incautious moment, Kaiser Wilhelm actually told his troops to mimic the fury of the Huns; by calling German soldiers “Huns,” British propagandists were able to confuse the obvious fact that Germans shared Western European civilization and made them out to be barbarians from the East. To be sure, concepts of West–East polarity had antecedents going all the way back to Herodotus who had contrasted free Greeks on the western side of the Aegean Sea with enslaved Persians coming from the east. And British war propaganda rejuvenated that motif by celebrating British and French “liberty” as against Germany’s imperial, aristocratic and wickedly aggressive government. When the United States entered the war in 1917, President Woodrow Wilson chimed in by claiming his government’s purpose was to make the world safe for democracy.

After 1918, these wartime follies were soon abandoned in Britain and France, but not without some sense of shame. Throughout Europe, separate nationalistic histories, elaborated during the nineteenth century, continued to dominate classrooms in schools and universities. Accordingly, differences among the countries and peoples of Europe seemed more significant than “Western” or any other sort of shared civilization. Instead each nation treasured its own grievances against neighbors and cherished its own claims to greatness. Conviction of European superiority to Asians and Africans persisted, but that was based more directly on skin color than on such an intangible as Western civilization.

*Our speculation has burst through the ramparts of heaven,
not content to know merely what is shown to it.* • Seneca (4 BCE–65 CE)

Western “Civ” Enters College

In the United States, however, the concept of Western civilization had a far more significant career. Courses in Western civilization were invented during World War I to explain to draftees what they were fighting for. These survived the war in a few American colleges, and spread widely in the 1930s, supplementing American national history and becoming required introductory courses for a great many students. Western “civ” courses retained that privileged status until the 1960s or later so that a whole generation of college students acquired a modest familiarity with ancient, medieval, and modern European history, and the belief that they were heirs of that past. This was accompanied by almost total ignorance of the history of the four-fifths of humankind excluded from Western civ courses.

Reasons for this curricular development are not far to seek. American national history was too brief to connect directly with ancient Greece and Rome, the staple of humanistic higher education as transmitted to the country’s Founding Fathers. Filling the gap with British history was acceptable to many Americans of English and Scottish descent, but Americans whose ancestors had come from other parts of Europe wanted a broader-based past and found it in “Western civilization” courses. And by annexing Western civilization to their own national history, Americans achieved a grander, more inclusive cultural ancestry than any single European country could boast.

There was a second and in many ways more powerful intellectual impetus behind Western civilization courses as they came on stream in the 1930s. Most college-bound Americans had learned a smattering of Biblical history in Sunday school, and the Christian (and Jewish) view that God governed the course of events was firmly implanted in their minds. But ever since the eighteenth century, a contrary liberal Enlightenment view of history had taken root in a limited intellectual circle, according to which the progress of liberty was what mattered most, and liberation from religious error by recognizing historical

causes with which God had nothing to do was part of the story.

Western civ courses offered a splendid opportunity to juxtapose these rival worldviews. By pitting Reason against Faith, “Saint Socrates” against Saint Paul, such courses spoke to central concerns of generations of students. Choosing to focus on a few great books, works of art, and big ideas—and showing how they changed from age to age—introduced college students to aspects of the Western cultural heritage and invited them to pick and choose what to accept and what to reject from it. As such, Western civ courses came alive for innumerable college students and helped them to



A menu for dinner served aboard a Hamburg-Amerika Linie steamer shows how French and English customs, like the musical “salon,” influenced German and American polite society for several centuries. New York Public Library.

shape a meaningful world from which the majority of humankind was tacitly excluded.

By the 1960s this constellation of circumstances altered, and Western civ courses soon lost their preferred place in most American colleges. Their dismantlement arose mainly from the discontent of young instructors who objected to teaching hand-me-down Western civ instead of presenting their own up-to-date specialized fields of research, as tenured professors preferred to do. Since tenure depended on published research it was clear that teaching Western civ delayed professional advancement. Tenured professors could not deny that obvious fact, so such courses had few defenders and most of them were soon scrapped.

Changes on the religious scene also contributed to making them obsolete. Decaying Sunday School training deprived Western civ courses of their earlier intellectual bite for some students, and a contrary current of born-again religious commitment made secular history unwelcome to others. Efforts to expand the scope of Western civ to embrace the rest of the world remained weak and sporadic and have not yet become really respectable in the eyes of most academic historians. Instead, industrious researchers multiplied specialties, making national history more and more incoherent, and calling the validity of every sort of statement about large-scale history into ever more serious question.

The collapse of European empires after World War II and widespread rejection of claims to any sort of ethnic, racial, or cultural superiority was a third factor that undermined the legitimacy of Western civ courses. And as students of non-European descent began to show up in college classrooms, efforts to accommodate them by teaching Amerindian, Asian, Latin American, and African history

multiplied. Multiple civilizations, all conceived as equal and separate, became fashionable; and when outsiders intruded, as Europeans had done so obviously in the nineteenth century, they were often blamed for it. Western civ thus became something of a bogeyman—the exact opposite of what American undergraduates had been brought up to believe between 1930 and 1960.

Further transformations of American historical teaching no doubt lie ahead. Western civ is likely to continue to play a conspicuous part as it has since the 1930s, because how to fit Europe as a whole and Western Europe in particular into the recent history of the world remains so problematic. Yet the whole concept of Western civilization as an entity acting in world affairs is uncertain. Structuring world history around separate civilizations became commonplace after Oswald Spengler's *The Decline of the West* (1918–1922) and Arnold J. Toynbee's *A Study of History* (1934–1961) did so. But as globalization advances, the separateness of local civilizations blurs, and historians, reflecting their times, have begun to emphasize larger, transcivilizational connections, while simultaneously questioning the coherence of Western or any other regional civilization.

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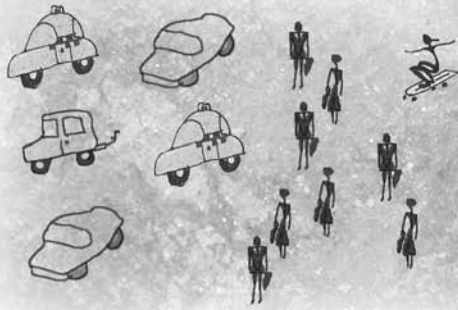
See also Civilization, Barbarism, and Savagery; Modernity; World History, Writing of

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Wind Energy

Sails were one of the first inventions to convert wind energy into motion, and windmills have been used since the tenth century to harness the power of the wind for grain milling and water pumping. In the early twenty-first century, wind is the fastest growing renewable energy source, forecasted to provide 20 percent of the world's electricity by the year 2040.

Only a small portion of incoming solar radiation (less than 2 percent) powers the atmospheric motion. The combination of diurnal and seasonal changes of insolation (exposure to sun's rays) and of differential heating of surfaces (vegetated vs. barren, land vs. water) mean that wind frequencies and velocities range from prolonged spells of calm to episodes of violent cyclonic (rainstorms, tornadoes, hurricanes) flows. Sail ships, used by the earliest civilizations of the Old World, were undoubtedly the first converters of wind energy into useful motion. And before the end of the twentieth century, one of the world's oldest energy sources has become one of the most promising modern providers of renewable energy as wind-generated electricity has been the fastest growing segment of modern renewable energetics.

The first written record of windmills comes a millennium after the first mention of water wheels: al-Masudi's report of 947 CE notes the use of simple vertical-shaft windmills in Seistan (in today's eastern Iran) to raise water for irrigating gardens. The first European record comes only from the closing decades of the twelfth century. Subsequent development of windmills was uneven in both time and space.

Windmills and Their Uses

The earliest vertical designs were used basically unchanged for many centuries in the Near East, as were the horizontal European machines. These mills pivoted on a massive central post that was supported usually by four diagonal quarterbars, and the whole engine house had to be turned to face the wind. Post mills were unstable in high winds and vulnerable to storm damage, and their low height limited their efficiency. Still, unlike China and India, where wind power made historically little difference, post mills became a major source of rotary motion in Atlantic Europe.

As with watermills, grain milling and water pumping (the Dutch drainage mills being the most prominent examples of this application) were the most common applications of wind power. Other common uses included grinding and crushing, papermaking, sawing, and metalworking. Post mills were gradually replaced by tower mills and smock mills. Only the top cap of these machines had to be turned into the wind, and after 1745 the English introduction of the fantail made it possible to turn the sails automatically. The fantail catches the wind bearing away from the sails and it turns the cog ring at the top of the tower until the sails are returned square on to the wind. More than a century before this innovation the Dutch millers introduced the first relatively efficient blade designs that provided more lift while reducing drag. But true airfoils, aerodynamically contoured blades with thick leading edges, were introduced in England only by the end of the nineteenth century.

America's westward expansion on the windy Great Plains created demand for smaller machines to pump



Windmill on Hay Ground Hill, Long Island, New York (1922). Windmills of this traditional design, unchanged for centuries, were most often used for grain milling and water pumping. Photo by Eugene L. Armbruster, New York Public Library.

water for steam locomotives, households, and cattle. These windmills were made of a large number of fairly narrow blades or slats that were fastened to solid or sectional wheels, and they were usually equipped with independent rudders and either the centrifugal or the side-vane governor.

Windmills reached the peak of their importance during the latter half of the nineteenth century: in 1900 about thirty thousand machines with a total capacity of some 100 megawatts worked in countries around the North Sea, and the U.S. sales of smaller brands of American windmills amounted to millions of units during the second half of the nineteenth century.

Wind Electricity

Many machines that continued operating in the twentieth century were connected to generators to produce electricity for immediate household use and

for storage in lead-acid batteries. Gradual extension of electricity networks ended this brief era of wind-generated electricity and little research and even less field testing on converting wind into useful energy was done until the early 1970s, when the Organization of Petroleum Exporting Countries (OPEC) suddenly quintupled the price of crude oil, reigniting the interest in renewable energies.

Modern Wind-Driven Electricity Generation

The first modern boom in wind energy was launched by U.S. tax credits during the early 1980s. By 1985 the country's wind turbines had installed capacity of just over 1 gigawatt, and the world's largest wind facility (637 megawatts) was at Altamont Pass in California. Low load factors, poor turbine designs, and the expiration of tax credits in 1985 ended this first wind wave. Better turbine designs, with blades optimized for low speeds, and larger turbine sizes have led the expansion that began around 1990. The average size of new machines rose from a mere 40–50 kilowatts in the early 1980s to over 200 kilowatts a decade later, and today's typical sizes in new, large wind farms are 1–3 megawatts (one megawatt equals 1 million watts, or one thousand kilowatts). Germany, Denmark, and Spain have been the leaders of this expansion. New laws that guarantee a higher fixed price for wind-generated electricity have been essential, and the Danish government has been particularly active in promoting wind power: the country now has the highest per capita installed capacity, and it dominates the world export market in efficient wind turbines. Germany is the world leader in absolute terms, and by 2007 Europe had about 60 percent of the globally installed wind capacity.

Wind-generating capacity in the United States rose from 1 gigawatt (1 billion watts) in 1985 to 2.5 gigawatts by the end of 2000, and it reached 20 gigawatts by September 2008. Global capacity of wind turbines reached 1 gigawatt in 1985, 10 gigawatts in 1998 (equal to nuclear plants in 1968), and 17.4 gigawatts in 2000, and then it grew rapidly to 59.1 gigawatts

I was born on the prairies where the wind blew free and there was nothing to break the light of the sun. I was born where there were no enclosures. • **Geronimo (1829–1909)**

by 2005 and to nearly 94 gigawatts by 2008. As a result wind-driven electricity generation is seen as the most promising of all new renewable conversions, far ahead of other solar-based techniques both in terms of operational reliability and unit cost. Some experts argue that at the best windy sites, even unsubsidized wind electricity is already competitive with fossil-fueled generation, or even cheaper than coal or gas-fired production, and hence we should go for a more aggressive maximization of wind's potential. Some plans foresee 20 percent of the world's electricity demand generated by wind by the year 2040, and 20 percent of America's electricity coming from wind by 2030. That is not a modest goal considering that in the year 2000 wind generation produced just 1 percent of the country's electricity.

Available resource is no obstacle to even the boldest dreams. Only about 2 percent of all solar energy received by Earth is needed to drive the atmospheric motion, and if a mere 1 percent of this flux could be converted to electricity, the global capacity would be some 35 terawatts (one terawatt equals 1 trillion watts), or more than ten times the 2000 total installed in all fossil, nuclear, and hydro stations.

A much more restrictive estimate that considers only wind speeds above 5 meters per second up to 10 meters above ground puts the global wind power potential at about 6 terawatts, or about 350 times larger than the total installed in 2000. The main problems associated with tapping this potential result from the fact that wind is unevenly distributed in both space and time.

Many windy sites are far away from centers of electricity consumption, and many densely populated areas with high electricity demand experience long seasonal periods of calm or low wind speeds and hence are utterly unsuitable, or only marginally suited, for harnessing wind's energy. Virtually the entire southeastern United States, northern Italy, and Sichuan Province (China's most populous province) are in the latter category. Wind's intermittence means that it cannot be used for base-load generation. Its fluctuations are only imperfectly predictable, and peak wind flows only rarely coincide with the time of the highest demand. Inevitably, these realities complicate efficient commercial utilization. The visual aspect of siting large turbines and building connection and transmission lines is another concern. Offshore



A wind farm in California. These modern-day windmills are used to generate electricity. Photo by Kevin Connors (www.morguefile.com).

siting of wind turbines should help to minimize or eliminate these impacts.

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See also Energy; Sailing Ships

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Women and Literature

Although the world's earliest-known writer (Enheduanna, c. 2300 BCE) was a woman, women's literature has largely been disregarded and trivialized, at least until the twentieth century's feminist wave focused attention on it. From ancient Greece's Sappho to contemporary authors of the developing world, the subjects, styles, and stories are varied; women's literature, however, often does challenge boundaries and confront oppression.

Historically, women have both penned and been the subject of literary works since ancient times, but their relationship to the literary realm has been mediated by their struggle to become literate—to be able to write, read, and critique literary works—and by their insufficient participation in the production process. As objects under the male gaze, they have largely been stereotyped or downright ignored, rarely presented as autonomous agents of history. Furthermore, women writers historically have been marginalized by their male counterparts, and many of their works either remain unacknowledged or tokenized by literary critics. With the rise of the global women's movement, and the feminist movements in the West in the last millennium, male and female scholars alike are rediscovering and celebrating foundational works of women's literary production from ancient times to the present.

Ancient Women Writers

Some of the earliest writings and evidence of women's literacy have been found in excavations of the ancient cities and cultural centers of Egypt, Mesopotamia,

Greece, Asia, and the Americas. The earliest known female writer, and the earliest known author of all literature, Enheduanna, lived and wrote around 2300 BCE, almost two thousand years before the “Golden Age” of Greece, in what we know today as the Middle East. She was an Acadian (at the time part of what is present-day Iraq) writer, priestess, poet, and princess, daughter to King Sargon I of Akkad, who created the first historical empire. The paucity of writing about this important author and poet as well as her exclusion from world literature and women's literature anthologies is not surprising given that her works have only recently resurfaced. All of the artifacts upon which translations of Enheduanna's work are based come from the Old Babylonian period nearly a half millennium after her existence and include at least two and possibly three major hymns directed to the goddess Inanna, the goddess of battle. These works were rediscovered in excavations at Ur in 1921, but the first translations of her work into English did not occur until 1968 when W. W. Hallo and J. J. Van Dijk translated *The Exaltation of Inanna* by Enheduanna. More recently, the German scholars Annette Zgoll and C. Wilcke have separately identified up to forty-nine newly publicized texts, resulting in a new, updated translation by Zgoll.

Although no evidence has been unearthed so far of literary works written by ancient Egyptian women, they did have a goddess of writing—the goddess Seshat, the “female scribe.” Other than Seshat, very few women were depicted with a scribe's writing kit in the surviving scrolls, as the preferred writing medium of papyrus has not endured the passage of time like the clay tablets of Mesopotamia. The high-ranking or royal women who were literate were often given a



Sir Lawrence Alma-Tadema, *Sappho and Alcaeus* (1881). Oil on canvas. This painting re-creates a scene preserved in Book 2 of Athenaeus' *Deipnosophistae* (Philosophers at Dinner), in which Sappho and her companions listen to the poet Alcaeus play the *kithara*. Alma-Tadema accurately depicts the marble benches at Athens' Theater of Dionysus but substitutes the names of Sappho's sorority members for those of the city officials that were incised on the prototype.

private tutor who taught them reading and writing. For example, Neferura, the female pharaoh Hatshepsut's (reigned 1503–1482 BCE) daughter, had a private tutor, Senmut. Excavations in Egyptian tombs have provided evidence that at least some ordinary housewives were able to read and write—there were laundry lists, female fashion advice, and other female concerns found in preserved papyrus scrolls. A detailed history of the role of women in ancient Egypt is provided in *Mistress of the House, Mistress of Heaven: Women in Ancient Egypt* (Capel, Markoe, and Markoe 1977).

The Greek poet Sappho is one of the most well-known female poets of all time. She was born toward the end of the seventh century BCE, during the Greek Archaic Period. A native of Mitylene in the island of Lesbos, Sappho was one of the two (with Alcaeus) great leaders of the Aeolian school of lyric poetry. She was widely acclaimed for the originality of her brilliant lyric poetry and lived to be honored by her

people for her literary gift. Poetry in her day was usually accompanied by music and dance, and Sappho was so accomplished at composing in all three modes that she acquired a reputation for being the divine inspiration of the muses; she was even referred to as the tenth muse. The debate and speculation about her expression of strong passion toward other women has been the subject of many articles, books, presentations, conferences, and even websites. But in Sappho's society, as in later pre-Freudian eras, women often congregated and, among other social activities, shared the poetry they had written, and their open expression of love and passion toward one another, whether sexual or not, was acceptable and commonplace. Her lyric poems formed nine or ten books, but only fragments of these have weathered the ages, and no piece is longer than sixteen lines. The most important is an ode to Aphrodite, which may be the most complete of the works that have survived.

The first recorded female playwright, Hroswitha of Gandersheim, was born in 932 CE to the Saxon aristocracy. She became a Benedictine cloister nun early in life and was known for her witty and farcical plays. A century later, Anna Comnena became the first female historian. Born in 1083, Comnena detailed the reign of her father, Alexius I, and the exchanges between the Byzantines and western crusaders of the first crusades in her fifteen-volume history of her family, titled *Alexiad*. Comnena lived in an era when women chiefly were expected to remain secluded in their quarters (called *gynaeceum*) attending solely to family matters. They covered their faces with veils in public and were not even allowed to appear in processions. In her writings, however, it is evident that she was allowed to express her own thoughts and serve an important role in preserving her family's history.

In the realm of theology, composition, and visionary writing, Hildegard von Bingen, born in 1098, published the visionary *Scivias*. Known as "Sybil of the Rhine," she was highly revered for her treatises about natural history and medicinal uses of flora and fauna as well as minerals and stones. She founded several convents, and is the first composer whose biography is known. She has been beatified and is often referred to as Saint Hildegard. She wrote, composed, and was a respected leader and wise woman at a time when few women were accorded these privileges.

Japanese writer Murasaki Shikibu is credited with writing the world's oldest novel and one of the finest, *The Tale of Genji*. Written in the Heian period (794–1185) in Japanese history, during the early eleventh century, when prose and poetry by women scarcely existed in the West, the work followed a tradition of romances depicting life among the court nobility of Japan. Shikibu was born into the Fujiwara family, daughter of the governor of a province, who was a well-known scholar. He allowed Shikibu to study with her brother, even letting her learn some Chinese classics, which was considered improper for females at the time. In its length (more than one thousand pages in



Kano Tannyu (n.d.). Woodcut print portraying Murasaki-Shikibu, author of *The Tale of Genji*.

the English translation), complexity, realism, psychological depth, and literary distinction, *The Tale of Genji* is considered a masterpiece of Japanese literature.

History, real solemn history, I cannot be interested in . . . I read it a little as a duty; but it tells me nothing that does not either vex or weary me. The quarrels of popes and kings, with wars and pestilences in every page; the men all so good for nothing, and hardly any women at all—it is very tiresome. • Jane Austen (1775–1817), as Catherine Morland in *Northanger Abbey*

The First Feminists

With the publication of her poetry in the fourteenth century, poet and philosopher Christine de Pisan became the first woman to earn her living through writing. She is widely believed to be the first feminist writer in the history of literature. Many of de Pisan's works urged that women be allowed to participate more fully in society. She also denounced the way women were portrayed in medieval literature. For example, in her long poem *Letter to the God of Love*, she complained that women were often described as dishonest and unreliable. She openly criticized misogynous literature in a controversial debate known as the *Querelle des Femmes*, a debate which is thought to have also inspired many British women writers who came after her.

Indeed, British women writers argued strongly for women's literacy, even as they were forced to use pen names so as to avoid scandal. The first known feminist argument published in English is credited to one Margaret Tyler, whose true identity remains a mystery. In 1578, Tyler argued that women have the same capacity to research and write as men do, and that they should be allowed not only to write, but also to choose their own subjects. A decade later, in 1589, another writer whose identity is still unclear but who went by the pen name of Jane Anger became the first major female polemicist in English. In a lengthy tract called *Jane Anger: Her Protection for Women* (1589), she challenged the misogyny present in Elizabethan culture and asked, "Was there ever any so abused, so slandered, so railed upon, or so wickedly handled [*sic*] undeservedly, as are we women?" Other "First Feminists," as the scholar Moira Ferguson calls them, include Aphra Behn, the first female British playwright and a spy for the British government; Mary Collier, author of *The Woman's Labour* (1739); Ann Cromartie Yearsley, author of "A Poem on the Inhumanity of the Slave-Trade" (1788); Catherine Sawbridge Macaulay Graham, who in 1790 published *Letters on Education*; and the most influential British feminist thinker of her time, Mary Wollstonecraft, who said, "It would be an endless task to trace the variety of meanness,

cares and sorrows, into which women are plunged by the prevailing opinion, that they were created to feel than reason, and that all the power they obtain, must be obtained by their charms and weakness." Wollstonecraft advocated for a more humanitarian approach to Native American Indians, and in her *A Vindication of the Rights of Man* (1793), she attacked slavery as well. Her persuasive and passionate call for human justice is exemplified in her most famous work, *A Vindication of the Rights of Woman*, written in 1792.

Following in the line of daughters of the nobility around the world who had access to literacy, the Indian poet Mira Bai, a devotee of Krishna and a princess who renounced her royal family, was the only female among the sixteenth-century Bhakti poets. Her poems celebrate women's songs and folk traditions, and are often directly addressed to a female friend or an audience of women. At a time when infringement of the rules of chastity, modesty, and seclusion for married women was an insult to the family of a noblewoman, her writings showed a remarkable sensuality and were considered to be quite subversive.

In the Americas, there is also a rich history of women authors that has only recently begun to be rediscovered and celebrated. Societal and cultural attitudes resulting from the legacy of colonization, genocide, forced destruction, and undermining of indigenous people's traditions and values have led to a literary canon that is characterized by the inadequate representation of female-authored works. Of the autonomous ancient peoples of Mesoamerica (i.e., central and south Mexico, including the Gulf Coast, the Yucatan Peninsula, Guatemala, and parts of El Salvador and Honduras, the general area where high civilizations flourished between 1000 BCE and 1521 CE), it is the Aztec princess Macuixochitl "5-Flor" (5-Flower) who stands as the lone female voice in a rare compilation of poems by thirteen Aztec poets published by Don Miguel León Portillo, Mexico's leading indigenous scholar, in the 1960s. Daughter of the great adviser to seven Aztec emperors, Tlatoani Tlacaelel, Princess Macuixochitl

5-Flor exemplifies the high status that the daughters of the ancient Aztec nobility could achieve. Hers is so far the only female literary voice that remains from precolonial Mesoamerican history, even though there are several chronologies of the conquest that provide a secondhand portrayal of women and their experiences in colonial America. Of these representations, perhaps the most famous in Latin America and in world literature is the figure of La Malinche, an Indian woman who served as interpreter, guide, mistress, and confidante to the Spanish invader Hernán Cortés during the time of the conquest. Considered by some as the first woman of Mexican literature—and by most Mexicans before the modern period as a traitor, prostitute, and symbol of national betrayal—her story has been the topic of countless and oftentimes contradictory descriptions and interpretations and, with the rise of Chicana and Mexicana writers and critics such as Adelaida R. Del Castillo, Cherrie Moraga, and Elena Poniatowska in the twentieth century, of more positive reconfigurations.

The first feminist, and undoubtedly the greatest poet of the Americas in the seventeenth century, the Mexican poet Juana Ines de la Cruz, was born in 1651 in San Miguel Nepantla, a village south of Mexico City. Her given name was Juana Ines Ramirez. She was a Jesuit nun, a woman of genius whose ideas and accomplishments were ahead of her time. With works like *Respuesta a Sor Filotea* (Response to Sor Filotea), *Protesta Que Rubrica con Su Sangre* (Profession of the Faith Signed with Her Own Blood), and *Carta Atenagorica* (The Athenagoric Letter) Sor Juana, a Jesuit nun, became the first woman in the Americas to speak out against the injustices done to women and called for their education. She wrote amazing lyrical poetry, of which her most famous are her *Redondillas*. She also wrote comedic plays that criticized the passive role that was expected of women in the Middle Ages, and challenged the female archetypes in medieval literature. Her secular poetry, her rhetoric, music, plays, and pursuit of scientific knowledge were unheard of in her society, especially by a nun, and she was in the end censured for her analysis of a sermon given by a Jesuit priest she disagreed with. When she



Miguel Cabrera, *Sor Juana Inés de la Cruz* (1750). Oil on canvas. Juana Ines Ramirez, who became a Jesuit nun, fought against female archetypes in medieval literature and was eventually censured for disagreeing in writing about a priest's sermon.

refused to stop writing secular works, she was forced by the archbishop to turn over her books, scientific instruments, and other possessions, and died alone of an unknown epidemic that swept her convent. She is often compared to the Greek poet Sappho and has influenced countless women writers after her.

The 1800s and Early 1900s

The late eighteenth and nineteenth centuries saw a proliferation of publications by women. After centuries of calling for greater access to literacy and education, to legal rights and labor rights, the international women's struggle for human and civil rights intensified and reached new heights. An influential group of American women, including Elizabeth Cady Stanton and Lucretia Mott, composed the "Declaration of Sentiments and Resolutions," outlining the main issues and goals for the emerging women's movement,



at the First Women's Rights Convention at Seneca Falls, New York, in 1848. The first gains in the international suffragist movement earned women the right to vote in countries like Sweden (1862, in local elections), Scotland (1881, local elections), and New Zealand, which became the first and only country to allow women to vote before the end of the nineteenth century, in 1893. In the United States, at the same time when Southern white women created Confederate memorial societies to help preserve the memory of the "Lost Cause," newly emancipated Southern black women formed thousands of organizations aimed at "uplifting the race." Then, in 1866, Elizabeth Cady Stanton and Susan B. Anthony formed the American Equal Rights Association, an organization for white and black women and men dedicated to the goal of universal suffrage. It was in this environment of division and cooperation that African-American women's writings began to proliferate. The works of these writers spanned several literary genres, including poetry, essays, short stories, histories, narratives (including slave narratives), autobiographies, novels, theological works, social criticism, and economic and philosophical treatises. Although the first known book of poetry by an African American, *Poems on Various Subjects, Religious and Moral* by Phillis Wheatley, appeared in 1773, it was not until the mid-nineteenth century that novels like Harriet Beecher Stowe's *Uncle Tom's Cabin* (1852) and *Our Nig* by Harriet Wilson (1859) appeared. This is perhaps due to the fact that before the Civil War, most people of African descent were held in bondage in the United States. Sojourner Truth once remarked, in reply to an allusion to the late Horace Greeley, "You call him a self-made man; well, I am a self-made woman." Indeed, what may be considered the first testimonial work by an African American woman, *The Narrative of Sojourner Truth: A Northern Slave*, a dictated memoir by Sojourner Truth, was published in 1850, and the first collection of essays by an African American, Ann Plato's *Essays*, was published in 1841.

Other important African American women writers include Harriet Jacobs, Nancy Prince, Elizabeth Keckley, and Ellen Craft. Jacobs, who was born in 1813 and wrote the most in-depth pre-Civil War slave

narrative written by an African American woman in America, published her *Incidents in the Life of a Slave Girl* in 1861. The book was thought to be written by a white woman until the rediscovery of Jacobs's works in the 1980s, as she had not used people's real names and claimed the pseudonym Linda Brent for herself in the narrative. Nancy Prince, who published *Narrative of the Life and Travels of Mrs. Nancy Prince* in 1850, provided the first autobiographical account of life as a free black woman in antebellum America. It is also an important contribution to the genre of autobiographical travelogues, since she documents her travels to Russia, Jamaica, and different parts of the United States over the course of eighteen years and provides a firsthand account of the 1824 flood of St. Petersburg, the deaths of Emperor Alexander I and Empress Elizabeth, and the Decembrist Revolt of 1826. Elizabeth Keckley, who wrote *Behind the Scenes, or, Thirty Years a Slave and Four Years in the White House* as a personal account of life in the White House, challenged the predominant stereotypes of women, and African American women in particular, in the nineteenth century. A friend and confidante of Mary Todd Lincoln, she was highly criticized for claiming that she was a friend of a white woman, and the wife of a president at that. The oldest son of President Lincoln, Robert Lincoln, waged a campaign against the book, and was successful in having the book withdrawn from publication. She went on to found a school for young black girls in 1863, was president and founder of the First Black Contraband Relief Organization, and represented Wilberforce University at the 1893 Columbian World's Exhibition in Chicago. Ellen Craft's amazing account of her and her husband's escape from slavery, *Running a Thousand Miles for Freedom*, is considered to be "one of the first examples of racial passing, cross-dressing, and middle-class performance in a society where each of these boundaries were thought to be distinct and stable" (Brusky 2000). Craft dared to use her light skin to pass as a white male in order to travel by train and boat, with her husband William Craft posing as her slave. Their escape, and particularly Ellen's disguise, illustrates the interlocking nature of race, gender, and class, for Ellen's passing had to be

Literature is my utopia. • **Helen Keller (1880–1968)**

successful in all three arenas simultaneously in order for them to travel undetected. And since William's narrative voice actually tells the story, *Running* also shows how difficult it was, even for a woman bold and daring enough to escape slavery in this way, to find a public voice as a black woman. Indeed, like her disguise, which involved poultices that "muffled" her and allowed her to avoid conversation, Ellen's voice is given through the filter of William's perspective.

The mid-nineteenth century also saw the publication of one of the earliest precursors to contemporary Chicana (Mexican-American) literary tradition. With the publication of her novels *Who Would Have Thought It?* in 1885 and *The Squatter and the Don* (under the pseudonym C. Loyal) in 1872, Maria Amparo Ruiz de Burton became the first writer to publish a novel from the perspective of the Californios, the dispossessed population living in Alta California at the end of the U.S. invasion of Mexico that began in 1846 and ended with the Treaty of Guadalupe-Hidalgo in 1848. Ruiz de Burton's novels and personal writings provide a scathing condemnation of the new rulers and the forms of ruling imposed upon the conquered population and give balance to mainstream histories of this period of American history.

In Spain, the nineteenth century produced the most celebrated female author of her time, and arguably one of Spain's most important literary figures. Emilia Pardo Bazan, born in 1852, was a Spanish countess who wrote over five hundred short stories and essays, more than forty novels, and seven plays. She also edited and published several magazines in her lifetime, including *La Revista de Galicia* and *Nuevo Teatro Critico*, and in 1892 founded La Biblioteca de la Mujer (The Woman's Library). Having had her first work published at the age of eight, she won many awards, perhaps the most notable of which was the *Crux Pro Ecclesia et Pontifice* (Cross for the Church and Pontiff), which she received from Pope Benedict XV. Of all her works, perhaps her best known piece is *La cuestión palpitante* (*The Critical Issue*), written in 1883. A polemical essay that discusses naturalism, it introduced the French and Russian literary movements to Spain and started an important literary

controversy in which she championed the free will of the individual. In 1916 she became Professor of Contemporary Literature at Central University of Madrid, a position created solely for her.

Born in 1882, Adeline Virginia Stephen, or Virginia Woolf, is credited with developing a new kind of prose that she associated with female consciousness and with her precise evocations of states of mind and body; thus she joined Marcel Proust and James Joyce in a move away from the conventions of modernist realism and linear plot to a more complex ordering of her narratives, including juxtapositions of diverse points of view, incomplete perspectives, and time and space displacement. *A Room of One's Own*, perhaps her most famous work, examines the history of literature written by women and argues for women's



Studio photograph of Virginia Woolf (1882–1941) taken in 1902 by George Charles Beresford. Woolf's *A Room of One's Own* became an icon of feminist literature.



Maya Angelou recites her poem, "On the Pulse of Morning," at President Bill Clinton's inauguration, 19 January 1993. Office of the White House.

economic independence and the privacy of a room in which to write. Originator of the Bloomsbury Group, she was a successful publisher, founding Hogarth Press in 1917 with her husband, Leonard Woolf. She was also an activist in the suffrage and feminist movement, and taught as a volunteer at Morley College, which provided educational opportunities for workers, although her weak health and severe bouts of depression and mental illness plagued her until 1941, when she committed suicide.

Contemporary Women Writers

The French writer Simone de Beauvoir, with the publication of her book *The Second Sex* in 1953, is considered by some to have inspired the second wave of the feminist movement with her in-depth discussion of women's oppression and of their role as "other." Indeed, her comprehensive treatise on women weaves together history, philosophy, economics, and biology and postulates on the power of sexuality. The 1970s and 1980s were enormously important in feminist

literary theory and women's studies, with major contributions by Helene Cixous of France, Teresa De Lauretis of Italy, Belgium's Luce Irigaray, Donna Haraway of the United States, Bengali exile Gayatri Chakravorty Spivak, and Julia Kristeva of Bulgaria, among others. Then, in the late 1980s, women of color and Third World women such as Kumari Jayawardena of Sri Lanka, Chandra Talpade Mohanty of India and the United States, Ella Shohat of the United States, Paula Moya of the United States, Lata Mani of India, Trinh T. Minh-ha of Vietnam and the United States, Gloria Anzaldua of the United States, and Cherrie Moraga of the United States published powerful writings that theorized, challenged, dialogued with, and expanded discussions of feminist theory, gay/lesbian/queer/black feminist theory and Chicana/Latina feminist theory, and enriched the fields of postcolonial and Third World women's literature.

Women writers in the twentieth and twenty-first centuries have continued to speak out against oppression, to redefine the boundaries of what are considered acceptable literary forms and subjects, and to gain more widespread recognition of their works. But the literary canon is still in great need of revision that must insist upon the incorporation of women writers who have been ignored and omitted from literary history. One example of a text that follows this ideal of equality and inclusiveness is Shirley Geok-Lin Lim and Norman A. Spencer's *One World of Literature*. This amazing anthology, originally published in 1993, offers an impressive array of twentieth-century male and female authors, and one of the most complete collections of full texts and excerpts by women writers from around the world. Highlighting the works of a diversity of writers like Bessie Head of Botswana, Rosario Ferré of Puerto Rico, and Jamaica Kincaid of Antigua, this anthology is essential reading for anyone interested in women in world literature. The anthology represents the works of brilliant female authors seldom known outside their own countries as well those known worldwide. The works of Ama Ata Aidoo of Ghana, Fawziyya Abu-Khalid of Saudi Arabia, Wang Xiaoni and Ding Ling of China, Ambai and Amrita Pritam of India, Ishigaki Rin of Japan,

Shirley Geok-Lin Lim (the editor herself) of Malaysia, Elizabeth Jolley of Australia, and Margareta Ekstrom of Sweden are coupled with those who have achieved a wider international reach, such as Nobel Prize winner Nadine Gordimer of South Africa, Mahasweta Devi of India, Zhang Ailing of China, Isabel Allende of Chile, and Margaret Atwood of Canada. According to Shirley Geok-Lin Lim and Norman Spencer, “we live in an age in which an understanding of global cultures is more critical than ever. . . . [W]e are all affected by individuals, events and ideas from other cultures and countries, a truth the late twentieth century has brought home to almost everyone” (Lim and Spencer 1993, xv). It is with this spirit in mind that works such as theirs are beginning to bring balance to a literary world where women’s literacy, women’s writing and its assessment, and the representation of women as autonomous subjects has tended to suffer under the weight of homogeneity, unilateralism, patriarchy, ethnocentrism, and the Western gaze.

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See also Imperialism and Gender; Women’s and Gender History

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Women's and Gender History

During the early nineteenth century, history was written about nations and politics, and the role of men was emphasized. In the 1960s—inspired by the women's movement—a new interest in women's history developed; many asked how the history of women could be separated from economic, social, political, and ideological history. Women's and gender history can provide a new perspective about society and the past.

Women's and gender history may be defined as the history of relations between women and men, of the changing understanding of femininity and masculinity, and of the importance of gender in the organization of society. Since any society, anywhere and at any time, consists of women and men, gender interacts with other categories, such as race, ethnicity, class, citizenship, nationalism, imperialism, and religion, and with other value systems. It assumes importance in divisions of labor as well as in cross-cultural encounters throughout time and has served as a trope for hierarchical perceptions of cultures and power relations.

Gender perspectives in world history date back at least to Enlightenment world histories. At the end of the eighteenth century, some historians focused on costumes and manners, and on peoples' ways of life. Some works pointed to the importance of material conditions, as well as to religious and political systems, for defining women's status; some compared the lives of women within different cultures; some even characterized non-European people as feminine and implicitly less civilized. But when, in the early nineteenth century, historical research narrowed to national histories, mostly concentrating on political

history, the question of gender was left to be explored by other disciplines, such as social anthropology and sociology. In the 1960s, universal history again attracted attention, mainly in the United States. By then historical research was being criticized for neglecting women and seeing men as universal representatives of humankind. Inspired by women's movements and by new approaches to historical studies, such as the history of mentalities, demographic history, and family history, the interest in women's history now blossomed at the national level. During the 1990s this approach also made itself felt within the growing field of universal history.

The Theoretical Framework

Most historical research rests on a dichotomous understanding of gender; an individual is seen as either a woman or a man. Some also take for granted that biology determines not only the sex of a person but also the gender. Historians have challenged this dichotomy by investigating the historical understanding of sexual differences. Departing from Aristotle's assumption of the existence of only one sex, which sees women as embryonic, unfinished males, passing by the dichotomy created by Christianity that equates men with spirituality and women with materiality, they have traced the rise of the two-sex model from the end of the eighteenth century, reaching an apogee through Darwinism and the medical sciences, and experiencing a recent rebirth with sociobiology.

Anthropology and cross-cultural history have cast doubts on this dichotomous understanding of gender. In many parts of the world, notably Africa, but also Alaska, the Amazon region, and parts of Asia,

individuals have assumed tasks, behavior, and clothing that might be seen as characterizing the opposite sex. Some cultures have seen age as determining gender, understanding children and old people as belonging to different genders than grown-up males and females. Add to this the study of gay and lesbian history and the history of sexualities, and it will be understood that world histories need to be aware of variations in the understanding of femininity and masculinity.

An increasing number of studies have shown that systems of sexual differentiation affected both women and men. These revealed the need to study the history of men, too, as gendered individuals. A distinction between sex (that is, physical anatomical differences) and gender (that is, culturally and historically constructed differences between women and men) started the argument over essentialism versus constructionalism. In the 1990s queer theory and poststructuralism further diversified approaches to gender history. The linguistic turn, which focused on texts—literary as well as visual material—rather than on events, individuals, or groups also helped pave the way for studying gender as a trope for hierarchical relations in fields of history that at the outset seemed to have nothing to do with gender.

Some historians have feared that these approaches would deprive women's history of the possibility of studying women as agents in history and reduce the focus of history to the history of women's lived lives. The term *gender history* has also sometimes been seen as a departure from the original aim of restoring women to history and as weakening the political potential of women's history. Gradually, however, helped by the growth in interdisciplinary research approaches, such divisions have become less distinct. Gender history and men's history are now frequently seen as outgrowths of and parallels to women's history, and cultural studies have united a number of approaches to historical research.

Applying gender as an analytical category to world history may be a fruitful way to see gender as a process where the meanings and importance of gender

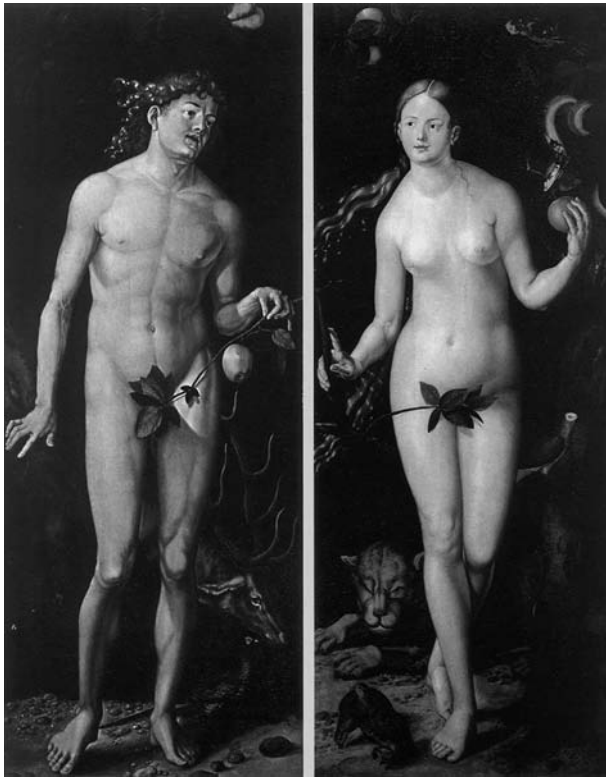


A woman and man from the Mosuo matriarchal society of Lugu Lake, Yunnan Province, China, in a traditional canoe. The Mosuo are among the few remaining matriarchal societies. Photo by Sara Gouvela.

may change over time, and where the importance of other analytical categories—ethnicity, race, class, national and cultural identity, and so on—may interact with gender in varying ways. Gender may be seen as a basic social structure that in any culture, in any society, and at all times interacts with other social structures to determine the socialization of an individual, the distribution of work and responsibilities, and of rights in the family and in society. Gender is at work in studies of material life as well as of ideologies and politics. When societies change, so do gender relations, and changes in gender relations influence other economic, social, and political relations.

From Matriarchy to Patriarchy?

A central issue in early global women's and gender history has been the question of the origin of patriarchy. Although most cultures overtly allocated more direct power to men than to women, historians have wondered if there was once a time when this was not so. Some have postulated the existence of prehistoric matriarchal societies in Africa, in the early Americas, and in Europe. The German nineteenth century scholar J. J. Bachofen (1815–1887) saw such societies as primitive ones that were gradually supplanted by patriarchies, which were more advanced. The socialist Friedrich Engels (1820–1895) believed that agriculture and private ownership gave rise to the nuclear family in which men controlled women's sexuality in order to ensure legitimate offspring.



Hans Baldung (1484–1545), *Adam and Eve* (n.d.). Oil on wood. Galleria degli Uffizi, Florence. The biblical story of Adam and Eve famously blames Eve for the couple's expulsion from paradise.

The American historian Gerda Lerner (b. 1920) has put forward the theory that patriarchy was based on the exchange of women among men and preceded other hierarchies. Other theories have examined the importance of men's physical strength and women's need for protection for the development of patriarchy, or they have interrogated the impact of religious and other ideological forces, of material structures such as plough-cultures, private ownership, literacy, and not least, of state formation and political systems on gender relations. Whatever the theory, insufficient source material makes it impossible to decide how male-dominated societies evolved. But the complicated structures of such societies and the variations among them through time remain enticing research areas.

Gendered Global Human Experiences

Applying gender as an analytical category means questioning the divide between the history of economic, social, political, and ideological structures

and the history of private lives. A basic question may be the shifting importance of the household and family unit to the development of any society. In fact, all global human experiences lend themselves very well to gender analysis. Family structures, economic and social life, politics and value systems, religion, education, and sexuality all vary with gender among cultures and over time to different degrees. A good example may be the gendered effects of twentieth-century population policies. While men and women alike were preoccupied with the family economy and the future of the nation, women experienced population policies on their own bodies. Technological and economic changes, such as the Industrial Revolution, were built on the existence of a gendered labor force and offered cheap routine female and male labor, as well as more expensive specialized, exclusively male labor.

The formation of nation-states and national identities also included women and men in different ways, burdening men with military protection, national expansion, and the economic success of the nation, and women with generational reproduction and the social upbringing of new members of the nation. While preindustrial societies sometimes lent women political power through family connections, for a long time “modernizing” democratic states allocated such power only to men. Regardless of class, ethnicity, or skin color, with very few exceptions women were the last group to obtain suffrage. Religious systems and other ideologies throughout time have contributed in various ways to uphold gender differences and gendered power relations.

Reconsidering Central Concepts

Gender analysis leads to the reconsideration of central concepts. The widely accepted definition of *work* as paid labor in the public sphere will need to be revised in order to include women's unpaid work in the family and household. The importance of this work, as well as the importance of a cheap female labor force, must be taken into consideration in any analysis of material life.

The concept of *power* must incorporate patriarchal power structures into class and race analysis, and consider the effect of psychological sources of power, such as an appeal to emotions, to chivalry, and to honor. Politics must be considered in a wider context than that of public authorities. Civil society as well as kinship must be taken into consideration.

Access—be it physical access to certain spaces or immaterial access to certain prerogatives such as education or political power—is another concept that may be useful for women’s and gender history. Why was women’s access to public spaces and even physical mobility more limited than men’s, and why and how did this vary with social standing and among cultures? The history of physical barriers, such as foot-binding, zenanas, and harems, as well as of the morally grounded limits to women’s mobility includes a gendered understanding of access. Needless to say, educational and political systems were molded in the same perception of gendered spaces. Why did some groups of both men and women struggle to continue such traditions, while others fought to eliminate them?

Special consideration may be given to the understanding of *identity*. Juggling gender, class, caste, ethnicity, and nationality may seem to dissolve personal identity. But analyzing situations where several identities are at play, the historian may ask what prompts one of them to take precedence over the others. Why would an individual at times act mainly as a woman, at other times mainly as a member of a certain social group or of a specific nation? How did gender influence class identity, and how did caste identity vary with gender?

In short, rethinking a number of concepts indispensable to historical analysis will bring forward a new and more varied knowledge of global human experiences.

Cross-Cultural Interactions

Gender played an important role in the meeting of different cultures—for example, the varied influence of Islamic understandings of gender in India and sub-



Jan van Eyck, *Giovanni Arnolfini and His Bride* (1434). Oil on wood. National Gallery, London. Under patriarchal systems in medieval Europe women were not allowed to own property, and their fathers or male relatives decided whom they would marry.

Saharan Africa from the eleventh century onwards, or the Chinese military expansion during the Tang and Song dynasties (618–907 CE and 960–1279, respectively), which spread a strict patriarchal culture to much of East Asia. Chinese-Mongol contacts, however, witnessed a reciprocal distaste for gender relations in the other culture and left little influence either way. Colonial and imperial contacts are the most explored cross-cultural meetings. Enlightenment world historians used gender as a trope for communicating cultural differences. They sometimes characterized non-European cultures not only as “hideous” and “dark-colored,” but also as exhibiting unsympathetic characteristics such as “more than feminine cowardice.” Later male colonizers could construct the notion of colonized women as representing “true femininity” since they served and obeyed men, in opposition to their Western counterparts, who increasingly



Woman aircraft worker at Vega Aircraft Corporation, Burbank, California, in 1944. After World War II women were expected to resume their “traditional” roles as wives and mothers. Photo by Howard R. Hollem, Library of Congress.

refused to do so and even demanded the same rights as men.

Ironically, women missionaries, in their ardent attempts to spread Western values and lacking a full understanding of the workings of gender in cultures other than their own, often encouraged Victorian feminine behavior in colonized women. They did this despite the fact that many of them had intentionally broken out of the limitations implied in Victorian ideals.

The Western understanding of masculinity was also at play. The British would perceive a physically strong and athletic male body and the capacity for self-control and restraint as necessary for those who intended to rule a nation. Seeing Bengali middle-class men as small, frail, effeminate, and lacking self-control, British officials might find them unable to govern themselves, let alone a whole society.

The interaction of changing understandings of gender provides an interesting approach to the study of cultural encounters. Growing opposition to British rule and Westernization strengthened the need for the family as a refuge for Bengali middle-class men. This paved the way for more education for women so they could become intelligent mothers and wives who would uphold Bengali historic traditions within the family. But in the long run this also led to the formation of Indian women's organizations, and for

a while, to cooperation between Indian and British women in the fight for women's suffrage. Repressive British policies at the end of World War I, however, damaged these cross-cultural contacts, and Indian women rebelled against being seen as young daughters to be educated by British protective mothers. The spread of Western feminism after World War II raised similar questions about cooperation and conflict among women.

Critical Dialogues?

As in so many other fields, the uneven growth of historical sciences around the world has implications for the gendering of world history. Women's and gender history first evolved in the United States and Canada, and was taken up soon afterward by Western European universities; the spread to Eastern Europe and to Asian, African, and Latin American universities was slower. But since many historians from these parts of the world are educated at American or European universities, Western research approaches and Western theories exert an overwhelming influence within women's and gender history all over the world.

Special awareness is needed when studying culturally contested historical phenomena, especially if they have an impact on today's societies. Among them are traditions such as sati (widow burning), veiling, and female genital mutilation. For a historian analyzing these traditions, it becomes especially important to distinguish between attempting to understand and explain behavior that is foreign, or sometimes even repulsive, and accepting such behavior; understanding is not the same as accepting. Historians may need to openly acknowledge their own limited cultural and class background, sometimes even their gendered background, in order to work at transgressing such limits. Subaltern (a term referring to those people socially, politically, and/or geographically outside of the existing power structure) studies like those in the 1980s have helped counteract the flood of Western histories. Dialogues have been encouraged by the trend to stop perceiving colonialism and imperialism exclusively as a polarization between the

The dogma of woman's complete historical subjection to men must be rated as one of the most fantastic myths ever created by the human mind. • **Mary Ritter Beard (1876–1958)**

metropolis and the colony and instead to highlight the interaction between what used to be seen as center and periphery. Critical dialogues among historians of various cultural backgrounds are multiplying at international conferences, in journals especially devoted to women's and gender history, and through the workings of the International Federation for Research in Women's History. Such developments are promising for further research in global women's and gender history.

The very character of gender as an analytical category makes it an excellent tool for world historians working at any period and in any society or region. Women's and gender history yields a wealth of new knowledge about the global past. There is a lot to gain by exploring this field of world history—and a lot to lose from not doing so.

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See also Imperialism and Gender; Matriarchy and Patriarchy; Sex and Sexuality; Women's Emancipation Movements

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Women's Emancipation Movements

Gender discrimination occurs everywhere, thus women's emancipation movements occur worldwide, but the struggles experienced and the potential solutions vary widely. Because of this, answers to gender inequities are best addressed by women working together within a culture to advocate for change that is acceptable to all. Gender may be universal, but there is no universal solution to gender inequality.

During the nineteenth and twentieth centuries, women's emancipation movements, whether they were called the "woman question," "women's rights," or "feminism," challenged the Western family economy in which the primary role of women is that of wife and mother, with waged work being a secondary role. Because people saw the domestic sphere as primary, women's work outside the home was undervalued and undercompensated. This distinction caused male domination of the political system with little hope of a reorientation of women's position in society. During the past two centuries women (and a number of men) worked to change this system politically, economically, and socially with varying degrees of success. They rarely took race and class into account, and people usually had an unacknowledged view of universalism toward women in other parts of the world. That is, the position of Euro-American feminists was that all women have the same oppression to overthrow and that common tactics will be useful in all circumstances.

Today students of women's lives recognize that geography is a factor. Although many feminists claim a universal theory of injustice and advocate a universal platform of change, their experience is limited to

industrialized and democratic nations. Areas of the world that have experienced long histories of colonization or that have operated under forms of socialist, collective political systems present radically different challenges to women and call for varying approaches to change. For these reasons the term *women's movements* (plural) is more appropriate for the twenty-first century. The plural (*movements*) acknowledges the validity of dissimilar approaches, and the plural (*women's*) rather than *woman* recognizes that not all women face the same issues in widely divergent geographical areas. The elimination of the word *rights* is a nod to those cultures that do not see adversarial positions as desirable in finding solutions. Women's movements reflect the different histories, cultures, and political systems of people who have a gender in common but perhaps little else.

Britain and the United States

During the nineteenth century, suffrage (the right to vote) received the most emphasis among women's rights groups, but many middle-class women also saw social reform as their defining characteristic. With the rapid urbanization caused by industrial changes, the middle class grew in influence; women asserted their participation by addressing the miseries caused by the new orientations of society and wished to influence legal reforms by exercising the vote.

In addition to working for suffrage and engaging in good works, women during the nineteenth century on both sides of the Atlantic Ocean were interested in the very nature of womanhood. They debated fiercely what makes women different than men, and they discussed what all women desire. They also assumed



Memorial service for a sati victim, held in a grove. Traditionalists and extremists in India clash over the practice of sati (immolation of widows on their husbands' funeral pyres). Photo by Klaus Klostermaier.

that women of all classes and races are the same and that gender alone is the overriding difference in social constructions.

Women's concerns were much the same in both countries with minor exceptions. Women in the United States tended to claim some moral superiority because the United States was more democratic and equitable than Britain, but British reformers tartly pointed to the existence of slavery in many U.S. states.

By 1924 both groups had achieved suffrage (although women under age thirty did not gain the vote in Britain until 1928), opened employment for many women, and amended the most oppressive marriage laws. At this point many feminist groups turned to public health issues, especially birth control and expanded legal rights for women. No single issue, however, emerged to unite all women as suffrage had. Women seemed to be disappointed with the goals achieved and confused about future goals.

Neither country was more radical or more effective. The major discouragements to women seemed to stem from the absence of change after women were granted the vote. The majority of women in both countries

seemingly were not won over to reformist or radical platforms in women's issues. Despite changes in the law, men did not accept women as political and economic equals. The biggest disappointments for women were in the inability of feminist groups to redress the inequalities in marriage.

The drawbacks inherent in legal changes were clear when the Equal Rights Amendment failed to pass in the United States in 1923 and again during the last quarter of the twentieth century. The unlimited optimism of the Victorian era was squelched by the inability to achieve equal rights in the legal arena.

Political Variations: Latin America

Although Latin America is close to the United States in geographical terms, the differences in political, racial, and economic structures have influenced the development of different sorts of feminist concerns. In Latin America women's movements cannot be separated from the context of military authoritarianism and the struggle toward political freedom.

Many people do not realize that women in Latin American nations have been active in political



As the twentieth century approached, women in the military were increasingly permitted to serve in offensive land operations. These three women, German machine gunners, were captured by American troops during World War I.

movements in the past, and often those people who study Latin American politics discount the interaction of women with politics, but it was historically important.

Feminist newspapers played an important role in disseminating ideas as long ago as the nineteenth century in Brazil. Since the mid-twentieth century urban life has provided a backdrop for networks of neighborhood women agitating for better services and lower consumer prices. Women participated in strikes and joined political parties even before they had right to vote, which came much later than in the United States or in Britain; Ecuador was the first Latin American nation to grant women's suffrage in 1929, although it did not possess a liberal democratic tradition, and Colombia was the last Latin American nation to grant women's suffrage in 1957. The suffrage movement in Latin America produced uninspiring results. As in the West, it was led mainly by middle-class women, and it aimed to produce reform rather than radical social changes. Women's suffrage did not cause a significant change in Latin American societies in part because women who did vote supported the status quo and were subservient to the politically conservative Catholic Church. No large-scale shift in attitudes occurred in part because no concerted effort took place to join economic and educational change for women with the right to vote.

Because suffrage came so late and because it failed to institute real change in women's lives in Latin America, few people would have predicted the emergence during the 1970s of women's movements that were important in destabilizing military regimes. In addition to agitating politically, women's human rights groups, feminist groups, and organizations of poor urban women began to cooperate.

In Argentina, for example, women who previously had never involved themselves in politics and did not define themselves as feminists stepped onto the political stage to protest the loss of their husbands and family members, known as "the Disappeared"—people whom military regimes regarded as enemies. The attention that the women's testimony received from the press around the world affected military rule.

Other feminist groups were formed by women from leftist parties who were frustrated by the failure of the left to take women's issues seriously. They agitated for women's issues as well as for the end of military dictatorships.

By the late 1980s the most striking aspects of the women's movements in Latin America were the contributions the movements made in overthrowing military dictatorships and in reconstructing civil society. By the end of the twentieth century this experience in cooperation led many people to concentrate on issues of class and race; poor women developed the organizational skills to combat sharp cutbacks in state spending, and women's demonstrations forced political leaders to change course.

Postcolonialism and Culture: South Asia

South Asia shows that social justice and equality in family life cannot be culture free. Unlike women's movements in Euro-America, women's movements in India and surrounding countries have to negotiate ardent nationalism, divergent religious practices, secularism, and polarized political views to present an agenda directed toward change in women's lives.

In addition to confronting a multilingual and multicaste society, reformers can appear to oppose

The history of men's opposition to women's emancipation is more interesting perhaps than the story of that emancipation itself. • **Virginia Woolf (1882–1941)**

ancient practices. The complexity of a postcolonial society includes the danger that a platform that advocates modernization can be construed as conflicting with tradition. Reform that advocates the equal rights of women can be manipulated into appearing to be linked with the views held by the former colonial power.

In addition to confronting suspicion of reform, advocates of women's rights in south Asia must confront the tensions among major religions that have sharply conflicting positions. For example, Hindu traditionalists have supported sati (immolation of widows on their husbands' funeral pyres) in the face of feminist opposition. In the same vein Sikh extremists have continued to deny inheritance rights to women, and Muslims have resisted the granting of maintenance to divorced wives. All groups are suspicious of efforts by women to initiate reform and tend to oppose any reform as an erosion of religious tradition and power.

South Asian feminists face many complexities beyond simple changes in policy. Before independence many feminists believed that an independent nation would naturally bring with it equal opportunities for women. The decades after independence have demonstrated that the situation is far more complex, not least because women do not always share the same goals. Whatever the goals, south Asian feminists must maintain a clear distinction between themselves and Western feminists. This distinction is the only way to deflect accusations of sympathies with a colonial and imperial past.

Stereotypes and Diversity: Africa

The colonial past also influences many aspects of the present in Africa, including the perceptions of African women. People in the West often perceive of African women as victims or as ignorant simpletons who cannot manage new technologies, as victims of oppression rather than as agents of change. No typical African woman exists, of course, and this simplistic perception of a whole continent of women is misleading and counterproductive.

The largest difference between African women and other women in the world is that African women are frequently the primary economic providers for their households as farmers and traders. This complicated power structure challenges Western understandings of marriage and households as partnerships in which men are the main providers, and household funds are pooled. When women challenge the web of social relationships, as in south Asia, opponents appeal to custom and tradition as against "colonial" influences.

The education of girls is often an issue between advocates of gender equality and the resident power structure in Africa. Schools both strengthen social values about femininity and reinforce domesticity in girls. For example, nutrition education programs focus on how meager resources can be used to greatest effect, but if girls were encouraged to understand the causes of food scarcity, they might challenge policy. African governments frequently point to great improvements in education for girls and women by publishing statistics reflecting a strong commitment in education. Interpreting data published by governments is problematic, however, because statistics are notoriously unreliable in the developing world. Statistics often create the illusion of precision and certainty, but that illusion serves political ends by projecting a positive image while obscuring political indifference.

Even those African girls who are well educated often are not able to translate schooling into self-determination. Professional women sometimes find that because of social influences, their husbands make most of the decisions that affect their lives. More education might mean less control over one's life. No single generalization is possible.

African women are usually portrayed as a powerless group subject to poverty and ignorance, in contrast to Western women, who are portrayed as educated, modern, and free to make their own choices. These portrayals often lead to programs that reinforce patriarchal ideology and inequalities. African women have access to programs that stress women's health and reproductive issues. These programs are useful, but



emphasis on such issues recognizes unequal power relations in the family but does not address ways to remove gender stereotypes.

People in Africa should address women's problems in a multifaceted way. Local women need support from grassroots movements as well as recognition from international groups. African women are rarely asked to help design programs and strategies because standards for evaluation are frequently projections of Western analyses and models. African women must be asked to project their own goals for their own futures; they should be allowed to trust their own insights as the basis for resolving issues of gender equality.

Socialism and State Power

International politics as well as historical events often affect attitudes toward women today. Countries that have undergone radical political change demonstrate the interaction of the personal and the political. The rapid disintegration of a socialist or Communist political system does not mirror a parallel change in gender relations.

In socialist societies the view of women reflects that of the German political philosopher Karl Marx and the German socialist Friedrich Engels; that is, the subordination of women is just another aspect of class oppression. Engels believed that with the abolition of private property and the integration of women into work, women would gain economic independence and equality. The flaw in this construction is that male control of female sexuality and inheritance predates the existence of the bourgeois family and industrialization. In reality, in socialist societies the male political leadership often had much the same view of the role of women as did their bourgeois counterparts.

The notion of a large socialist family was quickly established as a desirable goal, and so abortion was abolished in the Soviet Union in 1936. The state encouraged women to remain primarily responsible for child care as well as to accept employment in the public arena. This Soviet model of women's dual role was

quickly adopted as the basis of state policy in Eastern Europe, and the needs of the state took precedence over those of women. Because women were primarily responsible for activities in the private sphere, they frequently received blame for social problems such as juvenile crime and alcoholism, which were not addressed by the state.

Under the socialist system radical measures were implemented on maternity leave and child care, but they were not progressive because parenthood was seen as the exclusive purview of women. Because of their heavy domestic duties, women were increasingly displaced in labor and political arenas. When we see this from a gendered perspective, this is not true reform.

These gender stereotypes and inequalities remained in effect during the postrevolutionary period, but little attention is given to this area because the greatest attention is given to the economic reforms. Just as the socialist system influenced by Marx and Engels did not bring true equality for women, we have no reason to suppose that a free market economy and democratic elections will change male dominance and female subordination. No single women's movement has emerged in Eastern Europe or in the nations of the former Soviet Union. The millions of ethnically and regionally disparate women would be unlikely to identify with a single movement, and little assistance is offered by the rest of the world, which is focused on political and economic issues.

Culture and Change: China

China presents an interesting amalgam of the gendered views of the socialist state but with distinctive regional and social peculiarities. Traditionally people in China viewed women as having a passive role in society, and this view was further complicated by the term *feminist*. People viewed feminism as a Western concept, hence a bourgeois concept to be avoided. The first women's emancipation movement in China came about as a result of state-initiated policy. In 1949, with the establishment of the People's Republic of China, the new socialist

The extension of women's rights is the basic principle of all social progress. • **Virginia Woolf (1882–1941)**

Chinese government decided to prohibit such oppressive customs as the binding of women's feet and prostitution. The official policy was to advocate full women's employment. Women were given the rights to education, the vote, and full employment. Because jobs were assigned, however, women were frequently channeled into inferior or powerless positions. This fact was not recognized because women's rights were seen as having been achieved through the efforts of the state rather than through the efforts of women themselves.

As was the case in the former Soviet Union, the People's Republic of China shaped gender relationships to suit the interests of central policy. Although massive changes were introduced during the 1950s, during the Cultural Revolution (1966–1976) the use of oppositional terms such as *right–wrong*, *correct–incorrect*, and *socialist–bourgeois* served to outline what was acceptable. No organization of women working for change could exist because under the rule of the Cultural Revolution, women already had equality.

Despite legislation, a large gap remained between women's legal status and their social status. Gender issues affected power relations between women and men in that, as in the former Soviet nations, the idea that women are mainly responsible for standards of morality and family order was presented as "scientific fact." This idea that nature subjects women to lives dominated by reproductive concerns permeates Chinese approaches to education and employment. At the same time, the state is not a gender-neutral domain of power. More than any other Chinese state activity, the imposition of family planning that allowed only one child per family has been represented in the United States, especially during the Reagan-Bush era, as the quintessence of Communist oppression.

Recent movements toward privatization and a market economy have brought no improvement in women's autonomy in China. When privatization began in 1977, the idea that emancipation came not from individual efforts but rather from the state remained firmly in place. Further difficulties were introduced

with the dissolution of the planned economy; now women have more difficulty in getting jobs because competition favors men, and women must resign when they have a child.

The experiences of 1995's Fourth World Conference on Women held in Beijing provide a lesson in the cultural differences in women's movements. The Chinese women's movement that emerged from the Fourth World Conference is characterized by groups who are interested in promoting social change rather than depending on the Chinese state to improve the conditions of women. The groups and their tactics, however, are interesting reflections of the Chinese approach. No mass membership groups with demonstrations and organized displays exist as in the West, but rather the Chinese movement focuses more on service and voluntary work. Many people concentrate on scholarly work in women's studies centers at universities. Such groups are careful not to impinge upon state authority but instead to provide assistance to women or to increase knowledge. They concentrate on issues that are not addressed by the state. In this way the state recognizes that certain types of social movements are not a threat to its power.

The women's groups present issues of particular interest such as reproductive health, domestic violence, and sexual harassment as being global in nature. This presentation removes any critical tone that could be applied to the Chinese power structure, and so the power structure is more willing to tolerate steps to improve conditions in these areas. Work by women on reforms may be beneficial even to the state because the state is unwilling to pursue certain activities.

This peculiarly Chinese resolution of the dilemma of a women's movement provides a counterexample to the stereotype of a rigid, inflexible Chinese Communist regime. Chinese women are able to work toward reform and still appear cooperative rather than confrontational. The use of negotiation shows that gender attitudes and methods of reform are deeply rooted in culture and cannot be viewed as universal in nature.

Gender Past and Future

Women around the globe are divided by their histories, by their class or income levels, by the political basis of their nation, by their religious beliefs, and by their social expectations. The one fundamental similarity, however, in each culture is that gender provides a basis for discrimination and deprivation. We cannot prescribe one plan of action to improve the lot of women everywhere, but the recognition that gender is a crucial aspect in the consideration of political and economic reform is an essential beginning. Solutions to gender inequities are best constructed by women working together within a culture to negotiate change that is acceptable to the dominant power structure rather than presenting a universal program that may cause unintended results. Women's emancipation movements are global in scope because gender disparities occur everywhere, but the problems suffered and solutions undertaken vary widely. Gender may be universal, but no universal solution to gender inequities exists.

Cynthia CURRAN

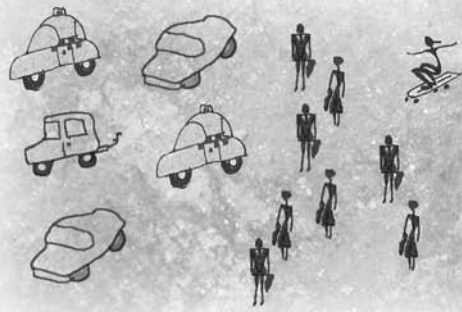
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See also Women's and Gender History; Women's Reproductive Rights Movements; Women's Suffrage Movements

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Women's Reproductive Rights Movements

The issue of women's reproductive rights came to the fore in the twentieth century. Early feminists demanded access to gynecological and contraceptive information; the movement later sought to give women the ability to control their own bodies and make decisions about contraceptives and pregnancy. Feminists and activists argue such rights will give women full participation, power, and status in society.

In 1968 the United Nations International Human Rights Conference overwhelmingly declared that reproductive rights should be acknowledged as basic human rights. This conclusion was based on the rationale that a woman's right to control her own body is an expression of free will. The reality is that for women in many countries, reproductive choice is in the hands of husbands or governments. What should be a woman's most private experience is in fact controlled and shaped by economic, political, and social institutions. Therefore, feminists around the world, irrespective of their ideological and political differences, are united in their desire to see women granted reproductive rights. It is an essential precondition for women's full participation in society.

What Are Reproductive Rights?

Reproductive rights comprise the right to decide timing and spacing of children, the right to access to gynecological and contraceptive information, the freedom to choose from different birth control methods, and the right to terminate a pregnancy if desired. It is an important feminist agenda because these rights are irrevocably entwined with women's

political, economic, and social status in society. In the United States and western Europe, where women are able to control their own fertility, they enjoy, relatively speaking, a higher status in society, whereas in some countries in the developing world, such as Bangladesh, Nepal, or the Central African Republic, where women are denied access to basic information, they are in a disadvantageous state economically, socially, and politically. Lack of information results in uninformed wives and mothers, increased instances of reproductive illnesses, and high maternal and infant mortality rates. Therefore, feminists are united in the view that women around the world should be able to control their own bodies and be granted the right to choose contraceptives and make informed choices about terminating a pregnancy.

Choice before the Twentieth Century

For centuries women across the globe have used vaginal pessaries, herbal douches, the rhythm method, extended breast-feeding, and herbal concoctions to control their fertility and limit births. In strictly patriarchal countries, where boys were preferred to girls, female infanticide was practiced to limit the female population or maintain a desired sex ratio. Trying to restrict fertility is not new; what is new is the concerted effort by feminists to grant women the right to control the decision of whether or not to have children as well as the frequency and number of children, as this has a great impact on their bodies and lives. Reproductive choice, feminists argue, should be in the hands of women and not husbands or governments.

It was in the midst of the momentous changes fostered by the Industrial Revolution of 1760s that



Birth Control Congress, Holland, 1910. Margaret Sanger's early advocacy of reproductive rights in America included her pamphlet *Dutch Methods of Birth Control* published in 1915. New York Public Library.

the idea of granting women reproductive rights first surfaced. As increased numbers of women were employed in factories, where pregnancy and childbirth would have an adverse effect on their employability, they turned to unreliable birth control and unsafe abortion methods in an effort to control their fertility. In the United States and Great Britain, the common perception was that abortion was not a crime until "quickening" (when the fetus begins moving). The Catholic Church at this time did not have a strong stand on the question of abortion.

In the 1870s, however, as the use of birth control and abortions grew, three groups—male medical practitioners, industrialists, and eugenicists—coalesced and called for outlawing abortion and establishing considerable male control over women's fertility. Male physicians wanted to monopolize women's health by encouraging the rapid medicalization of childbirth. This resulted in marginalizing female midwives.

Industrialists wanted to increase their productivity and profits by employing more women and children. Eugenicists argued for the rapid demographic growth of peoples of European descent at the expense of "others." The United States government responded with the Comstock Act of 1873, which restricted distribution of any material considered obscene; information on abortion and birth control came under the purview of this restrictive law. As a consequence, women were denied gynecological and contraceptive information.

From 1900 to the 1950s

The beginnings of the twentieth century coincided with the first battle for reproductive rights in the form of demands for access to gynecological and contraceptive information. U.S. activists such as Margaret Sanger (1879–1966) and the socialist Emma Goldman



Demonstrators protest the candidacy of anti-abortion advocate Ellen McCormack at the Democratic National Convention, New York City, 14 July 1976.

Photo by Warren K. Leffler, Library of Congress.

(1869–1940) and British activists such as Marie Stopes (1880–1938) held public forums to advocate that reproductive rights were crucial to improving women's status in society. They argued that working-class and poor women be allowed access to information. Despite being publicly ridiculed, harassed, and arrested under the Comstock Act, Sanger and Goldman successfully overturned it. Sanger founded the American Birth Control League, the forerunner of today's Planned Parenthood. In Great Britain, Marie Stopes continued to campaign for more government funding to open clinics that would provide women with information that would help them to make informed choices.

But efforts to open birth control clinics both in the United States and Europe met with considerable resistance from the government as well as the church, especially during the post–World War I years. A drastic

decline in birth rates prompted the United States and most European governments to attempt to control women's fertility by encouraging births. Women were rewarded for producing many children, and indeed, during the decades following World War I, women's fertility was linked to national vitality and prestige. Most European governments introduced comprehensive welfare programs to aid and encourage parenthood. At the same time, eugenicists lobbied hard to influence Western governments to control fertility by restricting the birthrate among groups deemed "socially inappropriate." Abortions and involuntary sterilizations were performed clandestinely, often in unsanitary conditions, on women belonging to these groups.

Abortion Rights

The 1960s were a major watershed in the reproductive rights movement. Women on both sides of the Atlantic discovered feminist theories linking reproductive and sexual freedom to improving the quality of their lives. They began to question their traditional roles as wives and mothers and articulated their need to control their own bodies in order to be liberated. The invention of the birth control pill (approved by the U.S. Food and Drug Administration in 1960) was a major step in that direction, as it allowed women the freedom to be sexually active without the fear of becoming pregnant, if they so chose.

In the United States, the women's movement of the 1960s linked reproductive rights to political, social, and economic power for women in society. Feminists demanded easy access to contraceptive and gynecological information. They also exposed the hazardous conditions under which illegal abortions were performed, primarily on the poor and women of color. They stated that abortions were conducted without anesthesia and frequently in unsanitary conditions that seriously jeopardized the health of the mother.

Therefore, by 1970, the abortion issue emerged as a central issue in the women's reproductive rights movement in the United States. While moderate

and liberal feminists argued for reforms in outdated abortion laws, the radicals wanted nothing less than repeal of all abortion laws and the lifting of the government's and the medical establishment's control over abortion. Their slogan was "the personal is political," and they vehemently argued that all women, irrespective of race, ethnicity, and class, should have the right to control their bodies and to choose to have an abortion.

The increased politicization of the abortion issue affected public opinion. By 1970 more and more Americans believed that abortion was a private matter and that a woman should have the right to decide what was best for her. In 1973, the U.S. Supreme Court's *Roe v. Wade* legislation granted a woman and her doctor the right to choose an abortion within the first three months of pregnancy. This was an important step toward legalizing abortion, although the right to abortion continues to be contested in the United States to this day.

Following the example of the United States, women activists across the globe are lobbying to legalize abortion. According to the United Nations, around 46 percent of women live in countries such as Germany, India, Argentina, and Saudi Arabia, where abortion is available only under certain circumstances, such as when the pregnancy was caused by incest or rape or when either the mother's health or fetal health is impaired. Around 38 percent of women live in countries such as South Africa, Norway, Holland or the former Eastern European countries, where abortion is available upon request. In other countries, such as Chile, Malta, and Andorra, abortion is strictly forbidden.

Common Birth Control Methods

Making informed choices about birth control is another crucial focus of the reproductive rights movement. Activists for women's reproductive rights argue that as it is the woman whose health is affected by pregnancy, a woman should be the one to make the decision regarding which birth control method to adopt. In many countries women's birth control options are not only limited, but governments,



Women in the Netherlands in the early 1970s had a novel option for storing (and being reminded to take) their birth control pills. The alarm pill box could be set to ring at 24-hour intervals, at which time a red light would flash and a drawer pop open; when the pill was removed a green light would come on and the drawer snap shut. Nationaal Archief, Netherlands.

pharmaceutical companies, and husbands often impose their views. Generally speaking, there are four birth control methods: barrier methods, hormonal methods, mechanical methods, and sterilization. The first method comprises diaphragms, condoms, and the cervical cap. These contraceptives provide effective means of preventing pregnancy, and the condom has the added benefit of protecting against sexually transmitted diseases. Hormonal methods consist of birth control pills, Norplant, and Depo-Provera. The interuterine device (IUD) is a mechanical method of birth control that is believed to work by preventing an egg from implanting in the uterine wall. There are also interuterine systems, which are essentially

IUDs that dispense the hormones that prevent pregnancy. Sterilization involves a procedure called tubal ligation, in which the fallopian tubes are tied, thereby preventing eggs and sperm from meeting, and, consequently, pregnancy. Many governments use tubal ligations to forcibly restrict population growth among certain groups.

Population Control Programs

Since the mid-1990s, the reproductive rights movement has focused on population control programs. Despite the existence of the U.N. Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), which admonishes governments against implementing aggressive population control programs to promote national interests, most countries in the developing world have such programs, often at the expense of women's health. Governments may be either pro-natalist or anti-natalist. Feminists are critical of both groups, as both restrict women's choices, though with opposite goals.

Pro-natalist governments want to increase their nations population; they typically outlaw abortion and contraception and seek to gain complete control over women's fertility. Prolonged warfare, loss in productivity, or even, in some instances, increasing numbers of people of racial, ethnic, or religious groups that the government considers undesirable have all been known to provoke a pro-natalist reaction. For example, in 1966 the former Romanian dictator Nicolae Ceausecu banned abortion and encouraged women to produce as many children as possible because he wanted to increase the national productivity.

Women activists also criticize anti-natalist governments that implement coercive and selective policies. Communist China's one-child policy to restrict population growth is an example of coercive anti-natalism. In such cases the government's desire to control population growth often comes at the expense of women's health. The United States was guilty of anti-natalism in the early 1950s and 1960s, when federal funds were used to perform forced sterilization on Chicano, black, Native American, and Puerto Rican women.

It is paradoxical that while women are responsible for producing the future generations, their right to control their own bodies is limited by public and private forces. Reproductive rights, with all their ramifications, are a reflection and determinant of women's equality in society.

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See also Birth Control; Human Rights

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In the nineteenth century, large numbers of women began to advocate for participation and legal protection in matters affecting their daily lives. By mid-century, this struggle had become increasingly political, and women's suffrage—the right to vote—became central in this movement. New Zealand was the first country to grant women suffrage in 1893.

Women around the world have fought for the right to vote (suffrage) for centuries. Women have sought to participate actively in political life and to have a voice in shaping the contours of their societies. By the 1990s the vast majority of women throughout the world had gained the right to vote in local and national elections, and in many countries they have achieved high office as elected politicians. As of early 2010, women still can't vote (but men can) in Saudi Arabia and the United Arab Emirates.

Background

During the nineteenth century, women in many parts of the world began working to achieve such personal liberties as the right to hold property and the right to divorce, with the goal being to obtain protection under the law and legal recourse in matters related to their daily lives. By the mid-nineteenth century, women's movements became increasingly political, and the centerpiece of the various movements was women's suffrage. From the latter part of the nineteenth century through the twentieth century women made great strides in obtaining human and political rights, including voting rights. New Zealand (1893),

Australia (1902), Finland (1906), Norway (1913), Great Britain (1918), Russia (1917), Germany (1919), and the United States (1920) were among the first nations to grant women the vote.

During the early years of the various women's movements, thousands of women marched through the streets making themselves heard, flooded the legislatures with petitions for the vote, and continually appealed to male politicians to support the female franchise. Historians, political scientists, and sociologists



Susan B. Anthony, co-founder with Elizabeth Cady Stanton of the American Equal Rights Association, an organization for white and black women and men dedicated to the goal of universal suffrage.



Elizabeth Cady Stanton was a major force in the First Women's Rights Convention at Seneca Falls, New York, in 1848.

have argued that cultural transformations brought about through rapid industrialization, war, and other social upheavals contributed to shifts in political participation and the shaping of a political identity for women globally. Some have argued that nations that have undergone restructuring due to decolonization or war have become more progressive, with the most democratic of these nations gradually implementing more egalitarian policies in government that recognize women's value as voters and political leaders.

Revolution and Suffrage

While over time women have been successful in gaining the vote, that right has been hard won. Although

women organized for broader gender rights, the majority of the leaders of women's rights movements from World War I through the postcolonial period realized the franchise was necessary if they were to have power and promote positive change. In 1945, in post-World War II Japan, about 67 percent of the newly enfranchised women voters turned out to vote, and by the 1970s *tatakau onnatachi* ("fighting women") were fighting against sexist laws, seeking wage equity, and establishing themselves as politically informed voters.

Women have often entered the suffrage arena through participating in national struggles for independence, as was the case for women in Egypt, Vietnam, and South Africa. In those countries, women and men worked together toward national independence, and in that context nationalism promoted women's suffrage and allowed for women's voting rights. For example in Egypt, the nationalists who worked toward building a modern nation-state independent of Great Britain saw improvements in women's restrictive lives as integral to their program. Feminist activists became the center of the anticolonial movement. Egyptian women began to push for women's rights, including the vote, in earnest after World War II, and liberal (male) nationalists supported the early efforts of women like Bahithat Al Badiya, who pushed a feminist political agenda that called for equality and opportunity for Egyptian women. By the 1950s, however, Islamic traditionalists were mounting resistance to women's suffrage, and some of the liberal nationalists made concessions to right-wing traditionalists. In spite of traditionalists' resistance, Egyptian women gained the vote in 1956, and during the same year a number of women became minor elected officials. In 1979, a presidential decree established that thirty seats in Egypt's parliament be reserved for women; the president also has the power to appoint a number of representatives, a proportion of whom must be women, to parliament. Unfortunately, an upsurge in Islamic fundamentalism has led to constitutional suppression of women's public and political space.



Suffrage Parade, New York City, 6 May 1912. Many suffragettes in the early twentieth century embraced the parade as a way of publicizing their cause; even negative media coverage helped spread the word.

In Vietnam, like Egypt, women supported anticolonial revolutionaries during the pre-World War II era, and their struggles eventually led to the defeat of French military forces in 1954, though it was more than twenty years before Vietnam, divided in 1954, was reunited under the Communists. In Communist Vietnam, socialist leadership paved the way for Vietnamese women's activism in political spaces. Women's newly formed public identities as warriors and liberators merged with their private identities as mothers and keepers of national heritage. Scholars have argued that social revolution has historically promoted change in class relations and in the relative power of the state. Histories of countries such as Vietnam, however, suggest that vast continuities between pre- and postrevolutionary societies remained intact. Although women were encouraged to participate in revolution, few have made use of their right to vote or hold political office after the reunification of the country in 1976. As Vietnamese nationalists gained power, they assumed traditional patriarchal power and dismissed women's revolutionary activities and political gains as part and parcel to the climate of national revolt; thus, as the generation of women who had participated in the revolution died out, so did women's hope for political rights.

In South Africa under apartheid, women have had to bear the burden of the double-edged sword of racism and sexism in gaining voting rights. White South African women won the vote in 1930, women of Asian or mixed ethnic extraction ("colored") gained the vote in 1984, and black South Africans did not receive the vote until 1994, after apartheid was dismantled. Through the 1950s blacks organized through the African National Congress (ANC), led by Nelson Mandela. Gertrude Shope, an ANC member and chair of one branch of the Federation of South African Women (FEDSAW), organized black women to fight for equality and voting rights. White political leaders acted quickly to suppress the ANC and other organizations; Mandela was imprisoned and Shope went into exile, where she became the secretary to the head of the ANC's Women's Section. During the 1970s resistance resurfaced; the numbers of protestors were larger and included women, who wanted to end the continuous oppression in their daily lives through the achieving of voting and political rights. In 1991, as apartheid was beginning to crumble, Shope was elected president of the ANC's Women's League. In South Africa's first free elections in 1994, approximately 25 percent of South Africa's legislative seats were won by women. Despite these gains, persistent poverty and social ills, most

Cautious, careful people, always casting about to preserve their reputation and social standing, never can bring about reform. • Susan Brownell Anthony (1820–1906)

notably the AIDS epidemic, continue to negatively impact the lives of South Africa's women.

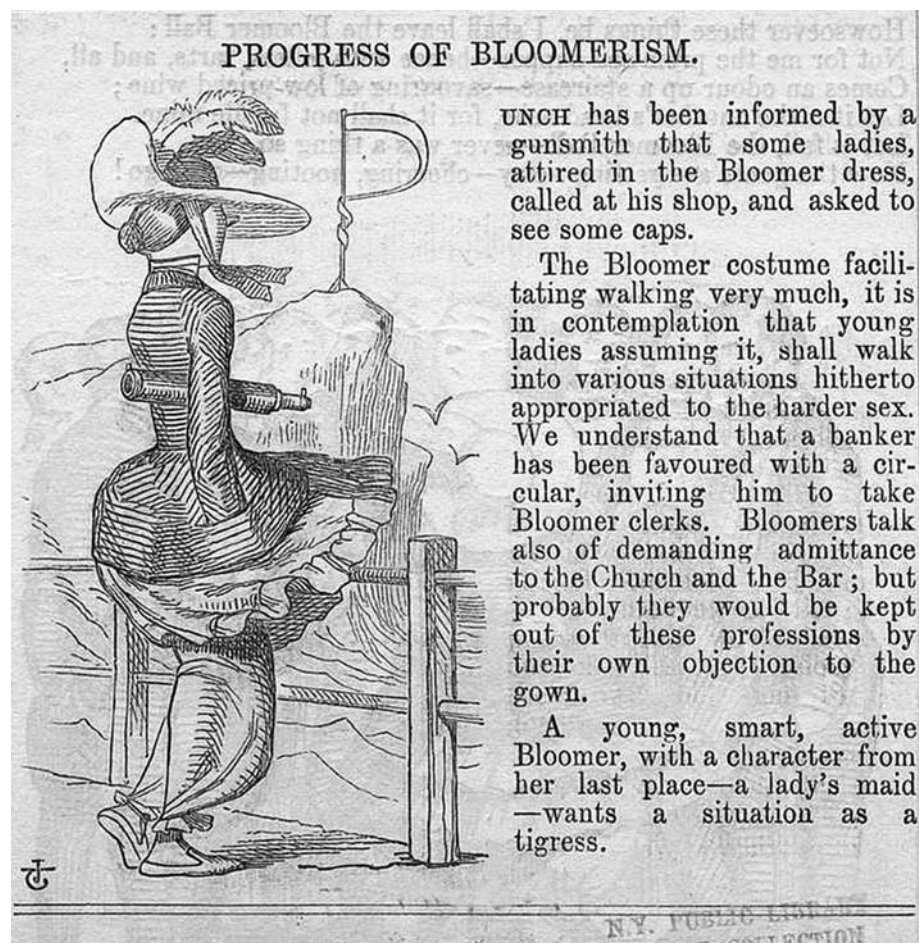
Europe and North America

Women from Europe and North America have had fewer difficulties than women from other parts of the world in obtaining the franchise, for reasons that include more liberal political policies in Europe and North America, less restrictive religious traditions, and women's emergence into the public sphere as wage earners. Although American and British women have been considered leaders in worldwide women's suffrage, women's political participation in the United States is rather lackluster, with just 55 percent voting in primary elections in 1992 and women holding just

17 percent of U.S. legislative seats. Among European nations Germany has a good track record, having granted women the vote in 1919 and with just over 73 percent of women voting by 1990 and 28 percent of legislative seats held by women.

Outlook for Women's Political Activism

The goal of most feminists in liberal-minded countries is to encourage women around the globe to participate in the voting process, to increase the number of women political officeholders, to create and pass laws that protect women and children against violence, to make the public aware of gender oppression, and to further the mission of equality for all citizens. Given the dedication



An illustration from *Punch Magazine* in 1851 warns that bloomers will allow women to “walk into situations hitherto appropriated to the harder sex.”



The arrest of a suffragette in London, between 1910 and 1915. George Grantham Bain Collection, Library of Congress.

of women in even the harshest situations and the most repressive of societies to work toward those ends, we can expect further advances in the years to come.

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See also Women's Emancipation Movements

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World Blocs— First, Second, Third, and Fourth

The Cold War clearly divided the world into two blocs: the First World (the United States and western Europe) and the Second World (the USSR and its allies). By the mid-1950s, some of the nonaligned, developing nations were classified as in yet another bloc arbitrarily named the Third World. The Fourth World has become a label for the world's stateless and powerless indigenous peoples.

In March 1946 the former British prime minister Winston Churchill declared that an “iron curtain” had descended across Europe, from the Baltic to the Adriatic. The curtain had divided the former allies into two distinct blocs, Churchill said during a long speech in the United States, called the First and Second Worlds. The First World included states, notably the United States and the nations of western Europe, that pledged themselves to some version of partly regulated market capitalism and that would, in 1949, form the North Atlantic Treaty Organization (NATO), a military pact against the Second World.

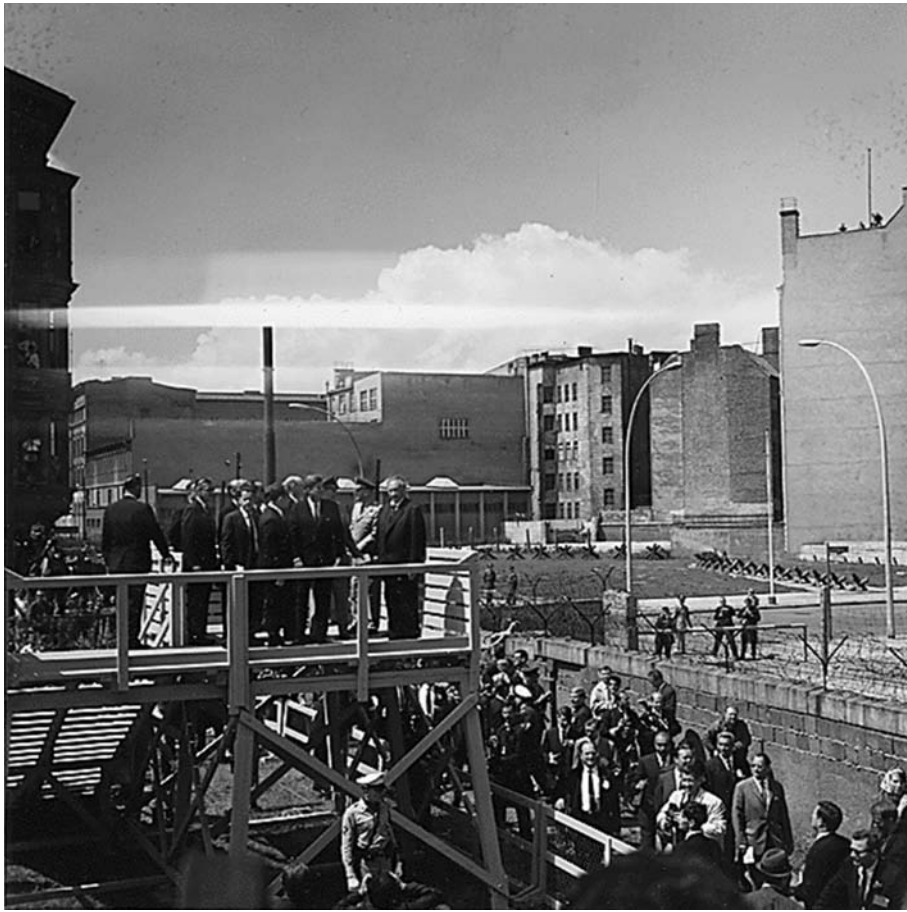
The Second World rejected market capitalism for some version of socialist planning, and it generally worked in collusion with the largest socialist state, the Soviet Union. “Warsaw, Berlin, Prague, Vienna, Budapest, Belgrade, Bucharest and Sofia: all these famous cities and the populations around them,” Churchill told students at Westminster College in Missouri, “lie in what I must call the Soviet sphere, and all are subject, in one form or another, not only to Soviet influence but to a very high and in some cases increasing measure of control from Moscow” (Churchill 1945). In answer to the formation of NATO in 1949, the USSR created the Warsaw Pact in 1955, a military

agreement with Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania.

The Cold War

The First and Second worlds openly fell out when U.S. president Harry Truman announced his support for anti-Communist forces in Turkey and Greece (1946), when the CIA helped the Conservatives defeat the popular Communists in the Italian and French elections of 1947, when the Soviet Union forced the hand of the Eastern European states into its orbit, and when the animosity attained dramatic proportions during the Second World's blockade of Berlin beginning in June 1948. In this melee, Bernard Baruch, an adviser to Truman, used the term *Cold War* to describe the conflict, and the columnist Walter Lippman made the term widely known. The Cold War defines how most people see the period from 1946 to the fall of the Soviet Union in 1991: the East-West conflict, intensified by nuclear weapons, dominated the stage for this crucial fifty-year period.

The phrase *East-West conflict* distorts the history of the Cold War, however, because it makes it seem as if the First and Second Worlds confronted each other in a condition of equality. In an insightful article from 1968, the Swedish sociologist Göran Therborn described the Cold War as an unequal conflict that both sides presented and experienced as being equal. The Soviet Union and the United States portrayed each other as equivalent adversaries, although the former had an economic base that was far inferior to the latter. Despite the great advances of the Soviet regime in the development of the various republics, the Soviet Union began its



President John F. Kennedy, among others, on a platform overlooking the Berlin Wall in 1963, the height of the Cold War between the First and Second Worlds. National Archives.

history with a battered feudal economy that was soon ravished by a civil war and then by the ferocious assaults of the Nazi war machine. In 1941 both the United States and the Soviet Union had populations of about 130 million, but whereas the United States lost upwards of 400,000 troops in the war, the Soviets lost between 20 and 30 million troops and civilians. World War II devastated the Soviet Union's economy, its population, and its capacity to rebuild itself. Furthermore, the imperatives of rapid development tarnished the ideals of Soviet society, with most internal freedoms being sacrificed in the building of its productive base.

The dominant classes in the First World used the shortages and repression in the Soviet Union as an instructive tool to wield over the heads of their own working classes, and so on both economic and political grounds the First World had advantages over the Second. Therborn further argued that an unequal conflict that is fought as equal, such as the Cold War, only redoubles the inequality.

The Third World

But the First and Second Worlds only accounted for about a third of the planet's people. What of the two-thirds that remained outside the East-West circles? By the mid-1950s, most of the planet that had been held in one way or another by colonial powers had gained or were struggling to gain their independence. These new nations defined themselves outside the Cold War division. In 1952 a French demographer, Albert Sauvy, coined the term *Third World* to refer to this bloc of nations. He explicitly used the term to evoke the French Revolution, an important inspiration for the decolonization process. Prior to 1789, the French monarchy divided its counselors into the First Estate (clergy) and the Second Estate (aristocracy), with a Third Estate being for the bourgeoisie. During the tumult of the revolution, the Third Estate fashioned itself as the National Assembly and invited the totality of the population to be sovereign over it. In the same way, Sauvy was suggesting, the Third World would



Gedung Merdeka
(Independence Building) in Bandung, Indonesia, during the Asia–Africa Conference in 1955; twenty-nine Third World nations gathered to propose an alternative to the Cold War's bipolar divisions.

speak its mind, find the ground for unity, and take its place in the dynamic of world affairs. This was the enlightened promise of the Third World.

At Bandung, Indonesia, in 1955, twenty-nine of these Third World nations gathered to constitute an alternative to the Cold War's bipolar divisions. They demanded a world of peaceful coexistence, free of colonialism and injustice, in which economic cooperation and development topped the agenda, and in which political and cultural freedom had a priority over the rights of corporations. The Bandung conference, for all its divisions between pro- and anti-Communist delegates, provided a distinct voice in world affairs, one that refused to accede to the terrors of the Cold War and the demands of one or the other superpower. The Third World rejected the term *neutralist* because it smacked of renunciation; they favored terms such as *nonaligned* to indicate that they supported dialogue and debate without the threat of war as a means to enable the planet to redeem the promises of modernity.

The Third World's efforts nurtured and one might even say *produced* the United Nations. At the U.N.'s founding conference in San Francisco (1945), the Latin American delegates insisted upon a comprehensive section on human rights for the charter. They fought hard to get statements on education, work, health care, and social security. In London, some months later, at the founding conference of the United Nations Education, Scientific

and Cultural Organization (UNESCO), the Third World delegates, led by India and the Arab nations, successfully fought to have the organization forge a strong social-justice agenda. Within the U.N., the Afro-Asian-Arab (and later Latin American) group offered an important measure of balance in the General Assembly in debates on international security and the crises of the Cold War. In forums such as the U.N., at Bandung, and in the nonaligned conferences (from 1961 onward), the Third World constantly stressed the importance of nuclear disarmament. The Third World nations understood that the nuclear bias within the Security Council meant that the U.N. had an institutional bias against nuclear disarmament, which is why they fought to revise the membership rules for the Security Council (and its veto system). Finally, it was pressure from the Third World through its Group of 77 that provided the United Nations with an agenda for social and economic development (the U.N. Conference on Trade and Development), for a critique of transnational corporations (the U.N. Center for Transnational Corporations), for international policy on food insecurity (the Food and Agricultural Organization), and for other such matters. The Third World pushed on these lines and helped to forge the multilateral institutions that are so much a part of our modern world.

Like the First and Second Worlds, the Third World was not so much a geographical entity as a political



This photo, titled *Age of Innocence? An Afghan Refugee Porter*, evokes the displaced and impoverished populations that characterize the Fourth World. Photo by Nasir Khan.

one. To use the term *Third World* to refer to poverty and corruption is a distortion of the emergence of the term among the anticolonial and anti-imperialist forces of the 1950s and the 1960s. That the Third World agenda did not succeed has as much to do with the recalcitrance of the first two worlds and the unequal international finance system that favored the former colonial powers (mainly in the First World) as it does with the various internal problems of the countries that saw themselves as part of the Third World. A lack of investment funds, a lack of land reform, a lack of institutional probity, a failure to deal with internal power dynamics—all these were factors in the demise of the political project of the Third World. As the Third World began to founder in the 1970s, many of its countries welcomed investment funds from international lending agencies such as the International Monetary Fund and the World Bank. These changes

led to the end of the state-centered development and rights agenda of the Third World.

The Fourth World

In the 1950s, before the Third World ideals collapsed, partisans of those who did not stand to benefit from its agenda had already begun to speak of a Fourth World. In 1957 a Catholic priest, Joseph Wrensinski, convened a gathering in Paris entitled *Aide à Toute Détresse* (Aid to All Distress), or ATD. Like Sauvy, Wrensinski drew from the French Revolution, whose Fourth Estate, outside the government system, represented all those who languished in poverty. For Wrensinski and the ATD Fourth World movement that he created, the Fourth World represented those without power and means who lived in all parts of the planet. In 1974 Chief George Manuel of the Shuswap peoples in British Columbia, Canada, wrote an important book entitled *The Fourth World*, in which he defined the Fourth World as the indigenous peoples of the world, who no longer had the rights to their own lands and those lands' riches. Manuel's 12 million indigenous people around the world overlapped with, but were not identical to, Wrensinski's international impoverished. Manuel added the crucial dynamic of aboriginality to the discussion to ensure that the millions who had been overrun by colonialism and by nationalism would not be lost in the planning process for modernity.

Subcomandante Marcos of the Zapatista Army for National Liberation (EZLN), active in the impoverished state of Chiapas in Mexico, uses the term "Fourth World War" to describe the condition of the Fourth World. The Third World War was the Cold War, which lasted from 1946 to 1990. After that, Marcos argues, there were no checks on neoliberalism's appropriation of all the resources around the planet that had been held in trust as public goods or else by indigenous peoples in reserved areas. With the fall of Communism, neoliberal forces want to open up every resource to profit. This Fourth World War is not a war between nations, but a war of corporations against people.

“For neoliberalism,” Marcos said in a 1999 speech, “everything is merchandise, it is sold, it is exploited. And these indigenous come along and say no, that the land is mother, it is the repository of the culture, and that history lives there, and the dead live there. Absolutely absurd things that cannot be entered on any computer and which are not listed on a stock exchange. And there is no way to convince them to go back to being good, to learn to think properly. They just don’t want to. They even rose up in arms” (Marcos 2003). The EZLN uprising in Chiapas in 1994, as the North American Free Trade Agreement came into effect, provided the first major salvo against the suppression of the Fourth World. But it is not alone. North of Chiapas, at Cancún, when the international community met in 2003 to define the international trade rules, they had to deal with twelve former Third World nations (the G-12) led by Egypt, India, Brazil, and South Africa, who wanted a more equitable system, one that would be favorable not only to the former Third World, but also to the Fourth World within.

Since the Four Worlds’ framework is a political theory, the definitions are political and contested, and its future cannot be left to the cold calculations of analysis. We shall have to see if the Fourth World develops any traction, if the Third World reemerges, if the First World is able to hold its fragile alliance

together. The Second World has disappeared, but it too may reappear in another guise.

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See also Cold War; North Atlantic Treaty Organization (NATO)

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World History, Writing of

World history is one of the oldest, most persistent, and most pliable forms of history writing. It can best be characterized by multiplicity: in the use of data from different times and places; in the blending of methods from a broad range of disciplines; in the diverse backgrounds, assumptions, and world orders of authors; and in the mixture of narrative styles and organizational concepts.

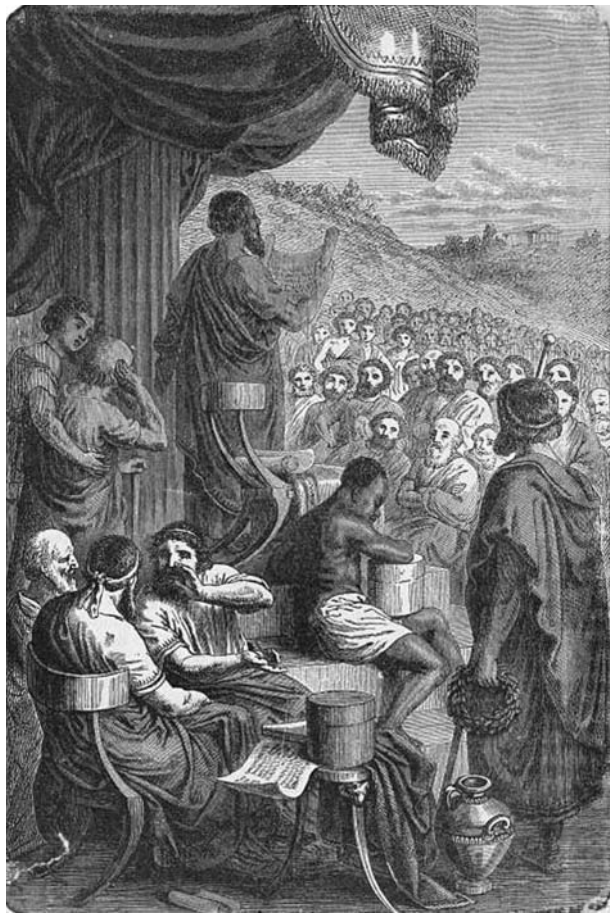
No simple methodological definition of *world history* is possible, for world histories vary widely in style, structure, and scope. Furthermore, a wide assortment of labels have been used to describe them, including “universal history,” “ecumenical history,” “regional history,” “comparative history,” “world systems history,” “macrohistory,” “transnational history,” “big history,” and the “new world” and “new global” histories. Despite terminological differences, however, world histories share the purpose of offering a construction of and thus a guide to a meaningful “world”—a “realm or domain *taken for* an entire meaningful system of existence or activity”—by historians or people in the past (Hughes-Warrington 2004, 4). Thus in this sense *all* histories are world histories. Where histories differ is in the degree to which the purpose of world construction is explicit.

Origins and Ancient Universal Histories

Herodotus (c. 484–430/420 BCE), commonly described as the “father of history,” is also credited for recognizing that history can be a means for understanding the world. In his *Histories*, Herodotus

delimited the military and political history of the Greeks in part by discrimination from barbarian “others,” and thus established the link between world history writing and actual and desired world orders. Studies of the field typically begin at a later point, however, with the emergence of the genre of “universal history.” “Universal history” has at least four meanings. It denotes, first, a comprehensive and perhaps also unified history of the known world or universe; second, a history that illuminates truths, ideals, or principles that are thought to belong to the whole world; third, a history of the world unified by the workings of a single mind; and fourth, a history of the world that has passed down through an unbroken line of transmission.

Universal history is conventionally thought to have emerged with the Greek writer Ephorus (405–330 BCE) and the climate of cosmopolitanism engendered by the conquests of Alexander of Macedon (Alexander the Great, 356–323 BCE). Raoul Mortley (1996) has also tried to demonstrate the influence of Aristotelian philosophy on the emergence of the genre, but the survival of less than 5 percent of Hellenistic literature makes the formulation of general explanations difficult. Additionally, it is not always clear whether extant histories might have been parts of universal histories: for example, commentators have argued that the *Anabasis Alexandri* and *Indica* of the Roman historian Arrian (c. 92–c. 180 CE) were originally united. Even José Miguel Alonso-Núñez’s more inclusive description of the first universal historians as those who dealt “with the history of mankind from the earliest times, and in all parts of the world known to them” is problematic, because it masks the contribution of those—particularly women—who



Heinrich Leutemann, *Herodotus Reading His History to the Assembled Greeks* (c. 1885). Herodotus, the fifth-century BCE Greek historian, established a methodology for writing history that is still recognized today.

composed biographical catalogues (Alonso-Núñez 1990, 197). While not exhaustive in time or space, biographical catalogues were designed to illuminate universal social, moral, or political principles.

Any history of the field must also take into account the rich tradition of Chinese and Islamic universal history writing, which dates from at least the third century BCE and the ninth century CE respectively. It is likely, too, that the genre of universal history has a relationship with both oral and written creation or initiation stories told by peoples around the world since the foraging era. Universal history, and consequently world history, are thus not simply Western documentary forms bestowed upon the world through diffusion.

Ancient universal history writing flourished after campaigns of political expansion, the advent of

standardized systems of chronology, and the spread of monotheistic religions such as Christianity and Islam. Writers followed no single template, and their works varied widely in scope, structure, and world vision. A particular view of universal history might be adopted for a host of reasons, both intellectual and pragmatic. Polybius (c. 203–120 BCE) and Diodorus of Sicily (c. 90–21 BCE), for instance, agreed that the truth of history was to be gleaned by treating it as a connected whole, but whereas Polybius's decision was based on an observation of the spread of Roman power, Diodorus assumed the existence of a universal human nature.

Variations were also evident across cultural and religious groups. For example, as viewed by Eusebius of Caesarea (c. 263–339 CE), St. Augustine of Hippo (354–430), Paulus Orosius (fl. 414–417), and Bishop Otto of Freising (c. 1111–1158), God's work in the world and the victory of Christianity were to be narrated through a seven-age framework that had been adapted from Jewish works like Josephus ben Matthias's *Jewish Antiquities* (93 CE). Islamic writers like Abu Ja'far al-Tabari (c. 839–923) also saw universal history as structured through successive ages, though more commonly three than seven, and infused their accounts of events with predictions of future judgment. Furthermore, these accounts derived their status as universal histories in part because of their construction out of *isnads*: unbroken chains of transmission. For many Islamic writers of the Abbasid dynasty (749/750–1258), universal history thus entailed both chronological and historiographical continuity. Exceptions like Abu Al-husayn 'ali ibn Al-husayn Al Mas'udi's (c. 888–957) chronologically, philosophically, and geographically arranged *Muruj adh-dhahab wa ma'adin al-jawahir* (The Meadows of Gold and Mines of Gems) were given a highly critical reception. Later writers eschewed *isnads* as a narrative and methodological intrusion and built upon Al Mas'udi's approach. Ibn Khaldun (1332–1406), for instance, combined philosophy, geography, and social theory in his *Kitab al-'Ibar*.

Chronologically arranged universal histories were also produced in China, as Sima Guang's (1019–1086)



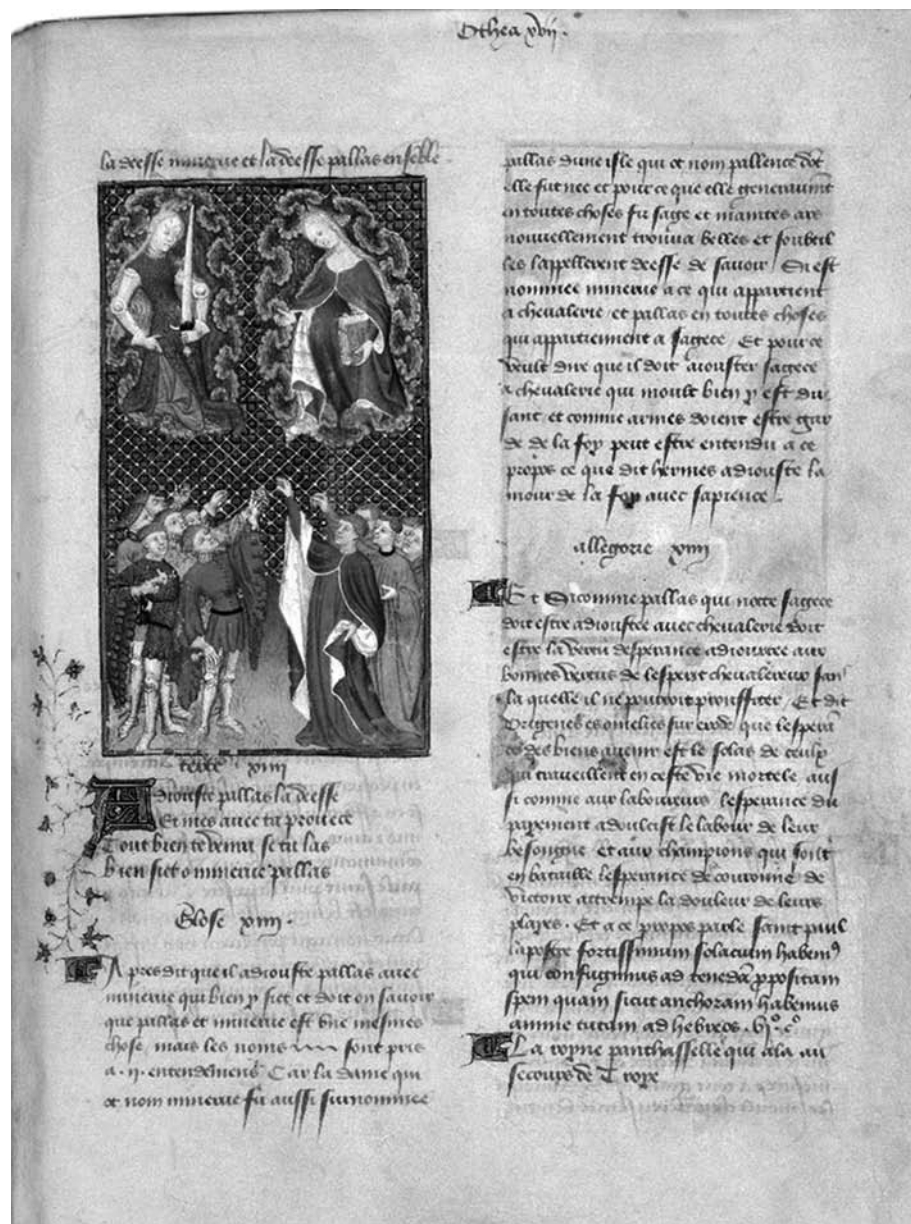
Page from the *Hanshu* (History of the Former Han Dynasty), by Ban Gu (32–92 CE).

Zi Zhi Tong Jian (Comprehensive Mirror to Aid in Government) attests. But it is the synchronic, encyclopedic structure of official Chinese histories that most sets them apart from other historiographical traditions. A four-part division of histories into imperial annals (*benji*), tables (*biao*), treatises (*shu*), and biographies or memoirs (*juan* or *liezhuan*) was established by the first four official histories—the *Shiji* (*Records of the Grand Historian*) begun by Sima Tan (d. c. 110 BCE) and completed by Sima Qian (145–80 BCE); the *Hanshu* (History of the Former Han Dynasty) by Ban Gu (32–92 CE); the *Sanguozhi* (History of the Three Kingdoms) by Chen Shou (d. 297 CE); and the *Hou Hanshu* (History of the Later Han) by Fan Ye (398–445 CE). The first part of each work documented major events in imperial families; the second, month-to-month events for government offices; the third, knowledge concerning an enormous range of activities; and the fourth, accounts of virtuous and infamous individuals and collective biographies. Though modified, this structure was employed

in official histories right up to *Qingshi gao* (Draft History of the Qing Dynasty, 1928).

Interactions, Exchange, and Universal History

The growth of intellectual, economic, and socio-political networks of exchange in the foraging and agrarian eras prompted the defense, augmentation, and revision of universal and later world historical views. Labels and typologies were used to bestow respect upon, to accommodate, or subjugate newly encountered peoples. In many European universal histories, for instance, race and gender typologies coalesced in narratives of the stagnation of the effeminate East and the progressive perfection of the masculine West. Some writers used other cultures to make criticisms about their own: to take one example, Voltaire (1694–1778) used the history of China in *Essai sur les mœurs et l'esprit des nations* (An Essay on Universal History) to highlight the savagery, superstition, and irrationality of Christian Europe. Corresponding examples from outside Europe may also be found, like Wei Yuan (1794–1856), who compared the historical paths of Europe and China in *Haiguo Tuzhi* (Illustrated Treatise on the Sea Kingdom) based on the argument that learning the superior technology of the Europeans could be a means to control them. Universal histories were also used to promote the interests and ideals of particular social groups: for example, Philip Melancthon (1497–1560) and the bishop Jacques-Bénigne Bossuet (1627–1704) saw universal history as an excellent means to defend Christian beliefs. Promoting a different cause, in *The Book of the City of Ladies* (1405), Christine de Pizan narrated a hierarchical universal history of female warriors, good wives, and saintly women to empower female readers to aspire to the city of womanly virtue. Joseph Swetnam, on the other hand, argued in his pamphlet *The Arraignment of Lewd, Idle and Forward Women* (1615) that women are, like the rib that they were fashioned from in the Judeo-Christian creation story, “crooked by nature.”



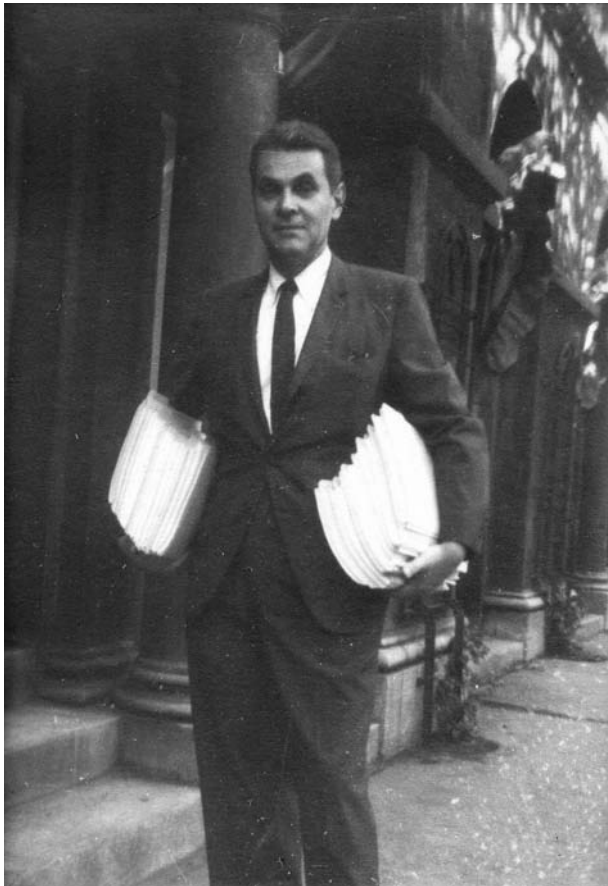
Detail of a page from *The Book of the City of Ladies* (1405), by Christine de Pizan. Pizan intended her “city” of female warriors, good wives, and saintly women to empower medieval women and confront sexism and misogyny.

Universal histories proliferated after the aggregation of printing technologies in fifteenth-century Europe. This made decisions on the proper means of researching, writing, and reading them increasingly urgent to many writers. In *Method for the Easy Comprehension of History*, for example, Jean Bodin (1530–1596) advanced the notion that the logical order of universal history was chronological, from the general to the specific, and from Europe outward to the rest of the known world. “Mis-order,” in his view, could weaken the powers of the mind. Conversely, Christopher Cellarius (1638–1707) argued

for the tripartite division of history into “ancient,” “medieval,” and “new” periods.

The Philosophical Turn

Over the course of the seventeenth century more universal historians endeavored to establish a proper “scientific” or “philosophical” foundation for history. What these terms meant varied from place to place. In Scotland, for instance, “conjectural historians” such as Francis Hutcheson (1694–1746), Adam Smith (1723–1790), Adam Ferguson (1723–1815),



William H. McNeill holds the manuscript for *The Rise of the West* (1963) before submitting it to University of Chicago Press in 1962. McNeill is often regarded as a father figure in twentieth-century world historical studies.

John Millar (1735–1801), William Robertson (1721–1793), Dugald Stewart (1753–1828), and David Hume (1711–1776), worked to explain the origin of human sociability, a “moral sense” that would account not only for human community but also for human progress. The Italian scholar Giambattista Vico (1668–1744), on the other hand, saw the Latin language, Roman law, and the Homeric poems as a point of entry into the “scientific” study of the course and recourse of nations’ histories. French historians like Fontenelle (1657–1757), Étienne Bonnot de Condillac (1715–1780), the Marquis de Condorcet (1743–1794), Anne-Robert-Jacques de Turgot (1727–1781), and Jean Étienne Montucla (1725–1799) tracked the history of the “human spirit” or mind from barbaric beginnings to the height of enlightened, mannered “civilization.” In Germany, Johann Gottfried von

Herder (1744–1803) adopted an organic view, outlining the unique features of cultures in childhood, infancy, manhood, and old age. Immanuel Kant (1724–1804) detected reason in the long history of humanity’s “unsocial sociability,” Leopold von Ranke (1795–1886) sought the “holy hieroglyph” or mark of God and meaning in world cultures, and Georg Wilhelm Friedrich Hegel (1770–1831) detected “progress of the consciousness of freedom” in the movement of world history from the East to the West (*Philosophy of History* 1956, 19). Later in the nineteenth century, Karl Marx (1818–1883) inverted Hegel’s philosophical program, suggesting that the material conditions of life shape human freedom, not the other way around. Chinese historians, too, including Guo Songtao (1818–1891), Xue Fucheng (1838–1894), Wang Tao (1828–1890), Yan Fu (1854–1921), and Liang Qichao (1873–1929), increasingly urged the recognition of world history as a narrative of struggle for technological supremacy.

The Rise of Mass Literacy

Universal histories designed for mass consumption were also produced. Reader, reviewer, and publisher demands for morally edifying works favored the production of overtly didactic texts, often in the form of biographical catalogues. This type of writing proved particularly popular with middle-class women, who were given access to works designed to describe a world order in which women were the domestic companions of men. Notable examples include Mary Hay’s *Female Biography, or Memoirs of Illustrious and Celebrated Women, of all Ages and Countries* (1803); Lucy Aikin’s *Epistles on Women, Exemplifying Their Character and Condition in Various Ages and Nations with Miscellaneous Poems* (1810); Anna Jameson’s *Memoirs of Celebrated Female Sovereigns* (1832); Laure Junot’s *Memoirs of Celebrated Women* (1834); Mary Elizabeth Hewitt’s *Heroines of History* (1852); Sarah Josepha Hale’s *Woman’s Record* (1853); Mary Cowden Clarke’s *World-Noted Women* (1858); Sarah Strickley Ellis’s *The Mothers of Great Men* (1859); and Clara Balfour’s *Women Worth Emulating*

The only good is knowledge, and the only evil is ignorance. • Herodotus (484?–430/420 BCE)

(1877). While often dismissed as methodologically impoverished, many of these works acted as conduits for womanist and reformist thought. Lydia Maria Child's *The History of the Condition of Women, in Various Ages and Nations* (1835), for example, is underpinned by arguments against slavery and for female suffrage.

A Proto–World History?

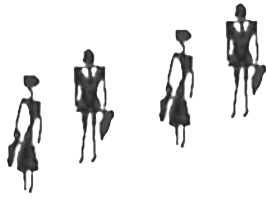
From the eighteenth century, existing ideas about universal history came to be seen as increasingly out of step with the specialized national research that accompanied the professionalization of history teaching, research, and writing. Some accommodation was achieved through the production of multi-author, multivolume universal history compendia or encyclopedias, but this in turn spurred H. G. Wells (1866–1946) to define universal history in part by the “unity of presentation attainable only when the whole subject has been passed through one single mind” (Wells 1920, 2). It is assumed by many historiographical commentators that Wells's efforts were akin to Canute's attempt to defy the tide. In their view, universal history was a proto–world history that was ushered aside in the twentieth century as speculation was replaced by rigorous forms of analysis and a greater respect for primary evidence. Universal history, however, survives in many forms, such as philosophies of history (e.g., Raymond Aron, *The Dawn of Universal History*, 1961, and Daniel Dennett, *Freedom Evolves*, 2002); compendia (UNESCO's *History of Humankind*, 1963); the fusion of science and history in the subfield of “big” history (Fred Spier, *The Structure of Big History*, 1996, and David Christian, *Maps of Time*, 2004); and, of course, encyclopedias such as this.

Universal history did not disappear in the twentieth century; it simply became one of a number of approaches to the writing of what was increasingly called “world history.” Roughly contemporary with Wells's *Outline of History* were Oswald Spengler's *The Decline of the West* (1918–1922); Sigmund Freud's *Civilization and Its Discontents*

(1930); Arnold J. Toynbee's *A Study of History* (1932–1961); Jawaharlal Nehru's *Glimpses of World History* (1934); Lewis Mumford's *Technics and Civilization* (1934); V. Gordon Childe's *Man Makes Himself* (1936); Pitirim A. Sorokin's *Social and Cultural Dynamics* (1937); Norbert Elias's *The Civilizing Process* (1939); José Karl Polanyi's *The Great Transformation* (1944); Mary Ritter Beard's *Woman as Force in History* (1946); Karl Jaspers's *The Origin and Goal of History* (1947); José Ortega y Gasset's *An Interpretation of Universal History* (1949); and Christopher Dawson's *The Dynamics of World History* (1956). Though they present a wide range of foci—psychological, religious, political, philosophical, sociological, cultural, archaeological, and technological—a common interest in the trajectories of civilizations spans these works. In Spengler's view, for example, Western civilization was “Faustian” because the limitless ambition of its people was likely to be its downfall; similarly, when Toynbee began *A Study of History*, he detected a number of suicidal tendencies in Western civilization. During the composition of volume six of twelve, however, he modified his view and concluded that the future would bring an age of universal churches or of selflessness or compassion.

Modernization, Dependency, and World-System Analyses

A more optimistic assessment of “modern” or “Western” civilization was also offered in the works of modernization scholars, who showed particular interest in the historical paths of development in the West that might be used to study and foster development in the “developing” world. Key contributions to modernization analysis included W. W. Rostow's *How It All Began: Origins of the Modern Economy* (1975); Cyril Black's *The Dynamics of Modernization: A Study in Comparative History* (1966); Reinhard Bendix's *Nation-Building and Citizenship* (1977); and E. L. Jones's *The European Miracle: Environments, Economies, and Geopolitics in the History of Europe and Asia* (1986).



A disparate group of neo-Marxist scholars disagreed, noting the inability of modernization scholars to explain Latin American economic development, and suggested an alternative in the form of dependency and, later, world-system theory. While modernization scholars looked to the internal characteristics of particular civilizations, dependency and world-system theorists stressed the need to study networks of economic and political exchange, and more particularly inequalities in the distribution of roles, functions, and power that fostered states of dependency. Dependency theory was advanced first in the writings of Latin American scholars like Paul Baran (*The Political Economy of Growth*, 1957) and then taken to a global audience in Andre Gunder Frank's *World Accumulation, 1492–1789* (1978) and *Dependent Accumulation and Underdevelopment* (1979). Frank's work, in turn, influenced Immanuel Wallerstein, who went on to elaborate world-system theory in a series of works including the three-volume *The Modern World System* (1974–1989) and *Historical Capitalism* (1983). In *The Modern World System*, he argued that the system of the title originated in fifteenth-century Europe, was composed of a “core” (advanced industrial states), a “periphery” (weak states engaged in raw materials production), and a “semi-periphery” (intermediate states).

World-system analysis was combined with a range of methodologies, including anthropology (Eric Wolf, *Europe and the People without History*, 1982); archaeology (N. Kardulias [editor], *World-Systems Theory in Practice: Leadership, Production, and Exchange*, 1999); geography (Paul Knox and Peter Taylor, *World Cities in a World-System*, 1995); and cultural history (John Obert Voll, “Islam as a Special World-System”, *Journal of World History*, 1994). The range and scope of world-system studies also increased, with Leften Stavrianos (*Global Rift*, 1981), Janet Abu-Lughod (*After European Hegemony*, 1989), Frank (*ReOrient*, 1997), Frank and Barry Gills (*The World System: Five Hundred Years or Five Thousand?*, 1993), and Christopher Chase-Dunn and Thomas Hall (*Core/Periphery Relations in Precapitalist Worlds*, 1991) exploring

Afro-Eurasian systems of exchange up to seven thousand years ago.

The Relational Shift

Postcolonial scholars also adapted dependency and world system theory. First brought to the attention of world historians with the publication of Edward Said's *Orientalism* (1978), postcolonial theorists enhanced political and economic criticisms of colonialism with cultural analyses. Representation and language are crucial for the construction of an “other”: for example, Marshall Hodgson (*Rethinking World History*, 1993), Dipesh Chakrabarty (*Provincializing Europe*, 2000), and Ranajit Guha (*History at the Limit of World-History*, 2003) argued that the language, concepts, periodization, and structure of world histories can minimize and even mask the historical activities of those “outside” the West. World historians with an interest in postcolonial themes, such as Michael Adas (*Islamic and European Expansion*, 1993) and Margaret Strobel (*Gender, Sex, and Empire*, 1993), sought to balance the demands of aligning the experiences of colonized subjects and recognizing the specificities of race, class, nationality, religion, sexuality, epistemic, social, political, and economic hierarchies, and gender relations.

Dependency, world-system, and postcolonial world histories formed part of a wider shift in the twentieth century toward the study of relations between peoples across the globe. This shift is clearly discernable over the long career of William H. McNeill, often taken as a central or “father” figure in twentieth-century world historical studies. While the theme of diffusion shaped his first major world historical work—*The Rise of the West* (1963)—the depth and breadth of his interest in world historical webs of interaction emerged more fully in *Plagues and Peoples* (1976), *The Pursuit of Power* (1982), *Keeping Together in Time* (1990), and *The Human Web* (2003, with J. R. McNeill). Human interaction on the largest scale—over the globe—was also the subject of new global historical studies. New global historians like Bruce Mazlish and Ralph Buultjens (*Conceptualizing Global*

History, 1993), Anthony Hopkins (*Globalization in World History*, 2001), Roland Robertson (*Globalization*, 1992), Manuel Castells (*The Information Age*, 1996–1998), and Arjun Appadurai (*Modernity at Large*, 1996) looked to economic, anthropological, political, and cultural evidence to track the phenomenon of globalization—the emergence of an integrated anthropogenic globe—over the course of the twentieth century.

Transnational, comparative, new imperial, and new world historians were also interested in human interaction, but their works were smaller in spatial and temporal focus than those of other world historians. This contraction may be explained by reference to, among other factors, the perception that the recent explosion in evidence made large-scale synthesis too demanding, and postmodern and postcolonial claims that large-scale narratives were instruments of intellectual imperialism. Of particular interest to these writers were phenomena such as intergovernmental organizations, internationalist movements, technological exchange and diffusion, migration and diasporas, cultural hybridity, and transnational corporations. For example, trade and cultural diasporas centered on the Mediterranean, Indian, Atlantic, and Pacific Oceans were analyzed by Fernand Braudel (*The Mediterranean and the Mediterranean World in the Era of Philip II*, 1949); Philip Curtin (*The Atlantic Slave Trade*, 1969; *The Rise and Fall of the Plantation Complex*, 1990; *Cross-Cultural Trade in World History*, 1984); Niels Steensgard (*The Asian Trade Revolution of the Seventeenth Century*, 1974); K. N. Chaudhuri (*Trade and Civilisation in the Indian Ocean*, 1985; and *Asia before Europe*, 1990); Eric Jones, Lionel Frost, and Colin White (*Coming Full Circle*, 1993); John Thornton (*Africa and Africans in the Making of the Atlantic World, 1400–1680*, 1992); and Adam McKeown (*Chinese Migrant Networks*, 2001).

Widening Views of World History

Relations of power were also of central concern to world historians studying both women and gender. Gender history is not women's history, but rather the

study of varying relations between constructed gender categories. For example, Michel Foucault noted the shifting shape of "sexuality" across ancient and modern history (*The History of Sexuality*, 1976–1984), and Ida Blom has demonstrated how varying gender systems shaped understandings of the nation-state ("World History as Gender History," in Dunn 2000, 446–61). More recently, Marilyn Morris ("Sexing the Survey," *World History Bulletin*, 1998), Merry Weisner-Hanks (*Gender in History*, 2001), and Judith Zinsser ("Gender," in Hughes-Warrington 2004, 189–214) have drawn attention to the gender of world history writing, and argued that favored concepts, narrative forms, and even periodization frameworks have served to render the experiences of many women and men invisible.

In the second half of the twentieth century, world histories took an increasing interest in the ways in which the organic and inorganic environment have both shaped and been shaped by human activities. Jared Diamond, for instance, looked to the role of environmental factors in the emergence of the divide between the "developing" and "developed" worlds (*Guns, Germs and Steel*, 1998), and Brian Fagan considered the role of climatic phenomena like El Niño in shaping historical events (*Floods, Famines and Empires*, 2001). In contrast, Mike Davis stressed the opportunistic use of El Niño by colonial powers to create a world market economy (*Late Victorian Holo-causts*, 2001), and John R. McNeill outlined growing awareness of the impact of human activities on the Earth, from the pedosphere (the Earth's continental crust, rocks, and soil) to the stratosphere (*Something New Under the Sun*, 2000). Other writers have drawn upon conceptual models and theories from the natural sciences to explain historical changes: for example, in *Nonzero* (2000), Robert Wright looked to game theory; Stephen J. Gould (*Wonderful Life*, 1989) and Murray Gell Mann (*The Quark and the Jaguar*, 1994) disagreed about whether evolution implied increasing complexity; and Eric Chaisson tracked increasing energy flows from the big bang to the evolution of humans (*Cosmic Evolution*, 2000). More radically, too, writers like Dorion Sagan and Lynn Margulis



(*Microcosmos*, 1986) even questioned the privileging of human actions and argued for a world history centered on cells.

World History: Professional and Popular

While the twentieth century saw the emergence of organizations, journals, conferences, Internet discussion forums, and syllabi focused on world history, the field was not and likely will never be of interest to trained specialists alone. John M. Roberts (*The New Penguin History of the World*, 2003) and Mark Kurlansky (*Salt: A World History*, 2002) are just two of the many writers who have produced world historical works for the benefit of nonspecialist readers around the world. World history is and likely will continue to be characterized by multiplicity: first, in the use of data from different times and places; second, in the blending of many methods from a broad range of disciplines; third, in the diverse backgrounds, assumptions, and world orders of authors; and finally, in the mixture of narrative styles and organizational concepts. For this reason, it makes sense to speak of “world histories” rather than of “world history.”

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See also Comparative History; Creation Myths; Eurocentrism; Herodotus; Ibn Khaldun; Orientalism; Periodization; Postcolonial Analysis; Postmodernism; Sima Qian; Women's and Gender History

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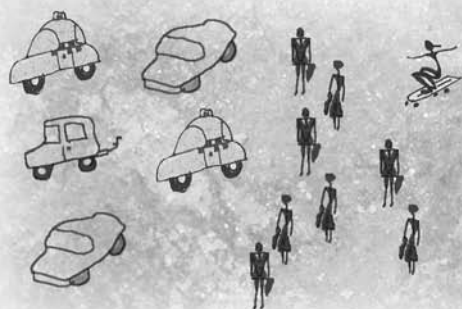
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World War I

As the inevitable outcome of nineteenth-century imperialism, local wars, and rival power blocs in Europe, World War I had tremendous consequences. It transformed territorial boundaries in Europe and destroyed three great empires. Ideas about class privilege and gender discrimination began to change. Political ideology was radicalized through communism, fascism, and socialism, and the international war debt contributed to a dire postwar economic situation.

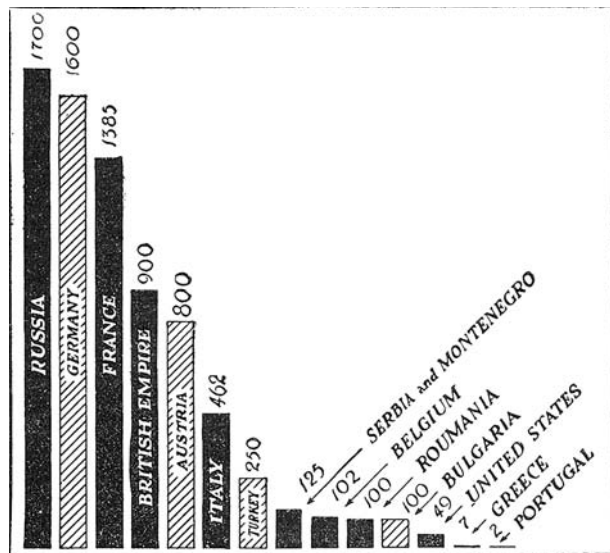
World War I (1914–1918) was the great climax of the age of competitive imperialism. The deepest causes of the war lay in the struggle between the major European powers for control over territories newly occupied by Europeans during the late nineteenth century, especially in Africa, Asia, and the Pacific. This tension also was linked to competition in armaments and a generalized sense of rivalry in industrial development. As the period of economic liberalization of the mid-nineteenth century receded, it was replaced by an age of competing tariff regimes. Rivalries produced a series of localized wars and diplomatic crises during the two decades before 1914. Some conflicts reflected global competition, such as the Fashoda Crisis (1898) in Sudan, the South African War (1899–1902), the Russo-Japanese War (1904–1906), the Moroccan crises (1905 and 1911), and the Italian invasion of Libya (1911). Some rivalries reflected long-standing tensions in southeastern Europe, such as the crisis over the Austrian annexation of Bosnia-Herzegovina (1908–1909). These tensions in turn solidified the rival power blocs into which Europe had been divided, with Russia, France, and Britain bound in one alliance system (the Entente)

and Germany, Austria-Hungary, and Italy in another (the Triple Alliance).

Certain destructive political and economic doctrines also seduced educated opinion. Social Darwinist and geopolitical theories, which asserted the inevitability of wars to control resources, helped reconcile many people to the idea of armed conflict. Political pressure groups and the new cheap newspapers asserted imperialist and militarist values. Domestic political tensions, worsened by rapid industrialization, especially inside Germany and Russia, also tempted reactionaries to see a short and successful war as a means of escape from reformist or revolutionary movements.

On the other hand, countervailing forces existed. Both liberal and socialist internationalists promoted notions of peace through free trade or working-class solidarity. Increasing economic interdependence between the major powers caused many people to believe that war was unlikely. Some people hoped that the two Hague Peace Conferences of 1899 and 1907 signaled that a new international order was in formation.

The descent into war itself had European origins. On 28 June 1914 Archduke Franz Ferdinand, heir to the Austro-Hungarian throne, was assassinated in Sarajevo, Bosnia, by Serbian nationalists. The Austro-Hungarian government decided to use the assassination as an opportunity to inflict a military punishment on Serbia, its rival in southeastern Europe. Promises of German support, even if the humiliation of Serbia involved risk of a wider war, were obtained. Austria-Hungary delivered an ultimatum to Serbia on 23 July, demanding drastic action against nationalist extremists. The Russian government, supporting



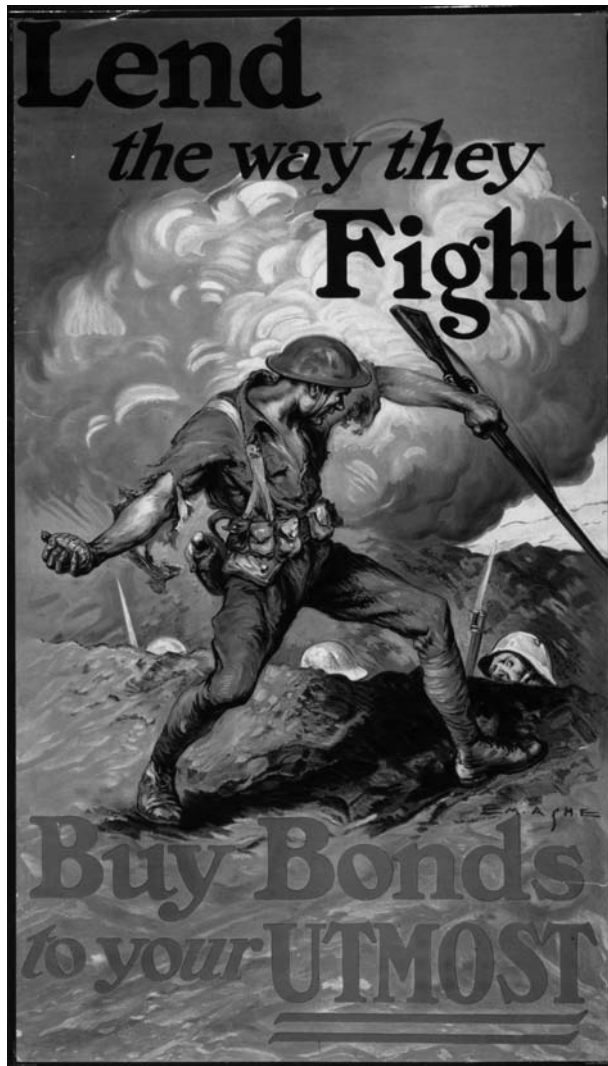
This graph shows the number of battle deaths in the thousands by nation during World War I. Many hoped that peacemaking efforts of the League of Nations would prevent future devastating casualties of war.

Serbia, acted with equal vigor and instituted orders for “the period preparatory to war” on 26 July. The Austro-Hungarians opened their military campaign against Serbia on 28 July. The sequence of diplomatic events that followed during the next week ensured the escalation of a local war (between Serbia and Austria-Hungary) into a continental war (between Germany and Austria-Hungary on the one hand, and Russia and France on the other) and then a world war (when Britain declared war on Germany). All sides made errors that snuffed out hopes for peace. The Germans, whose leaders wavered between eagerness for war and a preference for a negotiated settlement, failed to press the case for mediation upon their Austro-Hungarian allies. Similarly, the British and French failed to discourage the Russians from precipitate action, always giving a higher priority to the preservation of their alliance system. The Russians recklessly ordered general mobilization on 30 July. The Germans, gambling mistakenly on British neutrality, rushed to declarations of war against both Russia and France on 1 and 3 August and violated Belgian neutrality on 3 August. The British, stung by this violation and determined to maintain their alliances against their chief imperial and commercial rival, declared war on Germany on 4 August.

No Quick Victories

The first months of fighting were marked by rapid military movements. The first battles, however, failed to deliver quick victories to those taking the offensive. On the western front the German invasion of Belgium and France was halted at the Battle of the Marne in France in September 1914. On the eastern front the Russian invasion of East Prussia was halted at the Battle of Tannenberg in late August. After the first Battle of Ypres in Belgium in November, a vast line of trenches in the west stabilized. By this time the war had escalated globally. Japan entered the war on the Entente side in August in order to secure German possessions in the Pacific and China. Turkey entered on the side of the Central powers (Germany and Austria-Hungary) in November, hoping to profit at the expense of Russia, Turkey’s old antagonist. During the first months of the war Britain and its imperial allies conquered the bulk of Germany’s colonial empire.

During 1915 horrors multiplied. In Turkey the most appalling in a list of atrocities unleashed by the war occurred: the Armenian people endured an attempted genocide. On the western front a series of offensives by the British and French failed to dislodge the German forces. Similarly, in April the Turks repulsed an Entente attempt to seize the Dardanelles strait by landing at Gallipoli, and the invasion force withdrew in December. In May Italy was induced to enter the war on the Entente side but enjoyed no military breakthrough. On the eastern front German and Austro-Hungarian campaigns were more successful, and Russian Poland was occupied in the summer. Bulgaria entered the war on the side of the Central powers in September, and a subsequent German-led offensive in Serbia was also successful. An Entente counteroffensive from Salonika in Greece in October stalled, and British forces also retreated from Baghdad. Whereas the “war map” favored the Central powers, the Entente was successful in economic warfare. Britain’s decision to impose an economic blockade on Germany in March 1915 began the process of Germany’s internal debilitation.



The U.S. government encouraged citizens to buy war bonds. Library of Congress.

Vast battles of attrition, in a war now based upon industrialized killing, characterized the fighting in 1916. In the west both a German attempt to take Verdun, France (February–July), and a British counterattack at the Somme River in France (July–November) ended in costly failures. Romania entered the war on the Entente side in August but was soon overrun by German forces. A Russian offensive in the Austro-Hungarian province of Galicia (June–August) was more successful. A vast naval battle between the British and German fleets off the Jutland (Jylland) peninsula of Denmark in May had an indecisive outcome. German surface vessels, however, were unable to challenge the British blockade after that date. In addition, in response to U.S. pressure, Germany was

forced to moderate its use of submarines against merchant ships in the Atlantic. U.S. sales of war material, overwhelmingly to the Entente side, continued to grow. The Central powers again dominated in territorial terms in 1916, but the blockade steadily worsened shortages of domestic food and matériel.

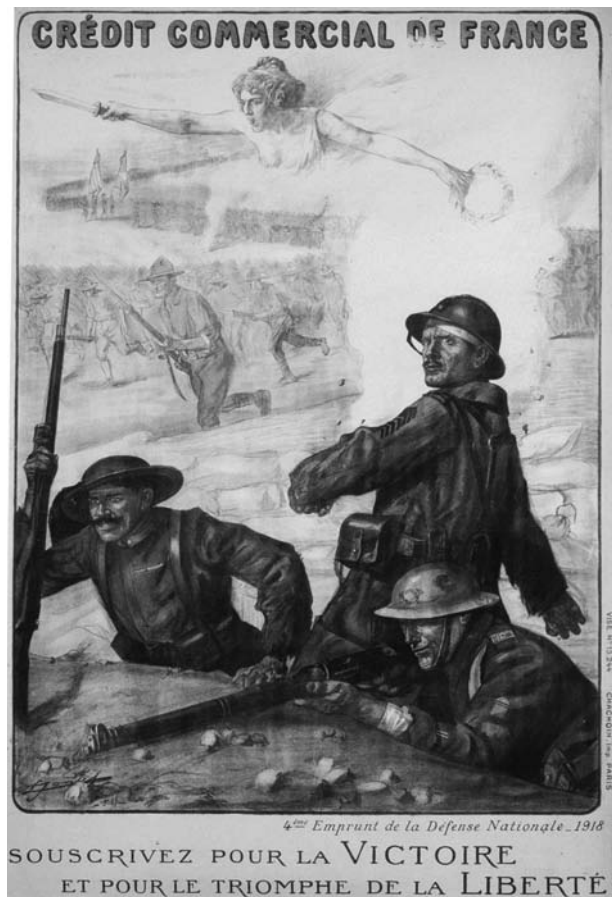
In pursuit of unity at home, both sides promised their people that they were fighting defensive wars. Diplomatically, however, both sides made deals involving promises of annexations, either to shore up or to widen their alliances. By the Straits Agreement of March 1915, Britain and France promised Russia possession of Constantinople, Turkey. In April 1915, with the Treaty of London, Britain promised significant annexed territories on the Adriatic coast to Italy. In October 1915 Britain promised the Sharif of Mecca that Britain would support independence for the Arab peoples under Ottoman rule if the Arabs rose in revolt. The exact boundaries of future independent Arab states, however, were not made clear. In February 1916 France and Britain agreed to divide the bulk of the former German colonies. Under the Sykes-Picot Agreement of May 1916, France and Britain agreed on the partition of the bulk of the Ottoman Empire. Similarly, Germany prepared plans for annexations in both east and west in the so-called September Program of 1914. Germany's leaders of army and navy steadfastly insisted on annexations in Belgium and France for strategic security. In securing Bulgaria's adhesion to the Central powers in September 1915, Germany promised Bulgaria gains in Macedonia. Most importantly, in 1915 and 1916 Germany and Austria-Hungary also agreed on annexations in eastern Europe at Russia's expense. In a major step toward this goal, in November 1916 Germany and Austria-Hungary proclaimed a new kingdom of Poland, carved out of Russian Poland.

Politics Polarized

The war polarized politics. The increasing demands of war meant that liberal ideals were at a discount. From the political right in each warring nation arose pressures for more authoritarian policies and

an all-consuming military mobilization. The ultra-patriotic newspapers called incessantly for victory at any cost through the suppression of dissent, the expulsion of aliens, and radical economic nationalism. Politicians and military figures promising an intensification of the war rose to prominence and displaced moderates. For example, in Germany Generals Ludendorff and Hindenburg were appointed to the Supreme Command in August 1916. The two generals overshadowed the civilian government, and their political intriguing eventually secured the resignation of Chancellor Bethmann-Hollweg in July 1917. In Britain the Liberal government of H. H. Asquith steadily retreated from free speech, free service, and free trade. Conscription was introduced in January 1916. The Paris Resolutions, decided upon at an interallied conference of British, French, and Russian delegates in Paris in June 1916, threatened Germany with a postwar economic boycott. David Lloyd George, promising to wage war more vigorously until achieving a “knock-out blow” against Germany, displaced Asquith as prime minister in Britain in December 1916.

Nonetheless, in late 1916 diplomats attempted to resolve the war by negotiation. On 12 December, Germany offered to end the war by a diplomatic settlement. On 18 December, U.S. president Woodrow Wilson, a dedicated liberal internationalist, urged all sides to specify their war aims, hoping to increase pressure for negotiations. Britain, Russia, and France rejected the German offer on 30 December. Wilson pressed the case for “peace without victory” in a major address to the U.S. Senate on 22 January 1917. The Germans, however, undercut his effort, announcing a resumption of unrestricted submarine warfare for 1 February 1917. This resumption threatened the lucrative U.S. trade in war matériel with the Entente. Wilson cut off diplomatic relations with Germany. But not until the collapse of the czarist regime in the first Russian Revolution of mid-March did Wilson make his final decision on war. Characterizing the war as a democratic crusade, Wilson took the United States into the war against Germany on 6 April 1917.



Victory personified, holding a laurel and a sword, hovers over the soldiers in this World War I French war bond poster. Library of Congress.

During 1917 military stalemate persisted. Major campaigns were persisted with—in part to forestall rising public pressure for the revision of war aims and peace. The German U-boat war in the Atlantic was initially successful but was countered by the convoy system. The French attempted an advance in the west under General Nivelle in April, but this soon faltered, and mutinies followed. The Russians mounted a last major advance in July, but it ground to a halt within a fortnight. The British followed with a major offensive in Flanders, in Belgium (July–October), also to no avail. The Italians, too, suffered a major reverse at the village of Kobarid (Caporetto), Slovenia, in October. The British success in taking Jerusalem in December was one of the few Entente military successes in 1917. Only the promise of U.S. assistance gave grounds for hope.

In political terms rivalries intensified between the political right, demanding victory at any cost, and the



Trench warfare resulted in devastating casualties, while the “socialism of the trenches” undermined notions of class privilege.
Library of Congress.

political left, now demanding peace by negotiation or revolution. In Germany widespread strikes were staged in April 1917 (and later in January 1918). German liberals and socialists seeking domestic reform and peace succeeded in passing the Peace Resolution through the Reichstag (parliament) in July 1917. The new Russian government pressed unsuccessfully for an interallied conference to revise war aims. European socialists proposed to hold a conference in Stockholm, Sweden, to draw up the basis of a compromise peace, but the western powers refused to allow their socialist parties to be represented. Britain experienced serious industrial unrest in April, and in August the British Labour Party swung around to support the idea of an international socialist conference at Stockholm. Faced with continuing disputes among moderate and revolutionary socialists, however, and the decisions of the U.S., British, and French governments denied passports to their socialist delegates, and the organizers eventually abandoned their efforts

to summon a broadly representative socialist conference in Stockholm. This intensified domestic political tensions still further. For example, the French socialist party left the government in September in protest at annexationist politics. The Papal Peace Note of August 1917 was one of many diplomatic opportunities for peace during the year. In Russia the Bolshevik Revolution of November eventually brought about an armistice on the eastern front in December.

War Aims Widened

Behind the scenes, however, diplomacy again widened war aims during 1917. In February, France and Russia agreed on gains at German expense in east and west in the Doumergue Agreement, and Britain and Japan agreed on the disposal of Germany's colonies in the Pacific. In April, Britain and France offered Italy a share of the spoils of the Ottoman Empire. At three conferences at Bad Kreuznach, Germany,

in April, May, and August 1917, again Germany and Austria-Hungary agreed upon annexations, principally in eastern Europe. On the other hand, diplomats made secret attempts at a diplomatic settlement. In September German Foreign Minister Kühlmann approached Britain, offering to give up Germany's gains in the west for a free hand in the east.

During the winter of 1917–1918 the peace talks between the Russians and Germans provided another opportunity for a general peace. The western powers resisted any peace of compromise brokered by socialists. Instead, in separate addresses in January 1918, Lloyd George (his Caxton Hall speech) and Wilson (his Fourteen Points speech) reaffirmed their liberal democratic ideals. Germany eventually imposed a harsh peace on the defeated Russians through the Brest-Litovsk Treaty of March 1918.

In spite of growing domestic discontent inside Germany, the German Army High Command insisted on a vast offensive to achieve a victory in France before U.S. troops could arrive in strength. The offensive was launched on 21 March 1918 and was initially successful. Allied counterattacks in July and August threw back the offensive, however, and an inexorable German retreat began. By September the military crisis was so serious that the German Army High Command buckled. A reformist government of liberals, democrats, and socialists was formed under Prince Max of Baden to pursue both domestic democratization and a negotiated peace. This government applied to Wilson for an armistice. The armistice was signed on 11 November 1918.

The consequences of the war for Europe and the rest of the world in the twentieth century were enormous. The war transformed the territorial boundaries of Europe: three great conservative empires—the Russian, the German, and the Austro-Hungarian—were swept away. New states were created in Eastern Europe, most notably Poland, Czechoslovakia, and Yugoslavia. Huge social changes were starkly revealed. The “socialism of the trenches” undermined notions of class privilege. Democratic expectations were heightened, but disenchantment followed. The idea of “separate spheres” in gender relations was both



In 1916 ultrapatriotic newspapers called incessantly for victory at any cost through the suppression of dissent, the expulsion of aliens, and radical economic nationalism. In this poster, which demands that the French “try again,” a young girl is solicited to support the war. Library of Congress.

challenged by women's wider experience of work and reinforced by war propaganda lauding masculine militarism. The war radicalized the political ideologies of the prewar era. Liberalism wilted. The schism between democratic and revolutionary socialists became unbridgeable. Communism, promising liberation from capitalism and imperialism, was catapulted into world politics. Fascism (and National Socialism) erupted in response, promising salvation from Communism through militarist values, authoritarian politics, and racial purity. The propaganda techniques so ruthlessly deployed during the war to manage the masses inspired the dictators of the interwar years. The enormous cost of the war, which produced huge internal and international debts, contributed to the persistent postwar economic dislocation. In cultural terms the war provoked a pervasive cynicism, tension between the generations, religious doubt, and a

After all my years of playing soldiers, and then of reading History, I have almost a mania to be in the East, to see fighting, and to serve. • **Wilfred Owen (1893–1918)**

profound antimilitarism. A vibrant and critical modernism emerged.

Douglas NEWTON
University of Western Sydney

See also Interwar Years (1918–1939); League of Nations; Treaty of Versailles

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World War II

World War II (1939–1945) is regarded as the most widespread and deadliest conflict in human history. The war involved many nations and was fought on battlefronts in Europe, North Africa and the Middle East, Asia, and the Pacific. Led by Great Britain, the Soviet Union, and the United States, the Allies emerged victorious over the major Axis powers, Germany, Italy, and Japan.

World War II developed, in part, from the resolution of World War I. The peace conferences ending World War I resulted in a victor's peace, and the vanquished harbored a sense of unfair treatment. The worldwide economic depression that began in the 1920s and continued into the 1930s helped bring about totalitarian regimes in Italy, Japan, and Germany. When democracies could not agree on a forceful, common program to halt aggression in the late 1930s, war began; it expanded with the inclusion of the Soviet Union in June 1941 and the United States in December 1941. When the fighting finally stopped in September 1945, tens of millions of people had died worldwide; the great European colonial empires in Asia and Africa soon would end; and two great powers, the USSR and the United States, found themselves unable to bridge the divide between them and plunged much of the world into a Cold War that lasted until the collapse of the Soviet Union in the late 1980s.

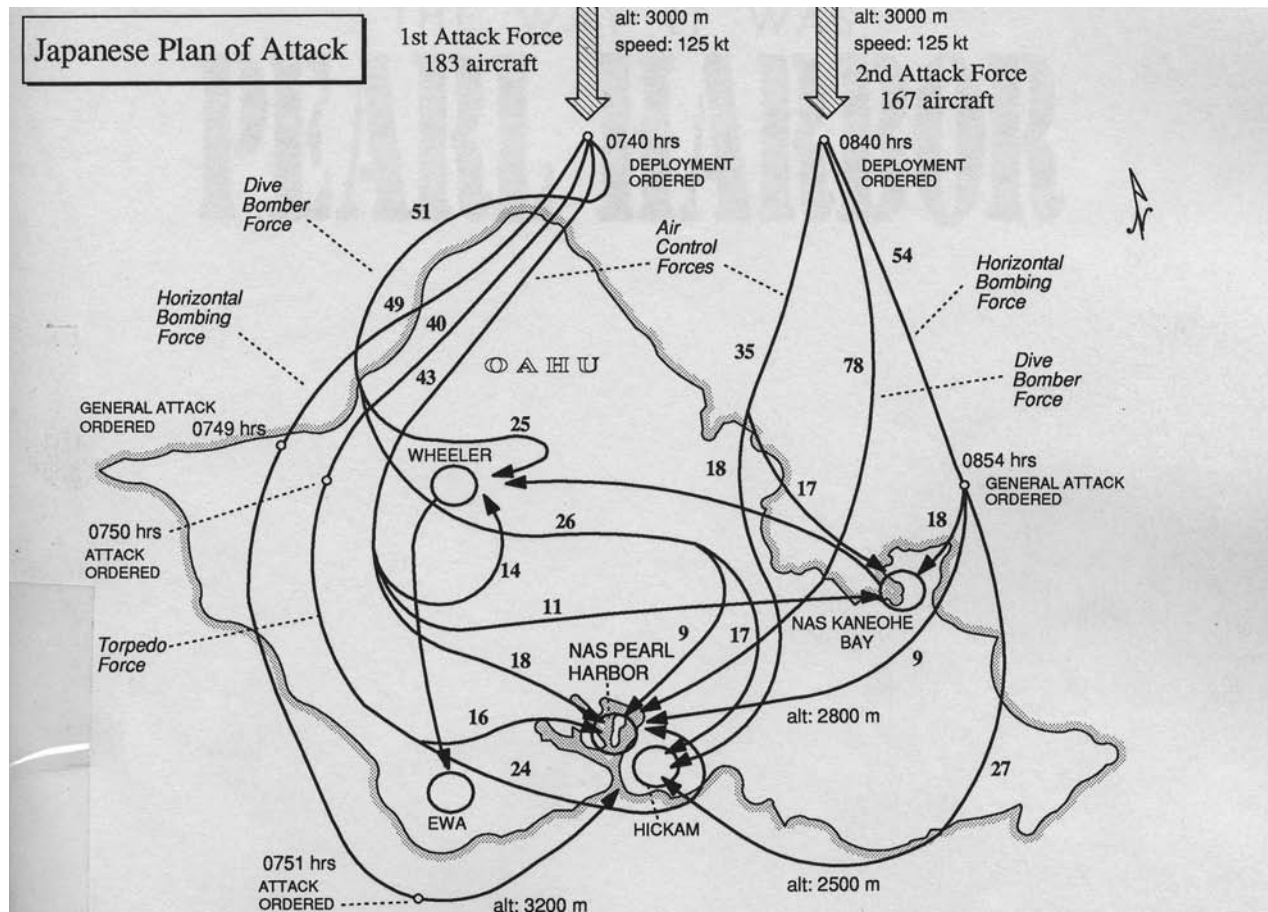
The Build-Up to War

On 18 September 1931, the Japanese Kwantung Army claimed that Chinese bandits had blown up the main track of the South Manchurian Railway, and, within a

year, Japan seized control of Manchuria and created a puppet regime, Manchukuo. Japan then moved into Inner Mongolia and the Chinese provinces outside the Great Wall. In July 1937, minor hostilities expanded into war. Within several years, the conflict settled into a strange, three-sided affair, as Chinese Nationalist forces, Chinese Communist guerrillas, and the



This poster, produced by Westinghouse during World War II, glorified and glamorized the roles of working women, suggesting that women's femininity need not be sacrificed when they resolved to do their part to win the war. National Archives.



A diagram of the Japanese attack plan for Pearl Harbor, which was launched on 7 December 1941.

Japanese army faced one another, with Japan largely controlling populated eastern China and the Yangzi (Chang) River valley, the Communists in their base area at Yanan, and the Nationalists at Qongqing in Sichuan Province.

Japanese aggression in Manchuria may have encouraged other dictators to disregard the League of Nations and to challenge the entire Versailles Peace Treaty structure. In January 1933, Adolf Hitler (1889–1945) became chancellor of Germany, and he expanded the army and navy, established an air force, and reoccupied the demilitarized Rhineland without serious protest from France or Great Britain. In March 1938, Hitler forced a unification of Germany and Austria—the Anschluss—and in September 1938 signed a peace accord with France and Great Britain that handed him the Sudetenland of Czechoslovakia. In March 1939, German forces seized Memel in Lithuania and took control of the remainder of Czechoslovakia. During the summer of 1939, France and Great Britain approached

the Soviet Union to assure Poland's territorial integrity, but the USSR shocked the world when it signed a treaty with Nazi Germany in late August.

Hostilities Begin

Hitler turned to war. On 1 September 1939, the German army unleashed a blitzkrieg against Poland, crushing the Polish army in three weeks. After a winter pause, Germany attacked Norway and Denmark on 9 April 1940, securing Norwegian ports and Swedish iron ore shipments. On 10 May 1940, Germany threatened a wheeling movement through the Low Countries and then struck through the supposedly impassable Ardennes forest, unleashing its panzer forces behind the advancing army, driving to the English Channel in several weeks. Only the valiant effort of British seamen lifting more than 300,000 British and Allied soldiers from Dunkirk prevented a complete German victory. Germany



The message on this Russian World War II poster by F. Gerling encourages Russian citizens to “subscribe to the 5½ % war loan. Build the road to victory.” Library of Congress.

turned south against France and forced the French surrender. Hitler apparently wanted to invade Great Britain, in Operation Sea Lion, and the Luftwaffe fought for control over the skies of Britain. Germany’s air force was designed for tactical support of advancing ground forces and not for a strategic air campaign, and it changed objectives too often—from coastal radar stations to fighter air bases to industrial factories, to terrorizing cities. By late summer 1940 the air offensive had failed. Strangely, from late summer 1940 until spring 1941, the German army launched no new offensives; this perhaps represented a major opportunity lost.

Germany next turned east. On 7 April 1941, Germany attacked Yugoslavia and Greece, and quickly conquered both countries. On 22 June 1941, Hitler sent more than 3 million German troops; 3,300 tanks; 7,700 artillery pieces; 2,500 planes; and forces from

satellite countries into the Soviet Union in Operation Barbarossa. Germany lacked accurate information on its enemy and greatly underestimated the challenge. But, in early summer, it appeared Germany would land the knockout blow: as its Army Group North drove on Leningrad, Army Group Center pulled off several huge encirclements of Soviet troops on the way to Moscow, and Army Group South neared Kiev. In late summer, the troops rested, and Hitler ordered the panzer forces of Army Group Center to turn north and south to help these peripheral drives. Turning south, tank forces of Heinz Guderian helped surround 665,000 Soviet troops near Kiev, the largest prisoner-of-war capture in history. When Germany resumed the advance on Moscow, the Soviet Union was ready. Operation Typhoon failed within sight of the Kremlin, and the Soviets counterattacked, catching the German army desperately unprepared. When the Soviet attack petered out in late winter, Germany had suffered grievous losses, and it seemed the Soviet Union could survive.

War in the Pacific

The Japanese defeat by the Soviets at the Battle of Nomonhan (Khalkin Gol) on the Mongolian border in August 1939 caused Japan to look south for raw materials; Japanese military leaders settled on a centrifugal offensive centered on the destruction of the U.S. Pacific Fleet at Pearl Harbor, Hawaii. On 7 December 1941, Japan attacked, and thereafter gained a series of striking victories, including capturing Hong Kong, the Malay Peninsula, and the British stronghold of Singapore, the Mariana and Gilbert Islands, the Philippines, Borneo, the Dutch East Indies, and other island groups to secure a vast resource area and territory behind which to defend these gains.

Japanese leaders, however, suffered from “victory disease,” and instead of building up their defenses in depth to withstand the American counterattack, they continued their offensive. They tried to isolate Australia and threaten India. The result was the flawed Japanese attack against Midway in early June 1942, which led to the destruction of



A “No Parking” sign in Rome during World War II. Allied forces entered the city on 5 June 1944.

four fleet carriers, fatally weakening the Japanese navy.

Russia Fights Back

Hitler returned to the offensive on the eastern front in summer 1942, but only had strength to attack to the south, aiming for Stalingrad and Soviet oil facilities by the Caspian coast. The distances exceeded German logistical capacity, and General Friedrich Paulus made a fateful decision to commit the German Sixth Army to a fight for Stalingrad. Under General Vasili Chuikov, the Soviet Sixty-second Army engaged in a valiant, desperate defense featuring house-to-house and even floor-to-floor resistance.

As the battle for Stalingrad raged from summer into the fall of 1942, General (later Marshal) Georgi Zhukov planned for a riposte, positioning vast Soviet forces on the vulnerable flanks of the German

position at Stalingrad; the Soviets intended to crash through Romanian and Hungarian positions, race around the German Sixth Army and Fourth Panzer Army, and effect a double envelopment. The Soviets struck on 12 November, and several days later the spearheads met at Kalach and cut off the Germans; in early February 1943, the last survivors surrendered. The Soviets followed this victory with an offensive that pushed the Germans out of Caucasia.

When the spring thaw halted operations, there was a bulge into German defenses around Kursk, and Hitler planned for a double envelopment to destroy Soviet positions after which, presumably, he would go on the defensive. But Hitler delayed the start of Operation Citadel many times, waiting for the new, heavy German tanks, and this delay allowed Zhukov to plan for the expected German advance. The greatest tank battle in history began on 5 July 1943, and the German pincer effort from the north quickly stalled; however, the attack from the south, featuring the cream of the German ground forces, made some headway before Hitler suspended offensive operations owing to the Allied invasion of Sicily. Thereafter, the Soviets seized the initiative and by early fall 1943 freed the eastern Ukraine of German forces; they continued advancing into winter 1943 into the western Ukraine, creating a huge bulge on the southern flank of German Army Group Center.

The force and space ratios on the eastern front clearly favored the Soviet Union. Had Germany not attacked at Kursk and had it dedicated its limited productive capacity to defense, German tactical superiority might have withstood Soviet logistical superiority. But Hitler threw away precious panzers and artillery at Kursk, and the Soviets halted operations only when their supply lines ran out.

On 20 June 1944, the Soviets launched Operation Bagration. The Soviet military achieved a great surprise, fooling German commanders in the east into believing that the attack would go south; the Germans concentrated their limited panzer resources there, largely leaving Army Group Center without tanks. The Soviets attacked, and surged past German positions before the infantry could react or retreat.

Generals think war should be waged like the tournaments of the Middle Ages. I have no use for knights; I need revolutionaries. • **Adolf Hitler (1889–1945)**

The advance carried from pre-1939 Russia all the way to the Vistula River and Warsaw in August, when Soviet forces outran their supply lines and halted.

In Air and at Sea

Meanwhile, on other fronts, the Axis powers retreated. To respond to Soviet calls for a “second front,” the United States and Great Britain opened a strategic bombing campaign. Before the development of long-range fighters, the U.S. Eighth Air Force, bombing in daylight, suffered heavy losses, while the nighttime Royal Air Force did little damage against German industrial targets. But Hitler wanted to maintain home front support and gradually withdrew fighter squadrons from the eastern front, and later from France and Italy, to defend Germany. After mid-1943 and the appearance of long-range American fighter planes, the outcome began to favor the Allies.

Similarly, the United States won the Battle of the Atlantic. At first, German U-boats enjoyed great success against the vulnerable American East Coast, and later in Caribbean and South Atlantic waters. Soon the United States constructed more cargo ships than the Germans could sink, and they built escort aircraft carriers, which accommodated only twenty

airplanes. The U.S. Tenth Fleet, organized around these carriers and their support ships, hounded German submarines, denying them open areas in which to operate and to surface for battery recharging. The Allies sank more than 80 percent of German submarines.

The Ground War

Finally, the Western Allies began to contest the German army. In November 1942, they launched Operation Torch against French northwest Africa to complement the British Eighth Army’s attack on Erwin Rommel’s Afrika Corps positions near El Alamein in the Western Desert of Egypt. By early May 1943 they forced the Axis surrender in Africa. On July 10, they launched Operation Husky, the invasion of Sicily, and after a six-week campaign crossed into Italy. The Italian government surrendered in September, and most Italian army divisions melted away. The Germans under Field Marshal Albert Kesselring defended well, and progress up the Italian peninsula was slow and costly, but the drain on German resources meant that German commanders could not count on reinforcements from other theaters. On 6 June 1944, the Allies launched Operation Overlord,



Charles de Gaulle inspects troops in North Africa after American and British forces freed the region from German control.



U.S. troops waded through water and German gunfire at Normandy on D-Day, 6 June 1944. FDR Library.

the invasion of France, commanded by U.S. army general Dwight Eisenhower. Three airborne divisions landed during the night, and five infantry divisions assaulted five beaches: Gold, Sword, Juno, Omaha, and Utah. Despite the difficulty of the hedgerows in Normandy, the Allies brought men and equipment ashore in the expanding beachhead. In late July 1944, the U.S. army launched Operation Cobra; as American forces moved down the Cotentin Peninsula to Avranches and broke out and around the German defense, the U.S. Third Army under General George Patton became operational, and it quickly spread west into the Brittany peninsula and east toward the Seine above Paris. German troops were surrounded near Falaise, and an invasion in southern France, Operation Dragoon, sent American and Free French troops up the Rhone River Valley to meet Patton's forces near Dijon, cutting off German forces in France.

After Midway, the United States seized the initiative against Japan. At first, it was the desperate fighting on Guadalcanal from August 1942 to February 1943, and then the U.S. advanced on two axes. Admiral Chester Nimitz led the navy advance to the Gilbert Islands and Tarawa in November 1943, to the Marshall Islands and Kwajalein in February 1944, and then to the Marianas in June 1944, and the invasions of Guam, Saipan, and Tinian along with the

Battle of the Philippine Sea (also called the Marianas Turkey Shoot). Army general Douglas MacArthur commanded a mixed force that moved up the Solomon Islands chain and leapfrogged Japanese strongpoints on the New Guinea coast, while isolating the 100,000-man Japanese Army in Rabaul in New Britain. In October 1944, MacArthur invaded the Philippines, although fighting would continue there until war's end. Meanwhile, the Central Pacific offensive moved to Iwo Jima in the Bonin Islands in January 1945 and Okinawa in the Ryukyus in April 1945.

The attack on the Philippines cut off Japanese forces in Southeast Asia, and an Anglo-Indian offensive pushed the Japanese through Burma, though progress, owing to the difficult terrain, was slow. Meanwhile, Chinese government forces managed to occupy a great many Japanese divisions while conserving strength for the expected renewal of the civil war with the Communists.

Victory in Europe

In fall 1944, the pressure on Germany continued. Strategic bombing of Germany caused many casualties, although Albert Speer achieved a production miracle for war goods. The Red Army paused in the center, sweeping into the Balkans and trapping



Civilians salute and welcome a division of the French army returning to France circa 14 August 1944 after resisting German attack. National Archives.

the Germans along the Baltic. By December 1944, the Soviets were at the 1939 German-Polish border and near Budapest in Hungary waiting to resume the offensive. In the west, Eisenhower ordered a halt in operations for winter, owing to supply difficulties. In late December 1944, Hitler launched a desperate gamble, an attack against weak American forces in the Ardennes, hoping to drive toward Antwerp, cut off the British, and force the Americans to surrender. But the German attack lacked sufficient fuel reserves; the Americans, especially around Bastogne, defended fiercely, and when skies cleared Allied airpower battered German formations. As the Soviets launched a winter offensive, the Allies drove to the Rhine and in March 1945 crossed, first at Remagen, and then along the upper Rhine and finally to the north. Meanwhile, the Red Army drove on Berlin, and Soviet forces under Zhukov and Marshal Ivan Koniev engaged in a race to Berlin, which was won by Zhukov's men at terrible cost. In late April elements of the U.S. and Red armies met at Torgau on the Elbe, and Germany was divided. Hitler committed suicide in his underground bunker in Germany, and on 7 May, German commanders surrendered to Eisenhower in Rheims, France, followed on 8 May 1945, with a surrender to Soviet commanders in Berlin.

Japan Surrenders

The Japanese continued to resist, and American experts predicted a bloody and costly attack on the Japanese home islands. However, in July 1945, at Alamogordo, New Mexico, scientists exploded the first atomic bomb, and several weeks later the United States dropped an atomic bomb on Hiroshima (6 August) and one on Nagasaki (9 August), compelling Japan's surrender on 2 September 1945 in Tokyo Bay. World War II ended.

Aftermath

The end of World War II brought with it a wide range of significant consequences, many of which were aimed at preventing similar conflicts in the future. War crimes committed by the Axis powers, including the Holocaust, were addressed at the Nuremberg Trials and the Tokyo War Crimes Trial. The United Nations was established with the explicit aim of maintaining international peace and security. The Universal Declaration of Human Rights was instituted as a guarantee of the rights for all human beings. The international economic and financial architecture was overhauled and increasingly managed and regulated by the World Bank, the International Monetary Fund,

and the World Trade Organization (formerly the General Agreement on Tariffs and Trade). The state of Israel was established. Many former colonies won their independence, while other states such as Germany and Korea were divided ideologically and politically. Women began to find new and expanding roles in society on the back of their important contribution to the war effort. War-time technologies, innovations, and management systems were put to good peacetime uses, few more important than the jet engine and the now indispensable computer. Particularly important, learning from the mistakes of the interwar period, Europe (including Germany) was rebuilt under the Marshall Plan, as was Japan, which would soon modernize and rise to major economic power status.

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See also American Empire; Churchill, Winston; Fascism; Genocide; Hitler, Adolf; Holocaust; Roosevelt, Franklin Delano; United Nations

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Writing Systems and Materials

Throughout history, writing has played a significant role in the generation of knowledge, the advancement of ideas, and the growth of societies. While many of the details concerning the development of writing remain a mystery, there is sufficient evidence to trace some of the major stages in the evolution of writing and to examine the great variety of writing systems and materials that have been, and continue to be, developed.

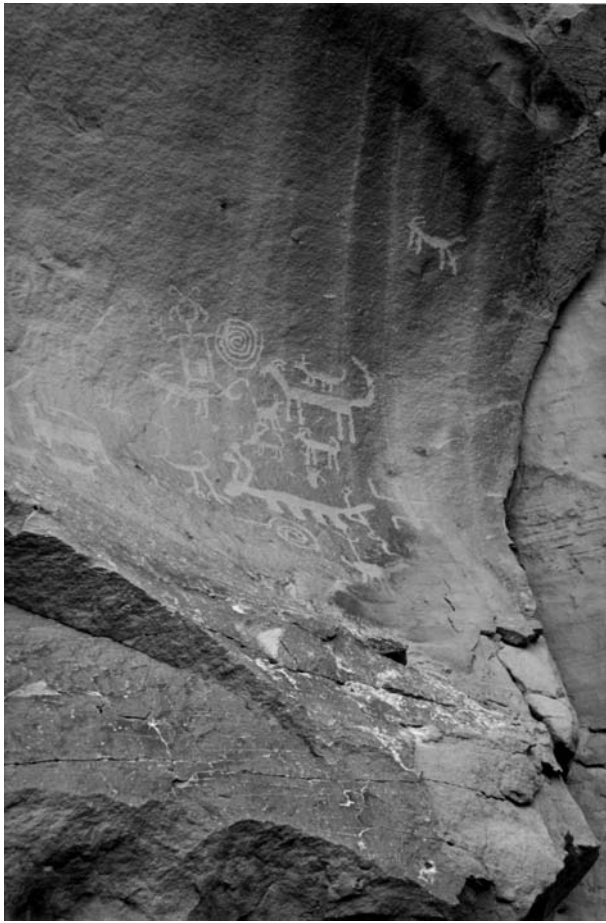
Some have argued that the very earliest evidence of written communication comes in the form of paintings of animals on cave walls found in southern France and dated to the Ice Age some twenty thousand years ago. Such artistic representations may have been used to convey ideas about both the mysteries and rhythms of the natural world or to provide a narrative—in visual form—describing the relationship of humans to their immediate environment. Several of these paintings bear very distinctive markings, such as dots, signs resembling body parts (e.g., the human hand), and symbols reminiscent of the letter *P* in the English alphabet. Indeed, a variety of unusual prehistoric symbols have been found that may well support the claim that some form of written communication has long been an essential feature of the larger human experience.

Ancient Writing

Many credit the Sumerians of ancient Iraq with the creation of the first formal system of writing circa 3500 BCE. In its very earliest stages, it consisted of numerical symbols and pictographs—that is,

simple visual representations of objects in the natural world—etched on clay tablets, which were then dried or baked for the purposes of preservation. At first, a pointed reed stylus appears to have been used by Sumerian scribes. Later, three significant developments in written Sumerian would occur. The first was the rotation of the original pictograms ninety degrees in a counterclockwise direction; it has been suggested that this modification facilitated ease in writing. The second, a shift to an angled (or wedge-tipped) stylus, can be classified as a technological change. The reason for this change is not known; however, it enabled the original pictograms to be rendered with a series of wedge-shaped, or cuneiform, impressions made on the usual soft clay medium. The third was the radical simplification of these cuneiform signs so that in time they bore little resemblance to their pictographic progenitors. Initially, these signs were baroque in detail, and the intent seems to have been to reproduce, to the extent possible, a cuneiform version of the original pictogram. In time, this no doubt proved to be untenable and unnecessary as the administrative demands on scribes—and their familiarity with the writing system itself—increased. This change may have accompanied a concomitant development in which the original pictograms came to stand for Sumerian lexemes (whole words), morphemes (distinct parts of speech used to form words and delimit syntactic relationships), and phonemes (distinct sounds used to form morphemes and lexemes). Furthermore, this move toward simplification and abbreviation may be related to another phenomenon—the minimalist tendency in Sumerian writing.

Scholars have noted that Sumerian texts are sometimes written in a very terse style in which certain



Rock carvings such as this one, made by ancient Native Americans in New Mexico, as well as cave paintings depicting animals, are considered to be among the earliest forms of written communication.

parts of speech are excluded. It has been suggested that this might be an indication that the written text itself was intended to serve as a mnemonic device to jog the memory of the reader, who would possess the ability to fill in the existing gaps. Some feel that the ancient Near Eastern antecedent to the Sumerian writing system consisted of inscribed clay tokens and *bullae* (clay envelopes) into which the aforementioned tokens were inserted. The earliest of these have been dated to 8000 BCE and may have been used as media of economic exchange and for record-keeping purposes. The shapes and etchings that these tokens and *bullae* bear may have served as the foundation upon which the Sumerian writing system was built.

Hieroglyphic writing, which also began as pictographic and later gave rise to several alternative forms (including Hieratic, Demotic, and Coptic), was

developed in Egypt also during the fourth millennium BCE (c. 3000 BCE). Harappan civilization in the Indus Valley also spawned a distinct writing system of its own circa 2500 BCE consisting of a combination of pictographs and symbols. In addition to these very ancient exemplars, many additional writing systems were created in early antiquity. These include: Proto-Elamite (c. 3050–2900 BCE, Iran); the Phaistos Disc script, Linear A, and Linear B (nineteenth, eighteenth, and fourteenth centuries BCE respectively, Crete); Proto-Sinaitic (early second millennium BCE, Egypt); Cretan Hieroglyphic (c. 2100–1700 BCE); Ugaritic (fourteenth century BCE, Syria); Oracle-Bone Script (c. 1300 BCE, China); Hebrew (c. tenth century BCE, Israel); Brahmi and Karosthi (c. 300 BCE, India); Etruscan (eighth century BCE, Italy); Zapotec (sixth century BCE, Mexico); Epi-Olmec/Isthmian (second century BCE, Isthmus of Tehuantepec, Mexico); Mayan (c. 500 BCE, Mexico); Meroitic (c. fourth century BCE, Sudan); Phoenician (tenth century BCE, Lebanon); and Greek (c. eighth century BCE).

Others could be added to this list, but this selection is sufficiently representative to give an idea of the antiquity and tremendous diversity of the world's writing systems.

From a historical perspective, it would not be an exaggeration to say that written communication has been an essential part of human interaction and a major factor in the development of complex societies. Writing remains a vital part of twenty-first-century life, and new systems, media, and technologies continue to be developed. One recent encyclopedia lists some four hundred distinct writing systems (past and present) from around the world, a clear attestation that writing is a global rather than an isolated human phenomenon.

Analyzing Writing Systems

A number of different typologies are used in the classification of writing systems, each of which is based on theoretical assumptions about the manner in which they function, their relationship to spoken

Action, looks, words, steps, form the alphabet by which you may spell character. • **Johann Kaspar Lavater (1741–1801)**

languages, and the particularities a given categorization scheme is designed to highlight. For some, a distinction is made between semasiographic and glottographic systems. The former uses visual images to indicate ideas directly, while the latter employs signs as representations of actual spoken sounds. Others make a distinction between protowriting (e.g., systems using pictograms) and full writing, the latter of which can be further subdivided into syllabic and consonantal systems. Still others make a distinction between pleremic and cenemic writing. Pleremic systems use written signs to denote morphological essence and lexical meaning. The cuneiform writing system of ancient Sumer would be one example of this type of writing. Cenemic systems use signs to represent distinct phonological units only. The Phoenician, Greek, Latin, and English alphabetic scripts are cenemic in nature.

Surfaces used for written communication have been and continue to be determined in part by the raw materials available in a given geographical location, the genre and purpose of that which is to be written, and the cultural conventions governing the art of writing. There is evidence from around the world for the use of the following: bone, skin (human and animal), shell, rock, clay, textiles, bamboo, bark, cut stone, metal (precious and base), ceramic fragments (i.e., broken pottery), leather, papyrus, parchment, paper, and electromagnetic storage devices. Methods of writing include carving, stamping, painting, engraving, chiseling, burning, sewing, weaving, spraying, incising, and tattooing. Implements used in writing have varied widely and continue to do so. Some of the more important are rocks, reeds, rushes, brushes, quills, pens (with an assortment of metal and fiber tips), graphite pencils, chalk, wax crayons, and electronic data entry devices (e.g., computer keyboards or microphones used in conjunction with voice-recognition software that transforms spoken words into electronic text). Technological advances, the emergence of new forms of writing, and the adaptation of norms in written expression are just a few of the factors contributing to such change.

Close examination of the world's many writing systems reinforces the importance of three general maxims. Those seeking to understand the development of writing within a global context should keep them in mind. The first is that writing systems are as varied as the societies in which they are produced. The second is that written communication is governed by the same social, political, religious, and artistic conventions that influence the creation of other cultural artifacts. The third is that while there are historical data that enable one to trace the diffusion of writing systems in geographically contiguous areas or propose theories that account for their spread through trade, colonization, and other forms of cultural contact, there remain many unanswered questions about the development of writing. Following are a few of



Written Chinese characters, which comprise ideograms and pictograms, provide a visual expression of a concept or an object in a way that purely phonetic scripts do not.

Do not consider it proof just because it is written in books, for a liar who will deceive with his tongue will not hesitate to do the same with his pen. • **Maimonides (1135–1204)**

the more important. Are there psychological factors that elicit written communication? Is there a communicative impulse in humanity that can only be given full expression in writing? What is the relationship between pictographic writing and other forms of visual artistic expression? To what extent have social elites been responsible for creating systems of written communication, and in what ways have such systems contributed to the establishment of political and religious institutions?

Furthermore, there are some equally challenging questions that remain about contemporary writing systems, many of which are the offspring of the ancient precursors noted above. These deserve additional attention. Are alphabetic writing systems limited in their capacity to convey certain concepts and ideas? Do pictographic systems increase or decrease overall literacy rates? In light of global socioeconomic and political trends, and in the absence of an international lingua franca, do pictographic writing systems offer a more accessible and effective means for communication across cultural and linguistic barriers?

There are, of course, no simple answers to these questions. In addressing them, however, one can shape an agenda for the study of writing in the future that is methodologically sound and open to contributions from the social sciences and the humanities.

It is clear that writing will figure prominently in twenty-first-century communication. It may be that the future will witness the creation of new and experimental writing systems aimed at promoting justice, egalitarianism, mutuality, and other values needed to sustain our global community.

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See also Communication Media; Dictionaries and Encyclopedias; Letters and Correspondence; Libraries; Mass Media; Paper; Script Decipherment; Technology—Computer

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Yongle Emperor

(1360–1424)

THIRD EMPEROR OF CHINA'S MING DYNASTY

Zhu Di, son of the founder of the Ming dynasty, usurped the throne from his nephew in 1402 to become the Yongle emperor. During his reign he extended the power and influence of the dynasty, commissioned naval expeditions to the Indian Ocean, moved the imperial capital to Beijing, and oversaw important scholarly enterprises.

The Yongle emperor (reigned 1402–1424) of the Ming dynasty (1368–1644) was one of the most dynamic and aggressive rulers of China. Committed to ventures on a grand scale, he influenced China and East Asia for generations to come. He extended Chinese power to Mongolia and Vietnam, dispatched great maritime expeditions to the Indian Ocean, launched massive literary projects that shaped the culture of the Chinese elite, reorganized the imperial bureaucracy, and constructed a new imperial capital.

Yongle (actually his reign title, though it is the name he is most frequently known by; the family name of the rulers of the Ming was Zhu and Yongle's personal name was Di) originally was not destined for the imperial throne, however. His father, the Hongwu emperor (reigned 1368–1398), the founder of the Ming dynasty, designated his eldest grandson as his successor. But the Jianwen emperor (reigned 1398–1402), Yongle's nephew, lacked Yongle's shrewdness and military expertise. Within a year of Hongwu's death, Zhu Di rebelled against Jianwen and led his troops to victory over the emperor's forces. In all likelihood, Jianwen died when the imperial palace in Nanjing caught fire. At the age of forty-two, Zhu Di ascended the throne on 17 July 1402 as the Yongle (Perpetual Happiness) emperor.

Historians generally agree that Yongle's reign represents a second founding of the Ming dynasty, a significant transformation of policies established by Hongwu. Like his father, Yongle distrusted the Confucian scholar-officials who headed his bureaucracy; but, in the interest of stable rule, he restored ministries that Hongwu had abolished and allowed civil officials considerable independence in daily affairs. He moved the capital to Beijing, near his northern power base, and employed 1 million workers in its reconstruction, which included the building of the Forbidden City, now the principal relic from his reign. To bolster civil officials in the capital and provinces, Yongle ordered the compilation of two compendia of texts and commentaries of Confucian classics that became standard works for preparing for the civil-service examinations. He also commanded more than two thousand scholars to produce *The Great Encyclopedia*, a compilation of accumulated knowledge that ran to about eleven thousand volumes (or 50 million words). Gargantuan in scale, it proved so expensive to reproduce that large parts of it were lost long after its completion in 1408.

In his government reforms and literary projects, Yongle performed as a traditional Chinese sovereign. But in his foreign policy, he employed military commanders and the burgeoning eunuch establishment. He was a warrior, matched only by Khubilai Khan (reigned 1260–1294), the first emperor of the Yuan dynasty (1279–1368) in his militarism. Commanding armies some 200,000 men strong, he invaded the steppes repeatedly after 1410, inflicting defeats on Mongol khans three times though he was unable to duplicate certain successes. These campaigns wore him out, and he died retreating from Mongolia in

A nation's treasure is in its scholars. • Chinese Proverb



Anonymous court painter, *Portrait of the Yongle Emperor [Zhu Di]*. Ink and color on silk. Zhu Di became the third Ming emperor after he usurped the throne.

1424. Relying on his offensive policy, he withdrew military posts on the northern border that had been established by Hongwu, leaving China vulnerable to attack in the absence of an emperor as warlike as himself. To some extent, the defensive perimeter of the Great Wall, a late Ming construction, was a consequence of Yongle's bellicose military strategy more than a century earlier.

In 1406, Yongle ordered an expeditionary force of two hundred thousand men to invade Annam (in present-day northern Vietnam), an audacious attempt to incorporate the area into the empire. Successful for a time, Chinese aggression eventually provoked native resistance, and Yongle found his armies harassed by guerrilla warfare. After twenty years of casualties and expense, the Chinese were driven out by 1427. At the same time as the Vietnam imbroglio, Yongle took the

action for which he is now most famous: he dispatched the largest maritime expeditions the world had ever seen. From 1405 to 1424, six fleets, sometimes comprising two hundred ships and as many as twenty-eight thousand men, sailed to Southeast Asia, India, Iran, Arabia, and East Africa. Commanded by the famous eunuch-admiral Zheng He (1371–1435), the expeditions were simultaneously displays of Chinese majesty, attempts to impose Chinese suzerainty (especially in maritime Southeast Asia), and commercial ventures aimed at suppressing private Chinese seaborne trade.

On all fronts—Mongolia, Vietnam, the voyages of Zheng He, the reconstruction of Beijing—Yongle vastly overextended Chinese resources, draining the treasury and causing widespread discontent. He ruled with an iron fist, putting his extraordinary ventures in the hands of military men and eunuchs, groups repugnant to the Confucian elite. He left the empire weakened before Mongol attacks; he stimulated a Vietnamese nationalism that soon proved deadly to neighboring kingdoms; and he insured that no future emperor would seek to dominate the southern seas. Autocratic, resolute, and daring, Yongle had a brilliant reign but left his successors a troubling legacy.

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See also China; Exploration, Chinese; Zheng He

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Zheng He was a diplomat, explorer, and fleet admiral who, between 1405 and 1433, made seven voyages to the Indian Ocean. His expeditions and four naval and land battles brought more than thirty kingdoms into the Chinese economic sphere.

Zheng He commanded seven great maritime expeditions dispatched by emperors of China's Ming dynasty (1368–1644) to Southeast Asia, India, Iran, Arabia, and East Africa between 1405 and 1433. The fleets were launched by the Yongle emperor (reigned 1402–1424), although the last expedition in 1431 was ordered by the Xuande emperor (reigned 1426–1435). Yet Zheng He, an imperial servant and Muslim eunuch, eventually became more renowned than those formidable sovereigns. He is regarded as a tutelary deity in Indonesia, as a folk-hero in fiction of the Qing dynasty (1644–1911), as an exemplary patriot in textbooks of the People's Republic of China, and as the Chinese counterpart of Vasco da Gama (c. 1460–1524) and Christopher Columbus (1451–1506) in modern studies of world history. A recent work even makes the fantastic claim that his captains discovered and colonized America and Australia in 1421.

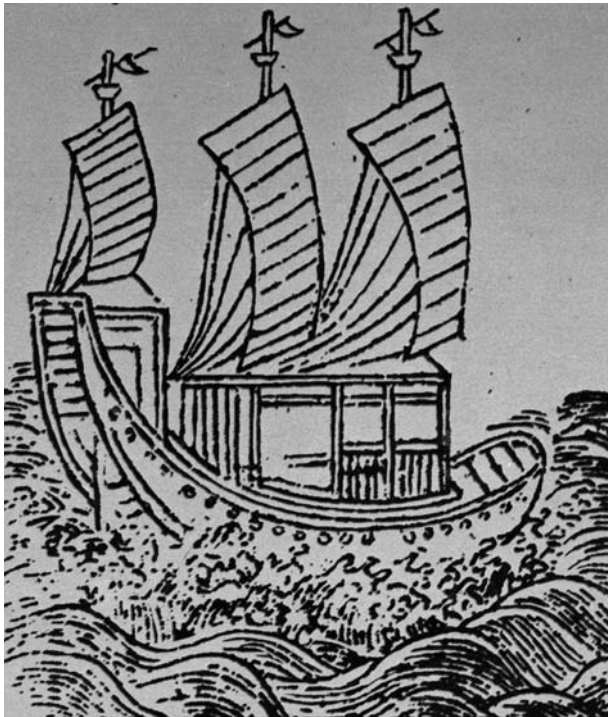
A native of Yunnan in southwestern China, Ma He (as Zheng was born) traced his descent from Sayyid Ajall (c. 1210–1279), a Muslim from Bukhara (in contemporary Uzbekistan) who governed the province for Khubilai Khan (reigned 1260–1294), founder of the Yuan dynasty (1279–1368). When the Ming conquered Yunnan in 1381, the eleven-year-old Ma was among many boys castrated and enrolled in the eunuch establishment of the dynasty. Enterprising

and competent, Ma commanded troops under the future Yongle emperor. As a reward for Ma's valor in a crucial encounter, the emperor gave him the name Zheng, the name of the battle site.

When the emperor commissioned his maritime expeditions, he placed Zheng He in command, entrusting him with the powers of a viceroy. Typically comprising some two hundred ships and twenty-eight thousand men, the fleets indisputably were the greatest the world had ever seen and included the largest wooden ships ever built. But debate persists about everything else, such as the dimensions of the biggest vessels, called treasure ships, the nature of the navigation charts employed, and the timing and destinations of particular voyages. Above all, there is no consensus on the purpose of the mammoth expeditions. In part, confusion and mystery surrounds them because of the opposition they encountered among Confucian scholar-officials of the empire, a powerful group that deplored the eunuchs in control of the fleet. In 1477, when a prominent eunuch administrator proposed a renewal of the voyages, Confucian ministers ordered destruction of the records of the Yongle venture.

While this was a grave loss to history, the ambitions of the Yongle emperor suffice to explain the task he gave Zheng He. Having usurped the throne from his nephew, the Jianwen emperor (reigned 1398–1402), Yongle sought a warrant of legitimacy by enrolling tribute clients abroad, a task made effortless by display of awe-inspiring force. An aggressive and militaristic ruler, he led five campaigns against Mongol khans and, in 1406, he ordered the invasion of Vietnam. The fleets complemented this last endeavor, with the Ming sovereign curbing the power

History is a guide to navigation in perilous times. History is who we are and why we are the way we are. • David C. McCullough (b. 1933)



Woodcut of an oceangoing ship from the time of Zheng He. Ink on paper. From the book *Wu-pei chih* (1626), by Mao Yuan-i.

of kingdoms in Java and Thailand while also providing an umbrella of protection over the port of Melaka and those of the northern Javanese coast. Given his large and experienced army, Zheng He naturally met little opposition. In 1407, he intervened in a struggle for power in the Majapahit kingdom of Java, and soon after, his troops destroyed ten pirate ships and killed numerous followers of Chen Zuyi, the Chinese chieftain of Palembang in Sumatra. In 1411, Zheng fought off an attack by Vira Alakasvara, the monarch of Sri Lanka (Ceylon), and shipped the hapless ruler to captivity in China.

These forceful actions cannot be separated from the commercial dimensions of Zheng He's voyages. In the interests of imperial security, Yongle aspired to suppress Chinese private seaborne trade; hence Zheng's ships came loaded with Chinese commodities, especially silk and porcelain, goods to be sold

to eager customers as well as gifts to be bestowed on compliant rulers. The junks returned to China laden with black pepper, spices, sandalwood, precious stones, Indian cottons, and exotic animals (especially giraffes and elephants).

Whether acting as admiral of the fleet, troop commander, or trade commissioner, Zheng invariably was an agent of Yongle, not an adventurous explorer in search of new sea routes and undiscovered lands. Less significant in world history than Columbus or da Gama, Zheng loyally and capably obeyed the will of his sovereign. After Yongle died, there was only one more expedition, ordered by Xuande to take tribute envoys back to their kingdoms. In all likelihood, Zheng He died on this final voyage, and he perhaps is buried near Nanjing, not far from where his treasure ships departed for the southern seas.

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See also China; Exploration, Chinese; History, Maritime

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Zhu Yuanzhang

(1328–1398)

FOUNDER OF CHINA'S MING DYNASTY

Zhu Yuanzhang rose from a life of suffering and adversity to become one of the most powerful and autocratic emperors in Chinese history. His thirty-year reign as founder of the Ming dynasty (1368–1644) was characterized by two radical policies: the most far-reaching, innovative agrarian reforms prior to those of Mao Zedong in the mid-twentieth century; and a despotic control of government characterized by bloodthirsty and terrifying purges.

Zhu Yuanzhang, the founding emperor of the Ming (Bright or Radiant) dynasty (1368–1644), reigned from 1368 to 1398 with the reign title Hongwu (Vast Military Power); his posthumous abbreviated title is Taizu (Grand Progenitor).

Zhu Yuanzhang was the third son of an impoverished peasant family living in Haozhou County along the Huai River in present-day Anhui Province. When he was a teenager, a combination of drought and plague carried off his parents and oldest brother, leaving him destitute. Neighbors helped him find refuge at a Buddhist temple, where he became a monk. But after a few weeks the temple ran out of food and he was forced to leave and go begging in the countryside.

For three years the famished and unprepossessing youth roamed around east central China observing the effects of famine and dynastic breakdown on farming people. During that time he became associated with the subversive Red Turban movement, whose goal was the overthrow of the Mongol Yuan dynasty (1279–1368). He then returned to his temple and worked on improving his reading and writing skills. In 1352, when government forces burned down the

temple, he joined a Red Turban rebel unit. Rising rapidly through the ranks, he assembled a fighting force and branched out on his own. He developed a base in the lower Yangzi (Chang) River region and in 1356 captured the strategic city now called Nanjing.

During this period of civil war Zhu built up his armed forces, attracted scholars to his side, and established himself as an imperial contender. Thanks to growing popular support and outstanding military aides he was able to defeat all other claimants and become the only supreme ruler in Chinese history to rise to power from a destitute background. In 1368 he declared himself emperor. Before the year was out his forces had driven the Mongol rulers out of their capital (present-day Beijing) and sent them fleeing back to Mongolia.

Emperor Zhu established a harsh but powerful autocracy. He had risen to the top through military power and iron discipline. He recognized the need to rely on the educated elite to install a civilian regime. But as a once destitute peasant he maintained a seething distrust of such people, and as a contender for power he was suspicious of opposition and ready to suppress it at all costs. His thirty-year reign was characterized by two radical policies: first, the most far-reaching and innovative agrarian reforms prior to those instituted by Mao Zedong in the mid-twentieth century, and second, a despotic control of government characterized by bloodthirsty and terrifying purges.

As an agrarian reformer, the new emperor was driven by the desire to restore peace and production to the rural people. More than any other ruler before his time, Zhu identified with peasants and sought to ameliorate their lives. Throughout the north China



Anonymous Ming court painter, *Portrait of Zhu Yuanzhang*. Ink and color on silk. Zhu founded the Ming dynasty and reigned as Emperor Hongwu. National Palace Museum, Taipei.

plain he moved hundreds of thousands of people, many of them stranded by the civil war, back onto abandoned land. In 1374 alone 140,000 households from eastern China were resettled in the emperor's native region. Then he initiated intensive surveys of the tax and landholding systems in this prime agricultural region. The tax information was recorded in yellow-bound registers and the landholding information in "fish scale" registers, so named because of the contours of the land charts. These registers, copies of which were maintained in central and local government offices, constituted the most thorough land survey in China prior to modern times. Although comparable to the Domesday survey carried out across England in the eleventh century by William the Conqueror, they were far larger in scope and consequence.

In addition the emperor installed a method of rural fiscal government, known as the *li-jia* system. Under this system, households were organized into groups of 110, representing a *li* (administrative

neighborhood). The ten wealthiest families were appointed to serve annually as leaders of the *li*. The remaining families were divided into ten *jia* (units of ten families). Each of these *jia* families also served annually as head of their *jia*. Small family units were included as add-ons. Later in his reign the emperor introduced an overlapping system of neighborhood elders (*li-lao*) to handle local disputes and offenses and punish mischief-makers.

The main aim of all this rural surveying and organization was to equalize the land and labor tax burden and get registration and collection of taxes out of the hands of rapacious bureaucrats and into those of producers. The neighborhood elder system was intended to prevent local officials from exploiting crime as a source of income and patronage. Elders were required to uphold social values (such as respecting and honoring one's parents), and to promote agricultural work and water conservation. If they had complaints, they were authorized to visit Nanjing and report them in person. An important piece of this agrarian policy was the establishment of agricultural colonies to support the emperor's military forces, thus ensuring that the latter would not be dependent on the rural fiscal system. Throughout his reign the emperor continued to refine these initiatives.

Emperor Zhu's harsh policies toward officials and educated people grew out of his experience of oppression and hardship as a youth. As ruler of all under heaven he deplored waste and hated ostentation. When a serious drought struck eastern China shortly after his accession, he clothed himself in white mourning dress and straw shoes and prayed for several days out in the open until the rains came. These austere attitudes carried into the organization of the bureaucracy. He reduced the complement of local officials, subjected them to intense scrutiny and cast doubt on their integrity. But it was the central government officials who suffered most from the emperor's aspersions. Several purges were carried out in which thousands of officials and their families suspected of corruption or treachery were rounded up and put to death. A famous poet, whose words were construed as criticism, was sliced in half. In numerous ways



underperforming and unlucky officials were derided, humiliated, and on occasion publicly flogged. Only the Empress Ma, a woman of great strength and magnanimity, was capable of restraining the emperor's anger. After she died in 1382, he lived on alone and embittered.

A unique aspect of Emperor Zhu's rule was the establishment of his administrative capital in Nanjing, itself an ancient capital during early periods of disunity. He built the city into a formidable fortress surrounding the imperial quarters, with everything positioned to take advantage of the location's geomantic and strategic features. Nanjing gave access to the crucial eastern China region on which the regime depended for its fiscal resources. It also enabled the emperor to control wealthy localities that had supported other contenders. After Emperor Zhu died, the usurping Emperor Chengzu (Zhu's fourth and oldest surviving son) moved the main capital to his base in north China, henceforth named Beijing (Northern Capital; Nanjing, in contrast, means Southern Capital). Nanjing remained an important administrative

center and would again serve as a capital during the massive anti-Manchu Taiping Rebellion (1851–1864) and in the Nationalist era (1928–1949).

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See also China; Taiping Rebellion

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Zimbabwe, Great

The state of Great Zimbabwe flourished circa 1290 to 1450 in southern Africa. The ruins of its capital, which was built from massive walls of stone, reflect the grandeur and exquisite workmanship of the original. The state was ruled by a small political elite that also controlled networks in the Indian Ocean trading economy as an exporter of gold.

Visitors to the ruins of the former capital of Great Zimbabwe, a state that flourished in southern Africa from approximately 1290 to 1450, may be struck by two observations. First, the impressive stone structures emerging from the savanna still convey the former wealth and importance of the site. In the local language, Shona, *zimbabwe* means “houses built of stone,” and there are many *zimbabwe* in the region, in particular in the area bounded by the Limpopo River in the south and the Zambezi River in the north. Great Zimbabwe thus represents a prominent example of political power and architecture; in fact it was the largest stone structure in Africa south of the Sahara built before European colonization in the late nineteenth century. While having only extended across a fraction of what today is the national territory, its legacy is so important that in 1980 the newly independent country was named Zimbabwe, and the image of an artifact, the stone-carved Zimbabwe bird, of which eight were found at the site, became part of the national flag.

Second, a visitor not too familiar with the history of Great Zimbabwe is likely to be surprised by the artifacts exhibited at the museum on site. These range from locally produced tools to luxury items from the Indian Ocean rim, such as glass beads from India

and porcelain from China. Despite Great Zimbabwe’s location several weeks’ march by foot from the coast, the political centralization that led to its formation was based on its links with the Indian Ocean economy, exporting gold in exchange for cotton cloth and luxury items.

Origins

Great Zimbabwe’s cultural achievements, wealth, and economic success, expressed in its stone architecture, so gravely contradict prejudiced notions of the African past that since the 1870s, a range of European travelers, archaeologists, and historians, have attributed them to outsiders. In particular, the white-settler regime during the colonial period (1890–1980) claimed that some allegedly superior civilization, such as the ancient Egyptians or the Phoenicians, must have been responsible. Ironically, however, already in the early twentieth century, archaeologists had proved that local Shona-speaking people had built the city.

As is the case elsewhere with agricultural societies, the origins of Great Zimbabwe as a centralized political state lie in its participation in long-distance trade networks, which generated sufficient wealth to sustain a political elite in a highly stratified society. Its rich gold deposits made the region so attractive to Swahili-speaking traders from the East African coast that in the thirteenth century caravan routes were established with Kilwa in East Africa, which became Great Zimbabwe’s most important trade partner on the Indian Ocean rim. Great Zimbabwe was thus incorporated into the Indian Ocean economy, exchanging precious metals, especially gold and from the fourteenth century also copper, for cotton cloth and



luxury items. The political elite controlled the long-distance commerce by taxing traders and through its networks of patron-client relationships with miners and agriculturalists. These networks rested upon the redistribution of accumulated wealth, particularly in the form of cattle. The unusually high population density at the capital city and division of labor within the state depended on sustainable agriculture. A shared religion manifest in ancestral worship and reverence of a high god contributed to political unity, which was further cemented through the authority of a king, advised by a group of male elders.

The City

Importantly, as the Zimbabwean historian Innocent Pikirayi points out, the capital of Great Zimbabwe was not merely a large village, but indeed a metropolis. Different population strata lived in close proximity, and the layout as well as architecture expressed power relations. In contrast to Zimbabwe elsewhere, where the walls functioned as defense structures, here they served to mark the city's three distinct areas. There is a hill complex, an elevation of granite rocks with steep slopes. On top, surrounded by a wall, were the living quarters of the king and his court. Interestingly, there is no water source inside this structure.

Thus, while access to this hilltop could easily be controlled by a few guards, it could not have withstood a siege for any significant period of time. At the bottom of the hill complex is the so-called great enclosure, where members of the political elite and traders, or as some historians suggest, the royal women, used to live. Today, most of the surrounding high wall, more than five meters tall, is still in place, with a massive stone tower inside. The religious or political purpose of this tower is debated. Between the hill complex and the great enclosure and beyond extends a valley, where the agriculturalists lived in the open savannah. All houses were at the time round huts constructed of mud and wattle. It is safe to assume that the city thus represented the wealth and power of the state, unifying its inhabitants while at the same time reasserting social stratification.

Decline

Two factors contributed to the decline of Great Zimbabwe in the fifteenth century. Most significantly, its elite lost control over the gold trade to competing states, especially to Munhumutapa further to the north, which rose to power in the mid-fifteenth century. Subsequently, the caravan routes were relocated and the region was cut off from the Indian Ocean trade. Secondly, the relatively high population density in an area with only one annual rainy season eventually caused much environmental stress. At Great Zimbabwe's peak up to 18,000 people lived in the city, extending over an area of approximately 720 hectares. Once the state could sustain its elite no longer, the city lost its purpose. Out-migration occurred, and political decentralization eventually led to the fragmentation of the state into small-scale local communities and the rise of states elsewhere in the region.

Implications

As a city built of stone, with a small political elite deriving its power from controlling the state's incorporation into the Indian Ocean economy through the

*If there are dreams about a beautiful South Africa, there are also roads that lead to their goal.
Two of these roads could be named Goodness and Forgiveness. • Nelson Mandela (b. 1918)*

export of gold, Great Zimbabwe represents common patterns of state building in the region between the tenth and nineteenth centuries. Great Zimbabwe's decline was typical for agricultural societies elsewhere, deriving from the ecological crisis caused by population concentration and its marginalization from long-distance trade. However, unique in the region is that the layout and the architecture of the city did not appear to have served defense purposes at all and instead were an expression and re-inscription of power relations between population groups.

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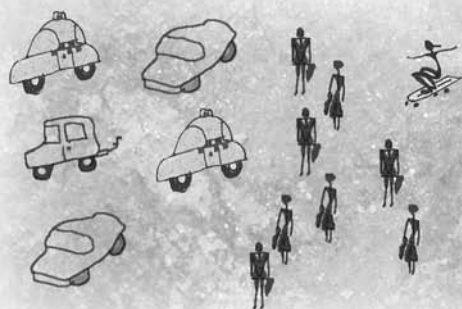
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Zionism

Zionism is a movement to establish a homeland for Jews who have been scattered throughout Europe. The word Zion refers to the land promised to the Jews by God in the Bible, but the activity of Zionism is almost exclusively political, rather than religious, because of Jews' understanding that the land is not to be inhabited until the coming of their Messiah.

The need for a Jewish homeland began in 70 CE with the destruction of the second Temple of Jerusalem by the Romans. Since that time Jews have lived as a minority group in many countries. Despite the diversity of cultural settings and political regimes during the centuries, they have been able to maintain their ethnic, religious, and linguistic characteristics. Because of their strong nationalistic identity, they have been subjected to prejudice—known as “anti-Semitism”—and even persecution in many of the countries to which they have migrated. As a result, the primary aim of Zionists has been to find a homeland (preferably in the Jewish ancestral home of Palestine) where they can gain political independence, develop Hebrew as the spoken language, and provide a community for Jews who have been dispersed for centuries.

Writers during the nineteenth century spread Zionist ideas throughout Europe. Moses Hess wrote two works outlining the return of Jews to Palestine, *Rome and Jerusalem* (1862) and *Plan for the Colonization of the Holy Land* (1867). Leo Pinsker wrote in his pamphlet *Auto-Emancipation* (1882) that “The Jews are not a living nation; they are everywhere aliens; therefore they are despised . . . The proper and only remedy would be the creation of a Jewish nationality . . . a home of their own.”

Theodor Herzl (1860–1904), an Austrian journalist, moved to the forefront of the movement with the organization of the first Zionist Congress at Basel, Switzerland, in 1897. Delegates at the congress called for a publicly recognized Jewish home in Palestine. During the remainder of his life Herzl negotiated with world leaders to gain support for the Zionist movement. In 1903 the British government offered a large tract of land in Uganda, East Africa, for a Jewish homeland. Herzl promoted this idea to the Zionist Congress in 1903 as a “temporary haven” for Jews. Delegates at the congress strongly opposed the idea and remained committed to Palestine as the only sanctuary for Jews scattered throughout the world. Herzl died in 1904, but his contributions to the movement earned him the title of the “Father of Modern Zionism.”

Between 1881 and 1903 the first modern migration of Jews to Palestine established a small but influential presence. The first group of settlers was known as “Chovevei Zion” (Lovers of Zion). Numbering just thirteen men and one woman, the group landed at Jaffa on 7 July 1882. Many others followed during the first aliyah (going up) to Israel. In 1904 the second aliyah brought a new wave of immigrants to Palestine, mostly Russian Jews, including such influential leaders of the nation of Israel as David Ben-Gurion and Izhak Ben-Zvi. By the beginning of World War I about ninety thousand Jews were living in Palestine.

Diplomacy

Zionists pursued their political agenda for a Jewish state in Palestine through diplomatic means with Great Britain and the other Allied powers (Russia, France, England, Italy, and the United States). The



British tried to gain support in the Palestinian region from both Jews and Arabs. Because Palestine was under the political control of the Ottoman Turks, who joined Germany to oppose the Allied powers, the postwar division of Palestine by the victorious Allied forces was complicated by secret and ambiguous agreements made during the war among the British and Arabs and Jews.

Correspondence between Arab leader Sherif Hussein and the British high commissioner in Egypt, Sir Henry McMahon, expressed British support for an independent Arab state in Palestine. At the same time as these negotiations, the Sykes-Picot Agreement divided the region into mandate territories that would be under the influence or direct control of the British and French governments. The Sykes-Picot Agreement of 1916 contained provisions that contradicted the Hussein-McMahon correspondence.

Meanwhile, Chaim Weizman, a Russian-born chemist and president of the World Zionist Organization, made contacts with many British leaders to gain sympathy for the Zionist cause. David Lloyd George, prime minister of Great Britain, viewed Palestine as the biblical home of the Jews. Also, British foreign secretary Arthur Balfour was supportive of the Zionist viewpoint and hoped that a Jewish homeland in Palestine would enable the British to have an influential presence in the region. On 2 November 1917, the Balfour Declaration expressed Britain's public support for the establishment of a Jewish home in Palestine.

As a mandate territory under British control, Palestine was defined geographically for the first time in modern history. The League of Nations ratified the Palestine mandate territory in 1922. The preamble of the mandate included the Balfour Declaration, thus promoting the Zionist ideal of a Jewish state in Palestine to the status of international law.

Under British rule immigration by Jews to Palestine continued. Political and economic competition between Arabs and Jews escalated during the 1920s. Tension between the two groups climaxed in August 1929 during a Jewish religious fast when riots broke out in Jerusalem. More than sixty Jews and Arabs were killed. The British declared martial law in the region and sent an investigative commission to conduct

hearings and issue a report. The report, known as the "Passfield White Paper," stated that the riots had been caused by Arab fears of Jewish domination. The white paper called for a suspension of Jewish immigration until a policy could be created. The protest from Zionists and Jewish immigrants was so strong that the white paper was repealed the next year.

The rise of the German Nazi leader Adolph Hitler in 1933 resulted in a new wave of anti-Semitism in Europe and a large migration of Jews to Palestine. By 1936, 30 percent of the population in Palestine was Jewish. Arabs reacted violently to the migration because they feared that they would become the minority group. Arabs pleaded with the British for their support.

In 1939 the British sought to resolve the Arab-Jewish problem by limiting the Jewish population in Palestine to one-third of the total population. Furthermore, the British declared that Palestine would become an independent state within ten years. Many Zionists saw this declaration as unacceptable because the state would be under Arab majority control, and the movement to establish a Jewish homeland would end. Many Palestinian Jews demanded an immediate uprising against the British. But the most prominent Zionist group, led by David Ben-Gurion, opposed an uprising. Instead, Jews undertook active resistance to the restrictions on Jewish immigration.

During World War II Zionists supported the Allies (France, England, China, Russia, and the United States) against Germany. Zionist leaders did not become aware of the Holocaust and the German plan to annihilate the Jewish people until 1942. The war in Europe and the Holocaust made it essential for Zionists to enlist support from the United States for a Jewish state in Palestine. Prior to World War II the United States had been neutral on the issue and saw the Palestine region as the responsibility of the British government. At the Biltmore Conference of the World Zionist Organization in 1942, Zionist leaders unanimously called for the immediate establishment of a Jewish commonwealth in Palestine and sought to pressure the United States into supporting their agenda. However, both British and U.S. governments opposed the Zionist plan because they wanted to

maintain close ties with Arab neighbors who controlled vital oil deposits.

U.N. Resolution 181

At the end of World War II the British government sought an end to the mounting violence between Jews and Arabs in Palestine. Unable to mediate a settlement, the British unceremoniously turned the problem over to the United Nations in 1947. After much deliberation the United Nations on 29 November 1947 passed Resolution 181, which proposed partition of Palestine into separate Arab and Jewish states, with Jerusalem under permanent trusteeship. This resolution guaranteed a Jewish homeland. The Arabs immediately opposed the partition with violence. British troops hastily left the region in May 1948, refusing to enforce the U.N. resolution, and Zionists proclaimed the creation of the state of Israel. The first Arab–Israeli war erupted on 15 May 1948, with Arab armies from Egypt, Lebanon, Syria, and Iraq invading Israel. After a series of ceasefires and armistice agreements, Israel won its independence, and the Zionist dream was a reality.

Since the establishment of Israel as a state, Zionism has continued, offering a homeland to Jews who embrace Israel as theirs. Formalized support also continues as Zionists create economic and political programs that support their cause and as they continue to remind Israel that their definition as a state also delineates their culture and history as Jews. The most activist sects of the Zionist movement have viewed the military successes of Israel in the 1948 War of Independence and the Six-Day War of 1967 as divine miracles and a foreshadowing of the coming of the biblical Messiah. Thus, some Zionists view the retaining of the biblical land of Israel as a “holy war” against Palestinian nationalist ideologies and Islamic religious movements. Furthermore, they believe that the existence of Palestinian settlements in the West Bank and Gaza Strip has prevented Jews from being able to claim complete or at least peaceful success in their goal of a homeland. More moderate Zionists have maintained a purely political agenda to continue to secure a homeland for Jews and maintain a cultural

identity, trying to live in peace with their neighbors. However, some countries outside of the Middle East strongly believe that Zionism has refined itself from what had begun as a political agenda to an agenda driven by religious ideology.

To gain influence with the Arab community, Russia influenced the United Nations to draft Resolution 3379 on 10 November 1975, condemning Zionism as a form of racism and racial discrimination. The United States and its Western allies, who saw the resolution as a condemnation of the nation of Israel, bitterly contested the resolution. In 1991 the resolution was repealed amid efforts to allow the United Nations to play a role in the ongoing Middle East peace talks.

Zionism continues to play a major role in the Middle East peace talks as recent terrorist attacks have led to a call for more national unity in Israel in the spirit of the early days of the movement. Zionist rhetoric is used by both Jews and Arabs to describe the tense political situation in the region. The key to the future of Zionism is the connection between its religious identity and its desire for a homeland.

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See also Judaism

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Zoroastrianism

Zoroaster was a Persian prophet who taught that rival gods—one good, one evil—struggled for control of the world. He called on his followers to support the good and promised them eternal life after the fiery end of the world. Today about two hundred thousand Zoroastrians remain in Iran, India, and North America. Zoroastrian dualism survives in concepts of hell and the devil as formulated in the Christian and Muslim religions.

Zoroastrianism is the ancient religion of the Iranian people. The prophet of this religion is Zarathushtra (Greek form Zoroaster), who lived approximately 1000 BCE in eastern Persia. The religion of the Iranians was closely related to that of the Indians who had immigrated to the Indus region. The Indo-Iranian religion was polytheistic and included two groups of deities, the Ahuras and the Daivas. Zoroaster reformed the old Indo-Iranian religion and made one group of these deities the beneficent ones (Ahuras), and another maleficent (Daivas). Among the Ahuras, one named Ahura Mazda (Wise Lord) was made supreme and the creator of the world and all that is good. Ahura Mazda was aided by a group of deities who act as his aspects or his archangels. While they were not a fixed number during the time of the prophet, they include Khshathra (Dominion); Haurvatat (Health); Spenta Armaiti (Devotion); Ameretat (Immortality); Vohu Manah (Good Thought); Asha (Truth/Order); and Spenta Mainyu (Holy Spirit).

Ahura Mazda is opposed by a host of fallen deities, the Daivas, who remained supreme in the Indic religion. For of each of Ahura Mazda archangels a deadly

and maleficent demon was created to bring death and destruction to the world. These Daivas are headed by Angra Mainyu (Ahriman), which can be translated as Evil Spirit. It is the Daivas who attempt to destabilize the universal order (arta) and are in constant battle with the Ahuras. According to Zoroaster's own words, people have the freedom of will to choose with a clear mind between the two sides, but if one chooses to be on the side of the Daivas and Angra Mainyu, he or she will suffer at the time of renovation (end of time) and will be placed in the Zoroastrian hell, which is dark and full of stench. But if one chooses on the side of Ahura Mazda, he or she will be prosperous and at the end of time will remain in the house of songs and best existence, that is, heaven. This is the first time in history that we find these concepts set forth, which later influenced Abrahamic religions when the Achaemenid Persian Empire ruled over Asia and the eastern Mediterranean.

The prophecies of Zoroaster are contained in seventeen hymns known as the Gathas of Zoroaster, which are part of a greater collection of hymns written down in the Sasanian period in the sixth century CE, known as the Avesta. The Avesta is multilayered and parts of it can be dated to different periods of Persian history. When Zoroaster passed away, his community composed a series of seven hymns known as Yasna Haptanhaiti, which is a further blessing of the Ahuras and solidification of Zoroastrian beliefs. By the time of the Achaemenid Persian Empire, the old Ahuras and some of the Indo-Iranian deities who were not the focus of Zoroaster's devotion made their appearance in the Zoroastrian religion. A number of deities such as Anahita, Mithra, Verethragna, Sraosha, and Tishtarya are worshiped and mentioned

Let us be such as help the life of the future. • **Zoroaster (c. 1000 BCE)**

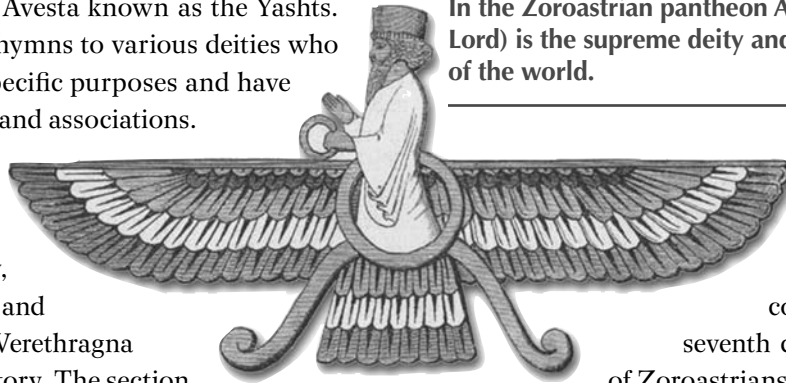
in the part of the Avesta known as the Yashts. These Yashts are hymns to various deities who are invoked for specific purposes and have various functions and associations.

For example, Anahita is associated with water and fertility, Mithra with oaths and later the sun, and Verethragna with offensive victory. The section of the Avesta that mainly deals with law of purity and pollution as well as early myths of the Iranian people is known as Widewdad (antidemonic law).

The priests who memorized these sacred words and were responsible for the compilation of all the hymns are known as the Magi. They appear to have been a Median tribe (according to Herodotus) who were specialists in religion and served from the time of the Achaemenid period onward. One of the ceremonies of the Magi was the Haoma ceremony, in which the Magus mixed plant juice with milk and drank it in order to gain power and have visions. Fire is the other sacred element, which the Magi respected and before which they sang hymns. Hence, the place where the sacred fire burned and the place where the Magi worshiped was known as the fire-temple.

By the Sasanian Persian Empire in the third century CE, the hymns that were memorized were collected and those that were deemed unfit were forsaken. The Sasanian state became allied with the Zoroastrian Magi and a Zoroastrian Empire was born. The

In the Zoroastrian pantheon Ahura Mazda (Wise Lord) is the supreme deity and the beneficent creator of the world.



Avesta was codified and written down in a specific script. With the Arab Muslim conquest of Persia in the seventh century CE, the number of Zoroastrians began to dwindle. The Zoroastrians became a minority in the

Muslim Empire and while some remained in Persia, many left for India. Today about two hundred thousand Zoroastrians remain in the world, mainly in Iran, India, and North America. Because of the low birth rate and the fact that Zoroastrianism is not a proselytizing religion, the number of followers of this religion is dwindling.

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See also Persian Empire

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